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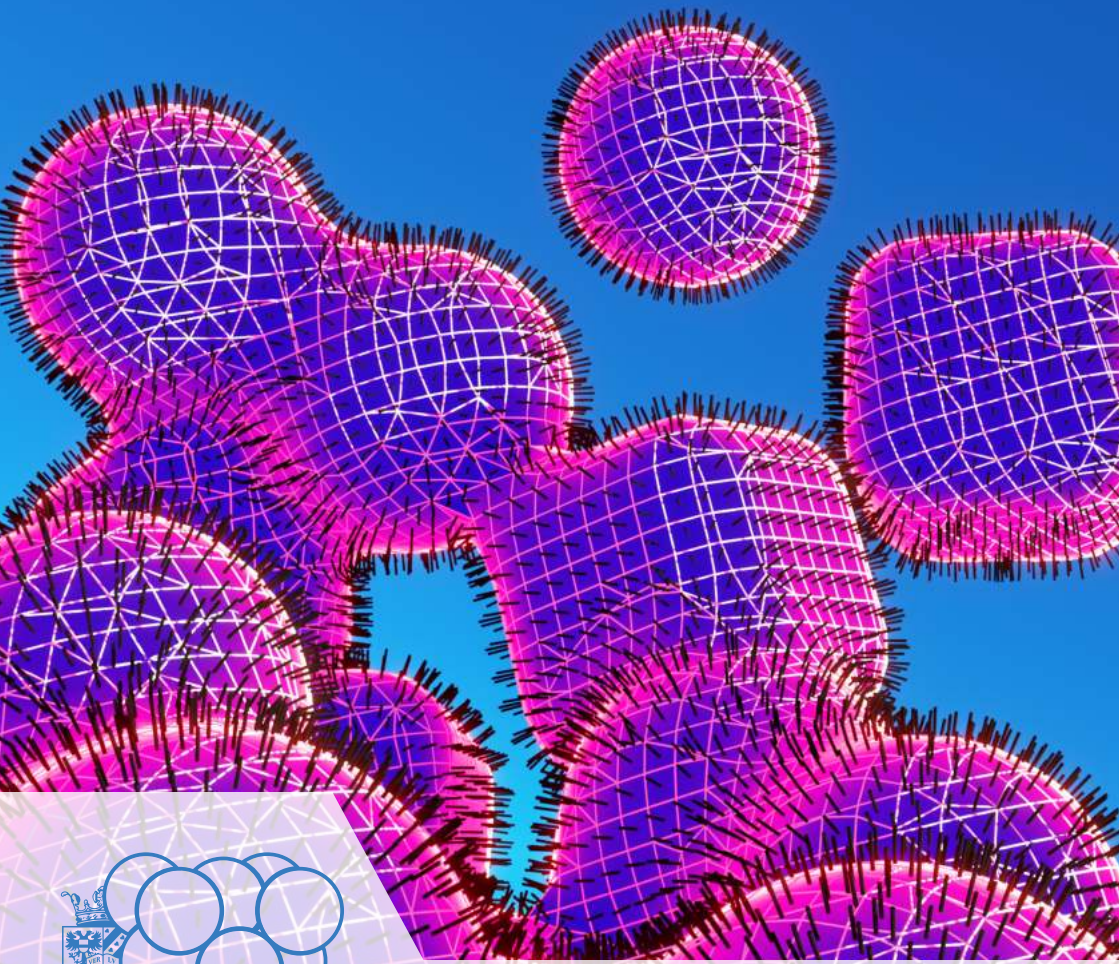
Francken Vrij



27.3 Normal

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Editorial
With the year coming to an end and half our committee joining the board of Francken, the Francken Vrij committee is wrapping up and already focusing on the new academic year. Speaking about the upcoming academic year, there are already a lot of motivated students in next year's committee, so I'm looking forward to reading all the fun rubrics and pieces that they will come up with and to all the places Bob will travel. Since the theme of this edition is Normal, I will also keep this editorial ordinary. I had a blast being the editor in chief of the last editions and wishing the next committee a lot of luck and fun on creating new editions of my favorite magazine!

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Chair's preface

By Csilla Tijssen

Time has been flying lately, somehow I find myself no longer being the chair of Francken. Our candidates have taken over (I'll always call them that, even when they will become old board). I thought my life would return to normal, but that's not quite what happened. Turns out, people adapt to the situation they're in pretty quickly, and being board had become my new normal. Now, as I return to my old life, I find myself readjusting, and it will take time before it feels normal again. Let this be a reminder of how subjective "normal" is. For every person a normal life, day or situation will mean something slightly or maybe even completely different.

During the last month before the transfer, people kept asking me how I felt about my board year coming to an end and if I was relieved that the work was done. Honestly, that's not the case for me. I'll miss justifying a day spent in the Francken room, playing klaverjas and enjoying some beers, as productive work. I am going to miss the amount of interaction I had with Francken members for a year and most of all I'll miss the collaboration with my board.

This just all goes to show what an amazing year I've had as chair of Francken. I can't thank everyone enough for their contributions. Thank you to the active members who made our events possible, to those members who brightened my days by frequenting (or almost living in) the Francken room, to the former boards and older members who offered their help, and lastly, a big thank you to Fusion for making this year shine as bright as a star.

News of the Association

By Filippo Carretta

Well, the time has come for my last written piece for the Francken Vrij as the secretary of Francken. It just so happens to be on a Francken Vrij with the theme of Normal which reminds me how throughout my board year the concept of normal to me has changed. I have learned the beauty of the beautiful crazy Francken members and its events and from there have come to love the association I have done board in. Here is the last news from the 38th board year of Board Fusion.

Sjaarcie dinner

The Sjaarcie dinner was the first official event for the wonderful sjaars of the academic year 2022-2023. Here they organized an international dinner in the hallway of building 5113 where they fed more than thirty people with an impressive three-course meal. Here we understood that the Francken sjaars can actually achieve something nice if they work together.

