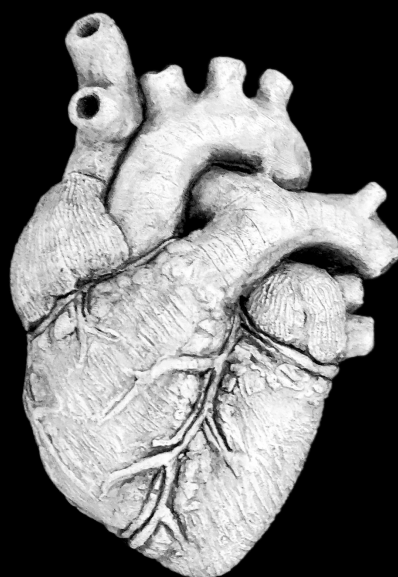




The Optimist

**A journal to help you
survive the valley of shit**

JUNE 2019 EDITION

EDITORIAL

Not long ago, we found ourselves at the pub the Optimist asking ourselves: why the hell did we ever decide to pursue a career in science? A few drinks in, we realized that we would not be doing relevant science if it was easy. Moreover, in any other job we would probably be bored. To be able to survive our PhD – in a healthy mental condition – we realized we had to change our mindset. We need to learn how to deal with failure, how to be patient and how to create a healthy work-life balance. In order to bring optimism back for ourselves and our fellow PhD students, we came up with the idea for this interactive journal by PhD students for PhD students. Our goal is to become healthy scientists that are hardworking but relaxed, ambitious but sharing, and confident but humble. We are convinced that the best way to achieve this is by sharing our struggles and by seeing the humor in it. But that is not enough. We believe the efficiency of science can be improved. The scientific method has proven very successful over the last decades. Nothing we write down here will change this. However, we would like to step away from the idea that the current way of doing science is the only way and encourage constructive discussions. Therefore, in every edition we will focus on a topic that merits some thought.

The optimist team,
Matthias, Donya and Joni

Who is behind the cover?

Jeroen Aerts, a.k.a. The Pipetteer, makes anatomy- and science-inspired sculptures. Check out our interview with him on p. 10. Any questions? Interested in buying his art? Drop him an email or follow him on social media:

Instagram and Twitter	@thepipetteer
Website	https://thepipetteer.com/
Email	contact@thepipetteer.com

THE CHALLENGE

A father and his son are involved in a horrific car crash and the man died at the scene. But when the child arrived at the hospital and was rushed into the operating theater, the surgeon pulled away and said:

‘ I can’t operate on this boy, he is my son

How can this be?



Leadership

Is there a bias?

Did you figure out the challenge on the previous page? The surgeon is the boy's mother. Perhaps this threw you off a little, perhaps it was not strange at all to you, or perhaps you paused and thought the son had two fathers (which could also be correct). The point is that if you paused for too long, it's because you had already built a picture in your mind of a white male surgeon in the operating room.

Are we biased when it comes to our leaders?

You may have heard about the recent efforts to improve "women in science/ leadership" globally and within our own department. So much research, funding and energy is placed on this hot topic. We counted five articles in Nature's

"comments and opinions" section alone for the month of April. This theme is getting picked up more and more on social media, at conferences and by big journals. Our center now has a diversity committee dedicated to promoting inclusion within the CBD. Interestingly, the first gender report of KU Leuven conducted in 1998 noted only 3% female professors.¹ Whilst now the overall ratio is 50:50, still only one in three professors is female² and one in five for VIB group leaders.³ Thanks to recent efforts to improve diversity and raise awareness of biases, we would like to acknowledge that we have come a long way but have a long way to go. We hope this article encourages you to think about changes you could make as junior researchers to ensure more diversity in the future without creating a sense of tokenism.

In an academic setting where it is acceptable to rank based on the **impact** of our science, what would make science more impactful? Gender-balanced representation? Equal chances and awareness of unconscious bias? The truth of the matter is that science has no gender and there should be nothing stopping anyone from pursuing a scientific career irrespective of gender, race, culture, religion... etc. Whilst this may be a theory that most, if not all of us want and agree on, in reality there are obstacles, some outside our hands and some within.