Hitch-hiking weekend

The hitch-hiking weekend was brought back to Francken by the Intercie committee. Here a variety of teams of two raced each other across the board to Germany to the town of Lubeck. Here they spent a weekend visiting the beautiful town of Lubeck and enjoyed what Germany offers for the students from Francken. In addition to this many members realized that it's actually a lot harder to hitch-hike than they had originally thought.

Klaverjas tournament

The famous Klaverjas tournament happened on the 31st of March in the Francken room. Throughout the year members at Francken have been playing the game nonstop in the room and gathering experience to use on this specific event. The tournament was well fought and long, and even so long that the final of the tournament is yet to be played. Some say that it will never be played and there will never be a winner of the Klaverjas tournament 2022-2023.

Buixie

In the previous Francken Vrij edition it was announced that this year Buixie will go to England and Scotland with the main attraction being to visit JET (the Fusion reactor in England). This indeed happened and certain Francken members enjoyed a week in the UK where they learned, partied, toured, walked, and slept very little.

Gala

This year's Gala was Harry Potter themed and was called the Yule Ball (even though the timing of the ball is nowhere near that time). Regardless of this Francken members showed up in numbers to enjoy a long unforgettable night with their favorite Francken members.

Symposium

Following Buixie the symposium is the second largest event of the year for Francken. Here it's a day filled with lectures and talks about an interesting topic related to applied physics. This year's symposium was on quantum computing where Francken members learned the invasion that is happening in the field of quantum computing both in the field of industry and academia. Researchers came from across the Netherlands to give an insight into their research in the field of quantum computers.

Sjaarcie Party

The second and last event for this year's sjaarcie committee was that of the Sjaarcie party held in the Dorst. After the successful Sjaarcie dinner held earlier in the year, the sjaarcie organized yet again a strong party where members relaxed as they head into the last event of the board year 2022-2023 the Transfer General Members Assembly.

T-GMA

The infamous T-GMA is where members say goodbye to the current board and say hello to the new board of Francken. Here Fusion led the meeting and introduced the new board, Freefall. Here members got to hear what they would like to implement in their next year. Following this they were installed as the 39th board of T.F.V. 'Professor Francken' with applause.

What is a normal career of an Applied Physics graduate?

By Dr. Petra Rudolf

When I learnt about the theme of this issue of Francken Vrij, I immediately thought of the question in the title, asked by a potential student during our Open Days, and I decided to reply to it here.

Let me start by saying that there are big differences between countries: In the United States and the U.K., only a minority of students do NOT enter the labour market after they got their bachelor's. According to the American Institute of Physics, in the USA only 9% continue with a MSc & PhD, two-thirds join a company in the private sector, 8% become high school teachers, 6% join the military, and 5% join public administration or a national research lab. In the U.K. the percentage of students that continues their professional physicist education at a university is 37%, 43,5% find employment in a private company and the rest becomes a teacher, join the military, do a government traineeship, become a patent lawyer,…. In the Netherlands instead, 87% continue with a MSc degree and also in the rest of continental Europe. Where do they go after the master's study? 58,2% of the UG Applied Physics graduates start a job in the industry, 31,6% continue in academia (mostly with a PhD project), 2,5% join a research institute, 1,3% decide on a job in education and 6,3% are hired by a medical centre like our UMCG. For PhD students, we do not have separate statistics for Applied Physics but only for the Faculty of Science and Engineering as a whole and from that we know that of the 83% who already have a job when they defend their dissertation, 54% stay in academia, 23% go to industry and 6% make a different choice like the ones we shall discuss shortly. Five years later, 89% of FSE's former PhD students could still be traced and the percentage still working in academia has gone

down to 44%, while 35% are in industry and 9% have made other choices; only 1% are unemployed. Of the international PhD students graduating from Dutch universities, 32% still work in the Netherlands after 10% according to a study by the Ministry of Economic Affairs in 2015.

Many students worry about finding a job, but the chances of being selected are extremely high. I have not been able to find statistics for bachelor degree holders but 85% of those with a master's degree are hired within 4 months from their graduation, 65% even already within 1 month. Why are graduates so highly required by the labour market? It is because apart from having acquired knowledge in applied physics and engineering competencies your study provides you with an amazing palette of skills: you can solve problems with a pragmatic and analytical approach; you learnt to construct logical arguments and grasp complex issues, to undertake research and thoroughly analyse data; to use mathematics to find solutions to scientific problems, apply mathematical modelling and interpret and present information graphically. You also acquired practical skills like planning, executing and reporting experiments, using technical equipment and paying attention to detail. Your communication skills are highly developed: you know how to convey complex ideas and use technical language correctly, discussing ideas and taking on other viewpoints. You are also trained for working in a team, had to learn time management and organisation to meet project and research deadlines and are very knowledgeable in information technology, including specialist software packages and some programming. If you continue with a PhD you will also have guided bachelor and master students as a daily supervisor and learn how to teach. There are very few candidates in the pool of job seekers who have all these competencies.

Let's look at the jobs themselves: if we run through the job descriptions of our alumni we find all different types of engineers – not only research engineers but also system engineers; design, mechanical, electrical and optical engineers; quality/test engineers. There is also highly specialized technical staff, like an accelerator technician, a process and a manufacturing technician. Outside R&D we find business analysts and consultants, project managers and an investment associate. Then some alumni have chosen the IT sector and work as software engineers/developers, programmers, systems or data analysts or IT consultants. Becoming a medical physicist is another possible direction and these graduates later work in radiation treatment of patients or in medical research. Of course, some choose to teach at high schools or universities of applied sciences. The graduates who work at universities, don't all go for a research career, some become study advisors, teaching lab directors or lab tech-

nicians. Finally one can also go for a career as a science communicator, science journalist or curator of a science museum.

Of course, you can all begin your own start-up company – here in Groningen, we have the highly successful examples of Nikos Tombros, who set up HQ Graphene and now delivers to clients all over the world, and Artem Shulga, who transformed knowledge acquired during his PhD into QDI systems, a start-up company that develops imaging devices for medical applications based on quantum dots.

You might ask yourselves if once you decide against academia, this is a definite choice. The answer is no, in fact, those who continue with a research career in industry can come back as full-time staff like Pieter van der Zaag at our university, who after 17 years at Philips Research where he worked on topics related to healthcare, in connection to novel cancer diagnostics and authoring 70 patents, came back to academia work on physics-related topics relevant to healthcare in a joint appointment between the Zernike Institute (Faculty of Science and Engineering, FSE) and the UMCG. Another possibility is staying in industry but taking up a 1-day per week professorship at the University as a side job to do research that you can't do in an industrial setting. We currently don't have someone with a profile in applied physics in Groningen, but we had them in the past, and at TUDelft or at the Eindhoven University you find several professors with that profile. If you choose to work at a research institute, you can also be affiliated with a university, like Bruno Ehrler, who leads the Hybrid Solar Cells group at AMOLF in Amsterdam and is a professor at the Zernike Institute. However not only a research career can bring you back to university: Margriet van der Heijden was for many years the science editor of the NRC Handelsblad and is now Professor of Science Communication at Eindhoven University of Technology.

Let's talk about salaries. Having chosen applied physics already gives you an enormous advantage in the labour market because according to the U.S. Department of Commerce Economics and Statistics Administration, people with a STEM bachelor's degree earn 12% more than people who have made different study choices if they are a man, 9% more if they are a woman. But if they not only study a STEM subject but also work in a STEM field afterwards, their salary is 23% higher if they are a man and 29% higher if they are a woman than that of people who made a different choice, so my recommendation, obviously, is: stay in science!

The salary for entry-level positions of people with a bachelor's degree in the United Kingdom starts at £36,000 per year (2023) according to the recruitment company talent.com but the 2022 Emsi Burning Glass

report produced for the Institute of Physics "PHYSICS IN DEMAND: The labour market for physics skills in the UK and Ireland" specifies physics-demanding occupations can be highly paid, but aren't always – ranging from laboratory technicians (median pay £21,400) all the way to aircraft pilots and flight engineers (median pay £97,400). How about the Netherlands? According to loonwijzer.nl the monthly netto salary for a starting physicist or astronomer varies between € 2.421 and € 3.198. After 5 years of professional experience, they will earn between € 2.796 and € 3.791 netto per month.

So, to summarize, is there a typical career for Applied Physics graduates? The answer is no, but there is an ideal career for you, depending on your character and what is important to you. In an industrial setting, R&D is nearly always a team effort and not an individualistic enterprise. Companies actively plan and foster your career and therefore make it more playable. Working schedules are usually more regular than in academia but you also have to accept that the company might decide to close a highly successful project you are working on and that your boss might be less experienced than you are – something that is rare in a university setting. An academic career offers you freedom in the choice of research topic but you are the manager of your career and actively have to seek opportunities to advance. A university career is less predictable than one in the private sector and as you move up, it gets rather lonely as well. However, as far as I am concerned, I was never afraid of the challenges and I find the energy and satisfaction I receive from the students and young collaborators extremely gratifying.

I wish you wisdom with your choice and lots of success in the future – after all, it is very nice to know that in 20-25 years of professional activity, you have a very high chance to be among the top 1% earners in the Netherlands while having a lot of satisfaction in your job!

For the bottom-up design of the future...

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You want to build the next generation of solar cells, starting from molecular building blocks? You want to change the world of computing by assembling revolutionary memory materials atom-by-atom? Or you want to develop materials preventing or curing disease? Then have a look at the Bachelor, Master and PhD programs related to and inspired by the Zernike Institute for Advanced Materials' research lines.

We participate in programs of Bachelor and Master levels in the field of Physics and Chemistry. But, since it is our mission to train a new generation of researchers in cross-disciplinary approaches to research and equip them with the diverse skills required by modern science, we have initialized programs breaking the traditional boundaries between disciplines like e.g. the interdisciplinary Top Master program Nanoscience and the High Tech Systems and Materials Honours Master, which tackles real-life product development challenges in the same interdisciplinary fashion.

Additionally to the Bachelor and Master education, the Zernike Institute has the responsibility to train almost 200 PhD students to become independent, high level scientists. The main component is 'hands-on training', working side-by-side with the research staff of the institute.

Are you interested in joining our team for a Bachelor-, Master-, or PhD-project? Check our website http://www.rug.nl/research/zernike/education/ on the different educational programs or directly approach us via zernike@rug.nl.

Life after Francken

By Laurens Even

While I'm writing this, it's more then 3 years ago I started my career as a high school physics teacher. Something I myself couldn't have imagined just four to five years ago. How I like the job? You'll find out soon.

Some of you might remember me, but there will be lots that don't. For a bit of context, I studied physics in Groningen from 2012 to 2016 and was an 'active member' from 2016 to 2018. After organizing the Buixie of 2017, an exciting trip to Austria and Slovenia, together with Max, Nikki, Anna, Rick & Mees, I joined the Fraccie for the year '17-18; where good times passed by with Tamara, Alida, Jeanne, Puck, Sven & Arend-Jan with some super fun and entertaining activities organized for our fellow Francken members.

But since this piece is about life after Francken, I will continue with that part. I received my bachelor's degree in Physics in 2016. Since the energie and milieu track (back then still given partly in Dutch) appealed more to me than continuing within the hardcore

physics research, I started the master Energy and Environmental Science in the same year. I was happy to be one of the first users of the energy academy building in Groningen which opened May 2017. A very nice and open feeling environment to be in as a student. After having done my master

thesis on lightning and carbon-14 production, I was able to enter the well-known 'Apenrots' for my 20 ECTS internship at the Gasunie. On the 16th floor, I made a model of district heating focused on transporting excess heat from the Eemshaven to houses and utilities in Groningen. Similar to what WarmteStad is doing in Groningen for the last years. I really appreciate I got the chance to do an internship at Gasunie and to also have some insights in what more the they do besides their legal requirement; which is maintaining the gas pipelines in the NL (for good reasons!). I especially learned about their new projects moving the company slowly but steadily away from natural gas and more into hydrogen and district heating projects.