Where does it go wrong? It's not just that there are less women in leadership in general, it's that there is such a sharp decline of women who apply for leadership positions after their post doc

years. So why is it that while 42% of VIB post docs are female, less than 20% of the PI's account for this gender. Are there less women because of hiring issues or biases in application?

Postdoctoral job prospects are unknown and the training period is getting longer and longer to meet the demands of high publications, employers naturally calculate a women's output depending on the number of children per x amount of time. We may solve these issues if we look at the recent developments regarding unequal pay, it is not about women, it's about the role of women in families. Gender equality is not about picking a side, it's about removing the cultural norms. In the year 2000, Iceland adopted a nine-month parental leave policy, where both parents were eligible



Rosalind Franklin



Watson & Crick

for three months of non-transferable ‘use-it-or-lose-it’ parental leave each, with another three months of flexible leave that either one of the parents could use. This put pressure on fathers to take paternity leave and by 2012, 92.7% of Icelandic fathers took a period of leave.⁴ This then cycled back in to the system where the employer no longer saw the cost of downtime only associate to woman of childbearing age, but resulted in bias correction. Although this required federal law alterations, this method made Iceland one of the very few countries to close the gender gap. This shows that solutions are not impossible. The scale of female part-time work has been attributed to the

“care” service assumed of women. As expected, what was found in Belgian French-speaking universities, women in academic/scientific careers more often work part time than men (13% vs. 6%).⁵ Some women have children, some don’t, but there should be no penalty for whichever they choose.

Being the next generation of scientists, how can we do our part to help make leadership accessible to everyone? Next time we hear stories, **1) try flipping the accepted bias around.** Studies have shown that whilst we all have unconscious biases, we can control them.⁶ Our mind has the ability to adapt but only if we consciously make it aware it is on auto

pilot. Most of the time this judgement is based on previous memory. Just as we do in our science, we must be aware of all biases that we possess. For example, when we conduct experiments we try and prevent unconscious bias for a favorable outcome. **2) Speak up,** maybe we would be surprised that if we were vocal about what we thought was needed, that solutions would be put in place. Often times when issues become problems or reach the hands of HR, it is already too late. We need to tackle these issues early on; this

is our problem and responsibility too. We may see our institute as the entity that has the power to make the change, but biases exist for all individuals within this entity i.e. US! Perhaps, hiring based on gender is not what we need (in fact this is illegal in Belgium), but better incentives for accommodating to everyone’s needs would be beneficial. One possible request could be the demand to have gender balanced selection committees for there to be equal understanding at the table during interviews. It is important that men should not be left out of the equation, for they too are part of the solution. And lastly, always **3) APPLY,** to the positions you want because, there should not be a “type” of candidate, there should only be good SCIENCE.

There is no clear solution to equalizing the playing field as one domino affects the other. What we can agree on is that no woman or man wants to be selected based on gender, but instead we should aim to empower everyone (who wants) to pursue leadership positions and create an environment suitable to all. No matter our background or gender, at seniority level we are a role model for someone