In 2019, after graduating from my EES master, there came a gap… What was I going to do with my life? What kind of job would I go and apply at? I had no clue. To give myself some time to think about my future, I worked at Cycloon Fietskoeriers in the meanwhile. What is better than staying fit ánd getting paid while cycling through Groningen, endangering pedestrians, chasing cyclist and irritating cars (well it's not that hazardous, but some road users might be irritated), but most of all making our customers satisfied with their ordered goods. After a while, my girlfriend, not from Francken, nudged and inspired me to chase after my current career path: becoming a teacher.

Therefore, in February 2020, I started the the Lerarenopleiding Voorbereidend Hoger Onderwijs. Since I already finished a science master, I was able to obtain my teacher certificate within 1,5 year instead of the 2 full years. Who could have thought that just two weeks after starting my internship at Aletta Jacobs College, the high school of Hoogezand, the first lockdown due to COVID was initiated; no more physical classes nor lessons for the first months to come. Luckily, my 'vakcoach' (senior physics teacher who coached me in becoming a professional physics teacher myself) quickly allowed me to take over some of his classes online. So, it happened, I gave my first and very own classes to pubescent students while teaching them from home. My internship was no more than using Microsoft Teams and sitting in my own little workspace in my student room. I was challenged to use digital technologies to motivate pupils to learn and study physics and also to monitor their progression online. Making contact with all pupils in a class is not always easy, not in general, but especially not when the setting is a digital classroom with 20+ pupils. Therefore, more and more I used break-out rooms in Teams to have the pupils work together with the hope they learned more when they were together, and to have more social contact. This way of teaching turned out to work really good for part of the pupils while some others used the time to game at their home computer... Funny enough, the use of breakout rooms

followed soon by most other teachers and they could learn that new way of teaching from us, the upcoming teachers.

Luckily just before the summer holiday of 2020, I was able to give some actual physical lessons of physics and see for the first time the complete physical appearance of the students of whom I had only see their faces for the months before. After the summer break I returned to my previous school to finally see the physical school for more than just two weeks and continue my second and third part of the internship. However, as you know, a normal year would turn out not to follow. Lockdown, online classes and later even hybrid classes made me experience the whole shebang. The nice thing? During all this, I was able to spend a few weeks totally away from Groningen, while still being able to fulfill my duties and give (online) lessons. The best experience of working from 'home', was when me and my girlfriend had booked a holiday house on the island of Terschelling back in March 2021 during a workweek. What is better than starting your day giving some classes, having a break in the dunes, giving some more classes, cycle to the beach, enjoy, return to prepare some classes for the next day and make a nice diner or go to a restaurant. Well all this may sound easy, don't forget this digital way of teaching had its own challenges, but still, why not turn around bad circumstances to create cool opportunities as long as you can, right?

Fast forwarding two years later and getting to the point of Life after my second master. Having finished my studies is really nice! Being a teacher is a fun and honorable job. Not your standard nine to five job sitting at your office, but constantly being in motion. Although you don't always (directly) feel rewarded by the students, they're not adolescents for nothing, the joy of the job is in finding entries in their head; to get across the skills and knowledge of physics, science and critical thinking in general. Do I succeed, or better said, do they succeed? Well in some way it's a surprise for me every time I see them. That makes it joyful and stressful work at the same time. You feel the responsibility of them learning enough and to succeed to be able to go to the next year or having them pass their exam. On the other hand, we're all humans and sometimes the students just seem to not wanting to learn anything; or not from me? There-

fore a question which keeps on popping through my head is: What can I do (more) to get them motivated to actively participate during class? The challenging part of teaching is that you can be told how to teach in a million ways and have a lifetime of experience, but again and again you have to find out yourself in each and every different setting. People sometimes say becoming a teacher is like learning a real profession, while others think it gets repetitive. What I like about teaching: You're never done learning and you never have done enough. Neither have your students. There are always new, advanced and other things to learn.

For the last years I'm teaching at CSG Augustinus, a school with over 1300 pupils and 110 staff members. My working hours consist of not only giving physics classes, but also the courses Natuur, Leven en Techniek (NLT) and the Talentstroom 'Lego Robots'. NLT is an optional course which pupil can choose for the upper classes of havo and vwo. A nice course, less classically taught (double meaning), and more focused on skills, working together and combining disciplines. Talentstroom is a compulsory course in the two lower grades where pupils give their preference which module they like most. I created a series of lessons for a module around the Lego devices Mindstorms EV3 and Spike Prime. Within the course I challenge the pupils to learn some basic programming (scratch based), to be creative and find solutions and of course play around with Lego.

Besides giving your classes you pick and/or are assigned tasks within the organization. Think of tasks being everything besides giving your courses (preparing and giving lessons, making and checking exams, coordinate with colleagues and what more). These tasks make your work more varied and give new challenges. What I like less of being a teacher is the intensity during moments when many things (tasks and teaching) come together. This makes it difficult to be able to still spend enough energy on your primary task as a teacher: engaging with all your students in class. Maybe by now you're wondering 'what kind of tasks does a teacher have more besides teaching?'. I will give some personal examples. This year I started coaching small groups of students who did their own little research on a topic as part of the profielwerkstuk (PWS) at havo and vwo. Another one is being a

'mentor'; most teachers will be within 1 or 2 years after their start. As a mentor you're assigned a class or group of students and guide them through the year. The role of mentor can demand quite some time, but can also be very rewarding. Another task I do is coordinating the centrally organized exam weeks, completely different and oh so nice when everything went well. Within the organization also exists all sorts of 'committees', think tanks and whatsoever. Furthermore, next to these assigned tasks there're also exist monthly returning 'docentenmiddagen' organized around improvement and discussions with colleagues, but also 'rapport- en leerlingbesprekingen', '10-min gesprekken' with parents, meetings with the physics teacher team, etc. etc.

I think I have said enough about this part by now and it's time to wrap up.

So did you ever thought about becoming a teacher? Now is the time to do so since schools are looking for you! Most vacancies are out and especially physics is one of the subjects with a shortage of (new) teachers. Teaching is fun and rewarding (mostly then :p), is always dynamic, no day is the same, nor are the students. Also, school is the perfect place to further develop your own skills and even improve your knowledge. Work together with your fellow physics enthusiast colleagues and broader a mixed team of both teachers from all subjects and 'Educational supporting staff' (OOP in Dutch). Ready to join the teacher force? When you already finished a bachelor and a master related to a school subject you can do a 1-year LVHO master's degree. With only a bachelor in one of the high school subjects you can get your teacher degree within 2 years with the Education master.

I hope you enjoyed reading my journey in the life of the last decade and you don't have to hesitate to contact me when you have any questions about the profession as a teacher.

Francken abroad

By Steven Groen

What a pleasure to write for the Francken Vrij again! Some of you may know me as a treasurer of Francken in a distant blurry past, or a Francken Vrij editor who made incomprehensible puzzles ages ago. But seeing that eternity has passed since that time and Francken has completely refreshed its set of members multiple times, you probably don't know me at all, except maybe as that shirtless guy on the Borrelcie banner, which is still in the Francken room against everyone's expectations. I graduated from the University of Groningen in 2019 and moved to England, to pursue a PhD in number theory at the University of Warwick. In this piece I will tell you a bit about the experience I had there. I will do all applied physicists reading this magazine a favour and refrain from talking about number theory.

British culture

From 2019 till 2022, I lived in Royal Leamington Spa, a leafy and rather posh village in central England. About 100 metres from my house was a tree that marked the exact spot in England that was furthest removed from any sea, so that's about as central as it gets. In the past, Leamington served as a luxurious spa town for the upper class, but sadly all the former bath houses are now closed. Despite that, it was a great place to live. Next to Leamington lies the old village Warwick, which confusingly is not where the University of Warwick is. More about that later.

Upon my arrival in Leamington, I was surprised to discover that some stereotypes, which I had expected to be outdated, were in fact completely accurate. Six-year-old

children actually wear a braspak to school, the whole country is filled with red phone booths (even if nobody uses them anymore) and police officers really wear these silly looking hats. I experienced a short culture shock, but pretty soon I found myself reading about the adventures of Harry and Meghan daily, in the free newspaper on the doubledecker bus to university. Being Dutch and therefore very direct, it took me a while to learn the art of politeness and say sorry even if someone bumps into you while you're standing still. I continue to be impressed by the quick-witted sense of humour that all British people have, which is so essential in how they interact with each other. To my disappointment, I also found out to what extent the class system, dividing the population into the upper class, the middle class and the working class, is still alive and influential in everyday life. From the very start, children from different classes go to different schools, causing them to end up in different jobs and different social environments later. They end up having very little contact with people outside their class, which causes a lot of social inequality. You might think that British people want this to change, but change is the thing British people despise most (which is probably why the red phone booths are still around).

Figure 1: A royal visitor at a Christmas market in Birmingham. The yellow hat was once won at the Tour de Francken.

Figure 2: Cycling through the North Pennines around 7 a.m. on the second hottest day in the history of the UK.

One cultural artefact that has made a lasting impression on me, and that I bet has been experienced during the last buixie, is of course the pub. Completely ubiquitous throughout the whole country and in every imaginable setting, the pub is where everyone's social life takes place. In the Netherlands a kroeg is mainly a place to drink, dance and make a deep emotional connection with strangers, but a British pub covers a much broader assortment of occasions. You can have a full working day, eat three greasy meals, watch a football game, participate in a pub quiz, watch or even perform live music, play pool, win a prize at the slot machine and finally sing karaoke, all without having to leave the pub. Even if a village has only a couple of houses, it will have a pub or two. It's especially these pubs that remind me of the Francken room; a place where you can spend your day however you please and meet your friends without even knowing in advance that they'll come. I would definitely like to see this more in the Netherlands, to make towns and neighbourhoods more gezellig.

British nature

The UK is quite a popular tourist destination, but I'm convinced that tourists visit the wrong places. London can be quite underwhelming, let alone the other major British cities (apart from Edinburgh), but the natural beauty is stunning and unique. Especially during the pandemic, I spent a lot of time cycling through the British countryside and realised that the countryside around Groningen is quite boring in comparison. In the summer of last year, I went on a cycling holiday in England for two weeks, cycling 800

Figure 3: The view from Mount Snowdon in Wales on a rare sunny day in April.

km in total. We went from Leamington, through the Peak District, Yorkshire Dales and Lake District, to the North West coast, and then to Newcastle on the East coast, through the North Pennines. I can very much recommend these areas, especially the Lake District, to anyone who is considering a trip to the UK! Another gorgeous place I've been lucky enough to visit is Snowdonia, a national park in the North of Wales. If you happen to be there when it doesn't rain, it has amazing walks and views from the mountains to offer.

The University of Warwick

Contrary to what the name suggests, the University of Warwick is found in the city Coventry. It was named after the county Warwickshire, but for some reason failed to be named University of Warwickshire. To make the confusion complete, Coventry stopped being part of the county Warwickshire just nine years after the University of Warwick was founded. You might consider this a pretty rough start, but the university started to flourish soon after it was founded in 1965, in part due to the financial

support of a local businessman who had gained a fortune by investing in Smirnoff. I had never heard of the university before I applied for the PhD programme, but it has a very large maths department. The maths building is delightful, with blackboards everywhere and a common room, including a kitchen, where the vrijmibo is organised and where PhD students and staff have lunch all together. Contrary to Groningen, the many maths PhD students at Warwick form a tightly knit community, which made it easy for me to make friends and feel at home. My kandi Evelien Zwanenburg started a PhD in applied physics (which she'll hopefully write about in Francken Vrij soon!) in the building next to mine at the same time, so we were able to compete in the Crash & Compile as a team during the pandemic.