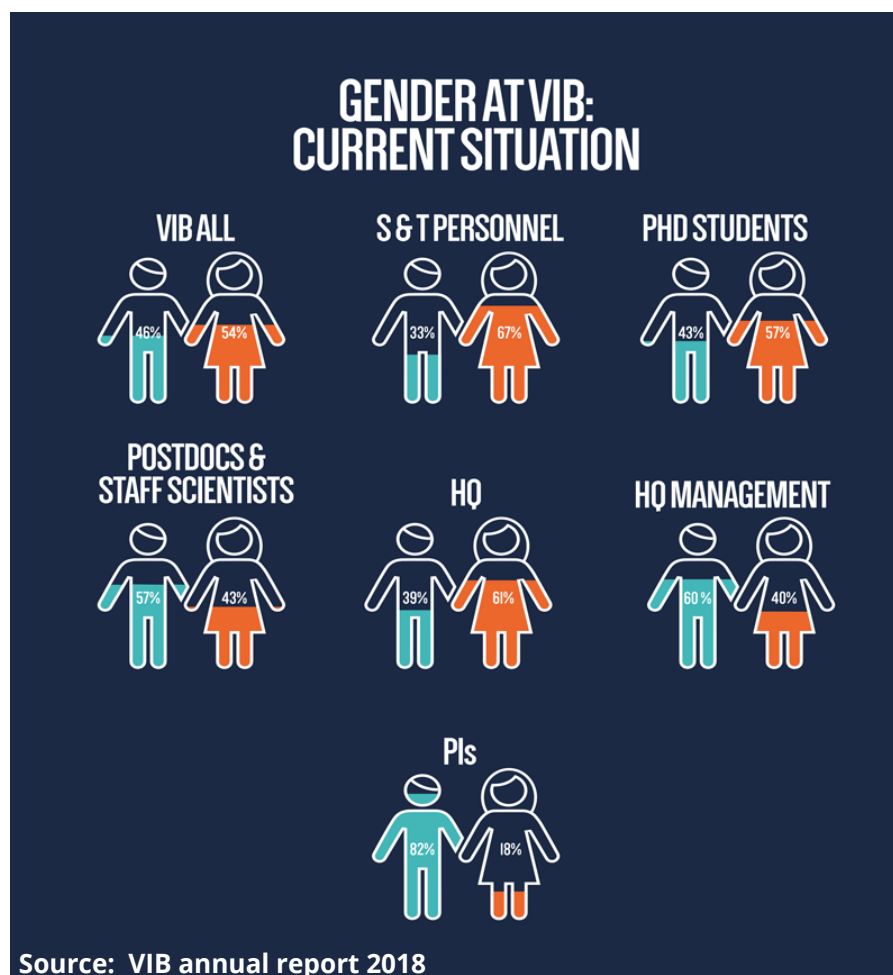
” This is our problem and responsibility too

less senior than us. Regardless of what we choose at the end of this academic journey, we should remember that we, too, are current mentors and leaders. If we take part in outreach events or are discussing research with others, we are reflecting not just our science, but our place in that community. The same way we have to self-correct or prevent occasional biases in our science, we should also do the same to correct our bias against gender, ethnicity, sexual orientation or appearance. In summary, we hope top candidates reach the top irrespective of everything, except their skills and science.

We urge you to try and remember three things:

- 1. Reverse the bias**
- 2. Speak up about problems and provide solutions**
- 3. APPLY!**

Written by Donya Pakravan
Edited by Joni Vanneste, Matthias Koch



Some resources

- The Flemish Young Academy of sciences <https://wetenschapismvx.be/home>
- BeWiSe - Belgian women in science (mentorship program; lectures)
- The STEMMinist book club on twitter & all the suggested books on this account
- The CBD Inclusion & Diversity committee

DOING A PHD IN THE STONE AGE

Interview with a PI



Joris de Wit is head of the Laboratory of Synapse Biology and vice director of the VIB-KU Leuven Center for Brain & Disease Research. He obtained his PhD at the Netherlands Institute for Neuroscience in Amsterdam in 2004 and subsequently conducted his postdoc at the Center for Neurogenomics and Cognitive Research (CNCR) at the Vrije Universiteit Amsterdam. In 2006 he moved to the University of California, San Diego for another postdoc and an assistant scientist position in 2010. Joris de Wit's group aims to unravel molecular mechanisms controlling neuronal connectivity in developing circuits. As loss of synaptic connectivity underlies many brain disorders such as Alzheimer's disease, the de Wit group aims to understand how perturbations can affect the physiological formation and maintenance of neuronal connections.

Thinking back to your PhD, how would you describe this experience? Did it motivate you to strive for a career in science, and if there were demotivating factors how did you deal with them?

My PhD was a challenging time. I was the only one in the lab working on a European consortium project that was outside the lab's main topic, with an advisor who was hands-off and gave me a lot of freedom in my project. Things did not go well and halfway through my PhD I came very close to quitting. In the end I didn't, because I liked science and because I had fantastic colleagues with whom I could discuss.