One misfortune of the university is that it lies in Coventry. Should you ever find yourself in the vicinity of Coventry, make sure not to visit it. It's hideous, dangerous and filled with people who seem to have given up all hope in life. The city's colourful medieval centre was almost completely destroyed during the Second World War and it has unfortunately never recovered from this blow. Coventry is not unique; many medium size cities in England, like Slough (described in the eponymous poem by John Betjeman), Bradford, Hull, Huddersfield, Wakefield and Barnsley (the list goes on) have a strong depressing quality, even without having been bombed, and rank among the most dangerous places in Europe. This is a flipside of Britain that most people don't get to see.

Conclusion

My stay in the UK has flown by and is almost coming to an end. In August, I will have to leave England behind and move to Pennsylvania for a postdoc, hopefully to return to the Netherlands after that. Wherever I go, I will definitely miss the pubs and the British sense of humour. I can honestly say I've had a brilliant time here and I can recommend a visit to (the right parts of) England to anyone! If you need any advice on places to go in the area, feel free to hit me up!

Meet board 'Freefall'

Ciska van Elsberg

Hello fellow Francken members! This is your candidate chair, Ciska, speaking. I am currently a third-year Applied Physics student. First, let me share a little bit about myself: In addition to my new commitment to hit the gym with my buddy to ensure my tie remains perfect and never gets brassed again, I have a passion for sailing, especially in Croatia, as the dolphins love to hang around with us. Previously, I had the incredible experience of living in Japan for six months and USED to be able to speak the language quite fluently. I guess I will have to go back someday to freshen it up! After that, I came to study in Groningen and immediately became a member of Francken, which has helped me socially, emotionally, and practically. During my three years here, I dedicated myself to my studies, served as a treasurer in Buixie, enjoyed Francken parties, and got to know Groningen. Now, I am thrilled to bring all that I have learned to the new board and continue to learn more. I already know that I have made lifelong friends at Francken, and I want to contribute to ensure that others get a chance to experience the same. I can't wait to dive into this new role and work alongside all of you. Let's create something amazing together and have a blast while doing it!

Hannelys Posthumus

Hello, I am Hannelys, a second year Astronomy student and by the time you are reading this, I am hopefully the 39th secretary of T.F.V. 'Professor Francken'. After not being that much around at Francken in my first year, in my second year I made up for it by being around much at Francken and applying for the board. Many of you already know me, because I am quite often at events and in the Francken room, but for those who don't I will give some facts about me! The most important of them all is that I am Frisian, which unofficially makes me an international. If I am not studying, drinking with friends or sitting on the couches in the Francken room, I am probably playing guitar or bass, or I am exercising. I honestly enjoy every kind of sport but this year I thought: let's focus a bit more on one sport which I particularly enjoy, so I started speed skating at Tjas. Next academic year I hope you as the readers of this Francken Vrij are as excited as I am for the upcoming year. Hope to see you around!

Siem Kuijpers

Hey lovely Francken people, I have been late with writing this piece, so instead of still having to call myself the candidate Treasurer, as of writing this I'm already exactly a week into my board year. But don't worry, I won't postpone your declarations and the incassos the upcoming year. I'm fully committed to doing my board tasks on time. I was born in the, if I may say so myself, beautiful province named Brabant. Lilly-Anne has already said numerous times that I either need to speak a bit slower, or less "Brabants". But I thought it was a good idea to study both Economics and Business Economics, as well as Applied Physics for which the RUG was the only university that provided both studies. I'm now in my second year of both of my studies. So that's how I ended up here in Groningen. In my first year I was somewhat active at the start of the year, but wasn't there a lot later on. I only really started to Jass en borrel all of my study points away in Francken in this year. It slowly just got to me that I really wanted to enjoy more Francken instead of studying the upcoming year. I was going to talk about my hobbies outside of Francken, but I just realized that my biweekly climbing session and my monthly piano session aren't really worth naming. I think I'm becoming furniture…. Anyway, I'm looking forward to seeing you all amazing people in the room next year and hopefully accompany me as a fourth man or ask for some +1's.

Liz Titz

Hey! I'm Liz, a first-year (international) Astronomy student, currently the kandi intern of T.F.V. 'Professor Francken'. During my

first week at uni someone quite literally chased me around campus while screaming at me to join Francken, so I gave in and signed my soul away. This was one of the most decent ideas I've had in the past few years. When I moved here, I had to leave 12 years of ballroom dancing and my robotics association behind, which both played a huge part in my life, but Francken filled this void pretty fast. I made so many new friends and memories, like dancing on the table in the members' room, drinking from a traffic cone, getting stuck on the side of a German highway, or falling asleep with Pluis (if you don't know her, you need to spend more time around Francken!!). My goal for next year is to inspire Francken people to speak more English and less Dutch, and of course to make sure that everyone is having at least as much fun as I did in my first year. I can't wait to spend another amazing year with you guys, see you soon! :))

Lilly-Anne Kalderen

Hey! I am Lilly-Anne a third-year Applied Physics student and the candidate Commissioner of External Relations. I grew up in New Jersey, USA but I am half Dutch and half Swedish, so I am international and Dutch, whichever works to my advantage. I decided to do a board year because I am reaching the end of my studies and want to extend my student time here and Francken has been such a highlight of my student life so far. I applied for Commissioner of External Relations because I was the acquisition for the Buixie to France, but most of all I wanted to properly be able to participate in an external bak. In my free time, I like to do sports, especially gymnastics, which I have

been doing for years. I also recently started scuba diving, but that's not something I can practice here unless I want to look at all the bikes thrown in the very clean waters of the Groningen canals. I am so excited for the coming school year with my fellow board members, I think it's going to be a very fun and productive year together!

David Dijkman

Hey, I am David, the Candidate Commissioner of Educational Affairs and Vice-President. Most of you might know me as the person to blame if there isn't enough Dors in the fridge and I'm afraid this won't change much for the upcoming year. Outside of Francken I really like playing guitar or singing loudly while taking a drive. You can also always hit me up for some board games, video games, or roleplaying games. I didn't originally apply for the educational role, because I thought this inherently meant you have to be smart, but I've come to realize that knowing smart people is a lot more important. Increasing the interaction between students, their professors and the research groups could really bring the best out of our members and I hope to achieve this through the many fun educational events throughout the year. Of course I'm also here to talk to if any of you are struggling with your courses. However, a big part of being educational is knowing when you need to take a break from your studies, because hey, sometimes a day trip to the Efteling IS more important than taking an exam. I really could not have wished for a better candidate board to spend the coming year with and I hope you are as excited about the 39th year of T.F.V. 'Professor Francken' as I am!