For years afterwards, I looked back at my PhD time with a feeling of frustration of not having been able to fully accomplish what I set out to do. That frustration was a strong motivation to make my postdoc count. Furthermore, as a postdoc, I really benefitted from my PhD experience to design and perform my own experiments and plan the next steps in the project. So ultimately, my PhD turned out to be a very useful and motivating experience.

Are there things you are specifically proud of, or is there anything you would approach differently in hindsight?

One of the things I'm most proud of having accomplished during my

PhD is actually not related to science at all. About a year into my PhD, in early summer of 1999, I left the lab for about six weeks to go mountain climbing with two friends in Alaska; one of the advantages of having a hands-off advisor.

"About a year into my PhD, I left the lab for about six weeks to go mountain climbing in Alaska"

Organizing a successful expedition to 'the coldest mountain on earth', as Americans like to call it, and standing on the summit of Denali in the midnight sun was a powerful experience. About two years into my PhD, I finally realized that the only one who would save my project was me. From that moment on I took control of my project, and was able to turn it around. That was another important moment, and in hindsight I wish I'd done that sooner.

What advice would you give to PhDs like us?

My first advice would be to be open to advice, especially that of your advisor. But also make sure you follow your curiosity, this is very important. Another important piece of advice: the sooner the better. Finally and most importantly, find yourself!



Is there life after a PhD?



Jeroen Aerts did his PhD in the lab of Neuroplasticity and Neuroproteomics of Prof. Lut Arckens (KU Leuven). During these four years, he studied the role of matrix metalloproteinases in visual cortex plasticity of the mouse in the context of vision loss. This involved a lot of in vivo surgeries, proteomics, immunohistochemistry, imaging and in situ hybridization.

What did you enjoy the most during your PhD?

Meeting my future wife in the lab obviously! Being able to work with many interdisciplinary scientists, going to international conferences and our lab being located close to the Oude Markt for sunny lunches and evening drinks did not hurt either. Near the end of my PhD, I had the amazing opportunity to go to Montréal, Canada, to work with an interdisciplinary team of engineers, physicists, ophthalmologists and veterinarians to develop an optical imaging system for measuring brain activity in rabbits.

What is the most important thing you learned?

That you achieve the most when working as a team towards a common goal and that interdisciplinarity is a powerful instigator. I look for these values in every new opportunity I come across.

In this section, we interview former PhD students about the value of their PhD and which career moves they made later on

What did you do after your PhD?

After my PhD, I had the opportunity to do a Post-doc at Janssen Pharmaceutica NV (Beerse, Belgium), where I worked in the preclinical Neuroscience department. I was involved in international industry-academic collaborations on target identification, target validation and assay development in the context of new molecular entities (NMEs) to treat Alzheimer's disease. In parallel, I was the co-chair of the Janssen Post-doc/PhD student community where I bridged with senior management on community interests and was able to shape activities around Innovation in Healthcare. Coming from academia, I unfortunately feel that there are still a lot of misconceptions about working in industry and many consider it a black box.

In November last year, I was very lucky to join the passionate Tech Watch team at VIB, where I scout for novel technologies to boost the research at VIB. Tech Watch is a unique concept and a powerful tool for PhD students and Postdoc researchers to access cutting-edge technologies. I am mainly involved in the Single Cell Accelerator project for which I am evaluating a range of single-cell RNAseq technologies in collaboration with Janssen Pharmaceutica NV. If I am not at HQ, you can find me in the lab of Stein Aerts testing new technologies together with many talented people! Last but not least, I co-founded Infopunt Proefdieronderzoek, an organization dedicated to communicating about the use of animals in biomedical research.

Which skills that you obtained during your PhD proved to be useful later on?

Being a team player and effective communicator are the most valuable skills when working both in industry and in my current role at VIB Tech Watch.

The most important thing I learned is you achieve most when working as a team



PhD confessions

Because we've all been there...

ERLENMEYERS

As I saw that we had broken a lot of Erlenmeyers, I ordered new ones for the lab. As such, I went to the website of VWR to order six more. My colleagues and boss were very happy that I ordered these as this meant that we would no longer have to schedule our midi preps. However, two weeks later an enormous order on a pallet arrived and I remember jokingly saying: "Hope this is not for us..." Turns out that I made a mistake in the order and did not read the website information very well. Instead of six new erlenmeyers we received 60! Guess we will never have trouble planning another midi prep again...