Bobs Adventures

By Rayan Rakibuzzaman

On my way to the Francken member's weekend, I had no idea I'd be making a new friend. A friend of the fluffy, adorable kind. Everyone introduced me to this cutie called Bob the Dog.

Bob, you see, is a special dog, his main clothing is symbolic of the study association he most likes, T.F.V. 'Professor Francken'. It seems Bob's previous adventure has gotten him a special waterproof beer coat.

I had never met a dog who is an honorary member of a study association and he said he's had the best years of his life at Francken. I had a wonderful time with Bob, starting at the member's weekend where he joined me at the cantus event. Bob said he was taking a break from drin-

king so I hid him out of sight so that the cantus princess wouldn't send her goons after him. We shared the bed, and while he did have some trouble sleeping due to some snoring, he said he would gladly do it again. The next day, I took him on a hike on the local trail and let him enjoy the sun. Bob made a friend as well, the dog of the house owner. Bob also witnessed the rare Prins Friso, while he gave one of his famous beer yoga sessions.

Bob went to most places with me and joined me in many study sessions where he was the best therapist during tough times. He also joined me on a date, and while the date did not go as planned, Bob had a great time making me a third wheel for a bit.

On a Friday, I took Bob to Filippo's for dinner.

While Filippo chatted with Bob, he made the rest of us cook so obviously Bob enjoyed the food more. I introduced him to some of my friends and we both made a new friend as well. Bob was pretty full after dinner, so he let me ride the bike on our way home.

I also took Bob to Zernike; a place Bob is no stranger to. The day started with us hitting the gym together. He said he doesn't need to workout because he's already perfect but agreed to join me just to show me who's boss. To my surprise, he asked for 4 weights and proceeded to lift all of them! I guess having more legs can be beneficial after all.

At Nijenborgh, I took him to the optoelectronics lab. While he wasn't allowed in the cleanroom (since his cuteness would ruin sensitive equipment), I let him use the glovebox outside which he really enjoyed. I showed him my thesis materials, and while he said he could solve it in 10 minutes, I urged him not to embarrass me and he agreed not to. He did give some inspiration about it which I really appreciated. He said his dream is to go where no dog has ever gone before and I asked where that is, but he refused to answer. I guess a dog must have some secrets.

As I'm writing this article, I see Bob getting excited about his next adventure. He said I've managed to make the time we spent worth his while which I think is the highest honour I've ever been given. I'll be sad to see him go, but I would love to see where he goes next.

Member's input

By Ids Schiere

As physicists we quite enjoy symmetry since it can make a bunch of stuff a whole lot easier, luckily the same holds for music and symmetric chords and scales exist. These symmetric chords and scales hold the unique property that you only need to remember 3 or 4 versions of them which is pretty convenient. The chords and scales with this property are called diminished and augmented.

To explain how these work it's important to understand some basic music theory that revolves around intervals. If you take the C-major scale you get the notes C, D, E, F, G, A and B taking C as the root you get the following intervals:

- D-major second (2 semitones up and 10 semitones down)
- E-major third (4 semitones up and 8 semitones down)
- F-perfect fourth (5 semitones up and 7 semitones down)
- G-perfect fifth (7 semitones up and 5 semitones down)
- A-major sixth (9 semitones up and 3 semitones down)
- B-major seventh(11 semitones up and 1 semitone down)

Its minor variant would flatten(b) the second, third, sixth and seventh by one semitone giving the following intervals:

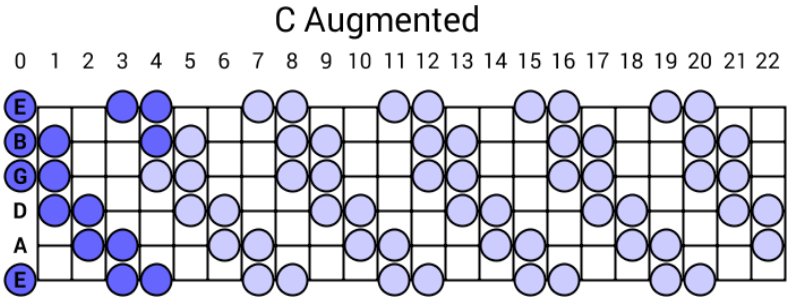
- Db-minor second (1 semitones up and 11 semitones down)
- Eb-minor third (3 semitones up and 9 semitones down)
- F-perfect fourth (5 semitones up and 7 semitones down)
- G-perfect fifth (7 semitones up and 5 semitones down)
- Ab-minor sixth (8 semitones up and 4 semitones down)
- Bb-minor seventh(10 semitones up and 2 semitones down)

The most basic chords can then be built by taking the root, third and fifth or in other words a triad. So for a C-major triad, you'd get C-E-G and for a C-minor triad, you'd get C-Eb-G so the difference between a major and minor triad is a flattened third.

In principle the Augmented chords and diminished chords have a similar way of building them, the difference is that augmented chords are built from stacked major thirds and diminished chords from stacked minor thirds.

For example, if you'd take a C diminished chord you would have the notes: C-Eb-F#-A-C where each of the notes are a minor third apart and it contains the tritone (C and F# is a pretty evil-sounding motherfucker when played together). The corresponding diminished scale contains all the notes of the diminished chord and the note flattened by 1 semitone (C- diminished would be C D Eb F F# Ab A Bb). For both of these counts that it repeats every 3 semitones making them symmetric since whether you play C, Eb, F# or A diminished you're playing exactly the same combination of notes, so there are really only 3 you need to know to know them all(they are effectively each other's inversions and the naming would depend on the context you put them in).