Steffie Junius

GAME OF THRONES

We stole once a projector from our lab to watch an episode of Game of Thrones. We forgot to return it the next day, so we left it for a couple more days. Before we knew it, it was Monday. What would watching one more episode do? We ended up hosting the entire season of Game of Thrones at our apartment.

(You are all welcome, btw!
You know who you are...)

Anonymous

THE NITROGEN ROCKET

On a hot day, my colleague and my -naive junior PhD- self started a massive tissue collection. Since coffee thermoses were seen as a good alternative for cryogenic vessels, we happily tipped all our precious samples inside the thermos filled with liquid nitrogen.

During a well-deserved brake from dissecting, I continued with some experiments of my own, when I walked in the room and noticed the level of liquid nitrogen was getting rather low. At this point, I considered closing the lid was a good idea, at least until I had some time to refill the thermos. A couple of minutes later, my colleague was running through the lab looking for her samples, as they disappeared from the thermos. Indeed, the thermos was right where I left it, not moved an inch. Only the lid was gone... as was its content. Strange, because no one touched it... Consulting the Sherlock Holmes of the lab, traces lead us to the discovery

of multiple pieces of plastic and some broken eppendorfs, stripped of their content. The mystery distended! As pressure for high impact publication was high and competition was lurking around the corner, conspiracy theories started to form. Who was thwarting our research?!

It wasn't before an hour or so when we noticed a round shaped hole in the ceiling. Coincidentally, exactly the same size as the lid of the thermos. As the Sherlock-brains were rattling, I started to realize this might have been my fault...

Indeed, closing the lid of a thermos containing liquid nitrogen exposed to the Belgian summer heat (or bad temperature control in the building), is far from a good idea. As the nitrogen evaporated, pressure inside increased to the point the lid blew straight off, creating a now legendary round hole in the ceiling, bending the metal ventilation tubes above and sending the precious samples flying.

Surprisingly, the force was so channelized that the thermos itself did not move at all, but all the rest was history...

Lawrence Van Helleputte



NAKED

In the second year of my PhD, I was arriving back to work extremely late one weekday night. As I cycled towards Gasthuisberg, I was caught in torrential rain. I was soaked from head-to-toe! My jeans were saturated with water and my shoes were making squeaky noises as I marched demoralized towards my lab.

I could not do much work in this condition. As I was the only one in my lab and it was past 11 pm at night, I decided to partially strip down so I could place my clothes on the radiator underneath my desk. I sat in my desk chair half-naked and vulnerable in just my t-shirt and underwear.

As the hour went on, I suddenly heard a door open in the lab and then footsteps walking towards my PhD office where I am situated. Fuck! I scrambled to get my pants back on with my belt and jeans making loud rustling noises – the kind of noises you know someone is struggling to put on their pants. As the footsteps came closer, I just managed to pull my pants up in time and sit in my chair and face my computer. It was the security guard.

As we looked at each other, we both just said “hello”. He then asked if I would lock up when I am ‘finished’. I said “yes, of course”. I had kept my body facing my computer the whole time, so I only briefly looked over my shoulder to him.

I am sure he noticed I was sitting at my desk with my pants open and my belt dangling over my lap, as well as the fact that I was in my bare feet. It is hard to look a man in the eye with your pants open, while you are at your laptop and still hope he does not think you were doing something shady.

On the evenings I do still stay late, I noticed now he just locks the door from the outside and does not come into the lab. Maybe it is better this way.

Anonymous

You have a confession to make?

Mail us at Optimist.Phd@outlook.com

PHD SURVIVAL TIPS

HOW TO HAVE A HAPPIER AND LESS STRESSFUL PHD?

Stress in small doses can be beneficial. It can be a source of motivation to start working and achieve your goals. However, too much stress can negatively impact your performance and even lead to anxiety and health problems. Here are three straightforward, but effective tips to reduce stress in your life.