If you'd take the C augmented chord you would have the notes: C-E-G# which are all a major third apart and the augmented scale works in the same way as the diminished scale where the notes for the augmented scale are C-Eb-E-G-G#-B. Which repeats



every 4 semitones so C, E and G# augmented all contain the same note and therefore is typically referred to as symmetric since you only really need to learn 4 chords to know the augmented chords for the 12 different root notes.

The symmetry in these chords and scales makes it very easy to memorize since you only need to learn one shape in three or four positions to be able to play all of them (you can go more in-depth to learn them all across the fretboard but that's beside the point). Since guitarists are still a bit like children in the sense that we still like to play with shapes (as well as continuously wanting new toys) it's very convenient and easy to learn them.

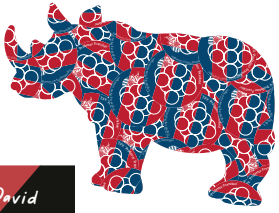
Some examples of songs that use these chords would be Because, All My Loving and Being For The Benefit Of Mr Kite by the Beatles and they are used a lot in gipsy jazz(Django Reinhardt, Stochelo Rosenberg, Jimmy Rosenberg, Robin Nolan and Joscho Stephan all use them).

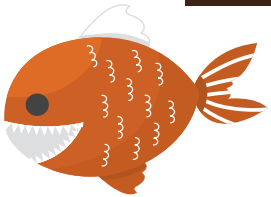
Comic

By Tetiana Ovramenko

PRETTY ~~ODD~~ NORMAL THINGS THAT YOU CAN FIND IN FRANCKEN ROOM

- GRAAFMACHINE PICTURES
- PIRANHA PLUSHIE
- 20 KG RHINO WITHOUT TWO LEGS COVERED IN STICKERS
- COLLECTION OF DUCKS
- UMBRELLA HOLDER FILLED WITH BEER CAPS
- TRUUS AND PLUIS ♡
- MUG WALL
- 3D PRINTED OCTOPUS





Koke with Sjoke: Hunting dish

By Sjoukje de Jong

For a recipe with the theme normal I was thinking of giving you a recipe for typical normal dutch food: an AVG'tje (potatoes, meat and veggies). However, I was worried that such a recipe would be a bit too boring (if you grew up like me you have already eaten this every day for your whole childhood), so I'll give you a slightly more interesting version of an AVG'tje. A jachtschotel! (Hunting dish). My veggie of choice is cauliflower but of course you are free to swap this to your preferred but less tasty vegetable. You can also veganize this meal by replacing the minced meat with vegan minced meat, replacing the butter by plant basted margerine, and swapping the milk for your vegan milk of choice. I hope you enjoy this meal if you recreate it, I kinda did :)

Ingredients for 4 persons:

- 1kg potatoes
- 2 onions
- 50 g butter
- 500g (spiced) minced meat
- 70g (1 small can) tomato paste
- 1 cauliflower
- 150 ml milk

Utensils:

- Masher
- Oven dish

Preparation:

1. Peel the potatoes and cook them in water for 25 min.

2. Cut the onion, heat 20g of butter in a pan and cook the onions for about 10 min. until they start to change colour.

3. Add the minced meat and the tomato paste and cook this mixture for a bit.

4. Preheat the oven till 180 °C

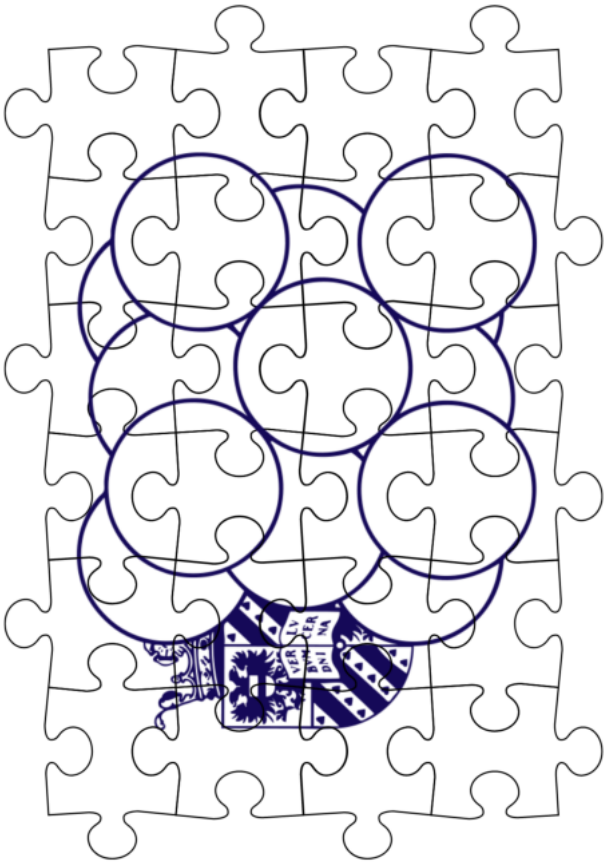
5. Separate the cauliflower into small pieces, now you have two options of what to do with them: (a) cook them for a few minutes in boiling water (b) put them in a strainer and pour the boiling water from the potatoes over them when the potatoes are done cooking. If you do not like hard veggies I advise you to choose option (a).

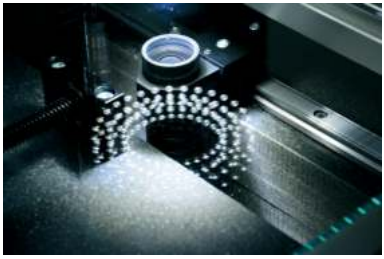
6. Heat the milk and add it to the potatoes, together with the rest of the butter. Mash the potatoes with the potatomasher until mashed potatoes have formed. Add your own spices to taste.

6. Put the minced meat mixture on the bottom of the oven dish, followed by the cauliflower, and finally you add the mashed potatoes on top. Flatten the mashed potatoes with a spatula and create a diamond pattern with a fork. Cook the dish in the oven for 30 min.

Normal Puzzle

By Francken Vrij committee





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