Stop comparing

We have the tendency to compare our weaknesses with the strengths of other people. If you add to that, the fact that people show the best version of themselves to the outside world, it is just not fair to compare yourself to other people. You can not compare you inside to someone else's outside. Moreover, you can not compare someone else's 18th chapter with your first chapter. They may have been on their journey for much longer. You can only compare yourself with your old self. If you keep improving, you should be proud.

Plan and let go

Block some time on your schedule (weekly or monthly if you prefer) where you focus on planning your future steps (but be realistic). All the other days you focus on performing this plan. Be focused on the now and take it step by step. Trust that if you follow every step, you will accomplish your goal. Do not create stress by letting your mind worry about things that have yet to happen. They will probably never happen and if they do, you will have the right energy to fix them when they arise.

Stop perfectionism

Perfectionism does not exist. Nothing is perfect, even nature itself is not. Almost everyone will call himself or herself a perfectionist. However, perfectionism can be a mask for your insecurities and fears. You keep working on that presentation or paper because you are a perfectionist? Think about it, you are actually afraid to be judged or rejected. If you keep being a perfectionist, you will feel let down for the rest of your life. Have trust that what you did will be enough. Things do not have to be perfect.

Still, stress is an inevitable part of life and definitely part of being a Phd student. However, we can choose how we deal with it.

Think positive

Stop complaining. Complaining is seen as a norm in our society but it is actually quite useless. If you think about the last time you were complaining; did it result in something positive or was it actually taking a lot of energy? Moreover, complaining creates a negative atmosphere. This toxic environment will influence people around you, and eventually circles back to you. If something stressful or negative happens, the best thing you can do is to either take action to change it or, when it can't be changed, to make peace with the situation. For example, next time someone asks you how you are, instead of complaining, you can talk about all the things that are working out well in your life. You will immediately feel better, and you will have more energy afterwards to deal with the problems in your life.

Prioritize self-care and invest in yourself

You like hanging out with friends? Reading a book? Watching a movie? Doing sports? Playing games? Walking in the nature? Yoga? Cooking? Know what makes you relax and make time for it. Even in your busiest periods, it will benefit you on the short and long term. Remember that taking time off is not the same as wasting time.



Appreciate how far you have come and enjoy the journey

Being stressed because you are worried about the next step in your career? Now and then, take a moment to look back on your journey and be proud how far you have come. Remember when you were a student and were freaked out about an exam? Guess what, you made it - and so will you now. So be grateful for what you have accomplished and try to enjoy it while it lasts.

If you look back on your most stressful periods in life, you will realize that they were often the moments you grew the most. So next time you are stressed, consciously inhale, smile and just keep moving forward.

Sources

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HEY, IT'S OKAY TO...

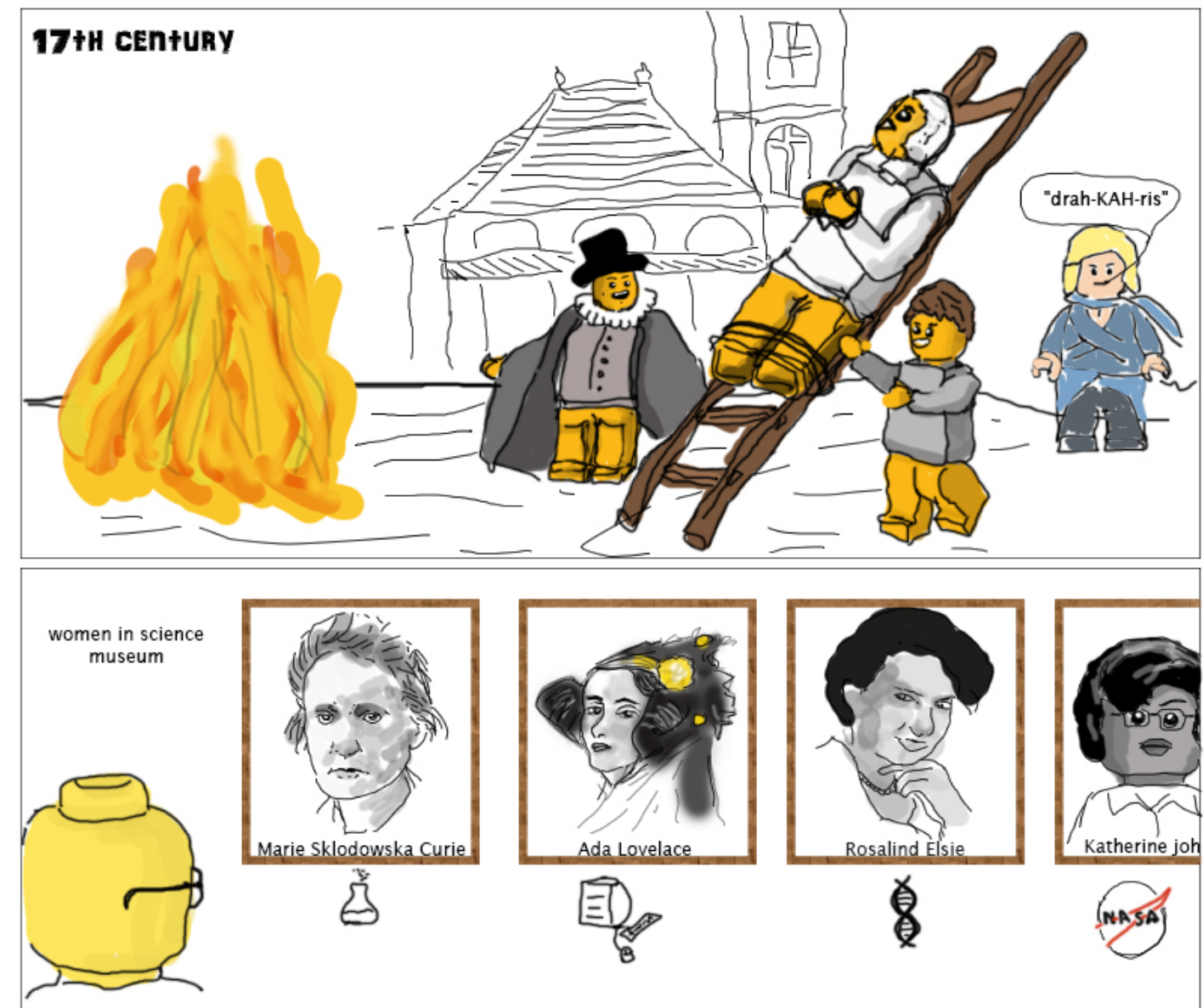
Science is serious business,
but we may share similar frustrations



- ... still type with two fingers
- ... get the answer back "I only work with real scientists" when you asked for a collaboration
- ... go out until 5 and miss all the morning talks on a conference
- ... add DMSO to your cells by accident and start screaming
- ... burn your blot and only notice it after the whole lab smells
- ... find lab equipment in your pockets when you get home
- ... not remember someone's name at the next VIB seminar
- ... steal cutlery from the 8th floor and never return it (please return it!)

- ... go to happy hour, get really drunk and have to stay in the lab to finish work till midnight
- ... spend longer stalking candidate speakers profiles than you do reading their papers
- ... eat more than one sandwich when you have lunch with a guest speaker
- ... start later on Mondays because you were up watching the latest Game of Thrones episode
- ... still prefer reading wikipedia's answer
- ... run in the corridor at 3:55 to get that last sample in for sequencing
- ... cycle to the lab on the weekend, forget your key, cycle back swearing
- ... drink yesterdays coffee by accident and like it
- ... listen to strange podcasts when you're using the confocal
- ... keep downloading trials of Adobe with different email addresses
- ... use google during a talk
- ... have like 5 followers on Twitter

... email your input to Optimist.PhD@outlook.com



Dries T'Syen

Thank you

Cover & PhD interview

Jeroen Aerts

PhD confessions

Steffie Junius, Anonymous 1 and 2, Lawrence Van Helleputte

PI interview

Joris de Wit

Hey it's okay

You, for inspiring us

Supported by the VIB-KU Leuven Center for Brain & Disease Research

Editing and lay-out by Liesbeth Aerts

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@OptimistPhD

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