



The Optimist

A journal to help you survive the valley of shit

March 2020 EDITION

Chasing away young scientists

- Addressing the mental health crisis among doctoral researchers -

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

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You are not alone

Completing a PhD can be challenging, both intellectually and emotionally. The enthusiastic moments of learning and discovery keep us going within these times. However, we can also be exposed to extremely high levels of stress and exhaustion. Shockingly, a study conducted by Levecque and colleagues among doctoral researchers in Belgium found that one in two PhD students experiences psychological distress and that one in three is at risk of a common psychiatric disorder (1). Another study performed at the Max Planck institute showed that there are not only mental but also physical consequences, as they observed that 60% of PhD students suffered from stress-related symptoms, 40% suffered from back pain and 33% from sleeplessness (2). These numbers indicate that the problems are more widespread than simply an issue of some vulnerable individuals. **The current system is putting young, healthy and talented people under a high burden of stress**, which eventually might lead to mental health problems, such as anxiety, burnouts and depression.

Is this for the greater good?

The big question is; is this for the greater good? Is the current environment, in which a PhD is conducted, selecting against people not suitable to be an academic scientist?

Pressure is not solely high for PhD students; it is a general concept for most academic. Universities were traditionally seen as low stress environments (3), where there was space and time for basic research, exploration and curiosity. However, recent institutional changes into more market-led policies (due to e.g. budgets costs, move towards mass higher education without appropriate increase in resources, ...) have altered this relationship between universities and their academics, with as consequence that mental health problems are alarmingly widespread (1,4-15). Therefore, we could indeed argue that we need the ones most resistant to stress to survive this new, more entrepreneurial and competitive version of academia. **You could even state that we are sending our soldiers to war** of which only the strong will survive.

A full-page background image showing a person from behind, rappelling down a dark, craggy rock face. The person is wearing a black t-shirt, blue jeans, and a climbing harness with gear. They are holding onto a white rope that extends from the top of the frame. The lighting is dramatic, with highlights on the person's clothing and the rope against the dark rock.

If a **genuine concern for individual well-being** is not enough to convince you otherwise, there is a second reason why this conclusion is not true. For the above-mentioned conclusion to hold, we need to assume that the current system eventually will lead to the best scientific output. The many concerned voices and calls for action about the credibility of published work (16–22) suggests otherwise.

The truth is that the current system is seriously threatening the viability and consequently the credibility of academic research. Given the compelling evidence for the effects of mental health on work performance (23), it can be anticipated that **mental health problems in a significant group of scientists will dramatically affect research output**. What is even more worrying is that studies suggest that feelings of anxiety and stress can lead to self-interested unethical behavior, such as fudging results (24). Because the current system feeds this toxicity, it is essential to keep the most valuable trained academic researchers that think differently to change the system. This would not only benefit academics, but is also crucial to maintain public trust in science. Instead, many of them are lost in a useless war and leave academia or the research industry all together.

How can we help early career academics to flourish?

The study performed by Levecque et al. also compared PhD students to three control groups: highly educated in the general population, highly educated employees and higher education students and found that the prevalence of mental health problems is respectively 1.85, 2.43 and 2.84 times higher in PhD students (1).

This data suggests that current environmental factors, encountered by PhD students, increase the risk for developing mental health issues (9). So which factors were found and how can we help PhD students to create a buffer against stress, emotional exhaustion and burnout?

A first main factor of stress that PhD students encounter is a **high workload** and consequently a disturbed work-life balance (1,2,13). There are times where we have too much work for too little time, we experience a lack of sleep and have a poor diet. However, as we are all expected to deal individually with these high demands of academic life, those who are stressed or facing mental health issues often do not dare to speak up for the fear of being deemed unsuitable for academia. In addition, we are almost solely valued based on our publications and many of our other daily tasks and skills (team work, lab management, technical skills, knowledge of the literature, student guidance, administrative tasks, graphic and presentation skills, ... etc) remain poorly recognised.

A realistic PhD plan at the start, including alternative routes, could help to reduce this well-known always-running-behind-trying-to-catch-up-at-the-weekend-feeling. Institutions should also create an environment in which it is encouraged to take available holidays and strongly discouraged to work on the weekend. It is essential that students are aware of their rights to take holidays and feel supported when (not a matter of if) they take them.

Institutes should furthermore create events in which PhD students can meet, independent of a work-related context, to create a feeling of community and belonging. Self-care should be advertised as much as seminars! Even with simple measurements, such as the use of attractive pamphlets, students could be informed about the emotional, cognitive and behavioural signs of work-related stress. In addition, the institute should provide easy and well-known access to mental help.

A second challenge has to do with **poor supervision** (1). We are all familiar to stories about not properly defined projects or a supervisor who is either not involved or too controlling. As a vast body of research shows a significant association between leadership style and levels of stress and well-being (13,14,25,26), there is a need to help PhD supervisors to train their leadership skills, if we are to achieve the high efficiency science that is so badly needed. In addition, management skills should be taken into consideration when hiring and feedback from lab members should be part of how supervisors are evaluated, to assure that also soft outputs (e.g. stress, work environment) from the lab and not only hard outputs (e.g. publications) are taken into account. In the most serious cases, universities must create navigable paths to switch supervisor and take away the supervisor's right to train PhD students.

A third cause of stress is a **lack of career perspectives** (1). Many doctoral candidates feel ill-prepared and uncertain when it comes to job prospects (1). Although the employment rate of people holding a doctoral degree is exceptionally high (more than 98% in most EU-countries) (27), Nature's survey of more than 6000 graduate students found that the majority did not have a positive perception of finding a job after finishing their PhD (6). Since 70% of us will make the switch to industry (ECCOM-Belspo: CDH survey 2010), offering PhD students clear and full information about alternative career paths would provide a better sense of job security.

Be vocal

In conclusion, mental health in academia, especially PhD students, remains a crucial topic that requires our attention as it also significantly affects research output. Because mental health issues are not caused by a single factor, but rather a combination of risk factors, **it is key to have an open communication** to gain better insights and to find solutions. Importantly, it is essential that we, PhD students, understand the need of taking care of our mental health and are not afraid (and are supported) to be more vocal about it and claim our rights!

Written by Joni Vanneste
Donya Pakravan and Matthias Koch

DOING A PHD IN THE STONE AGE



I am Christine Desmedt, Assistant Professor and Head of the Laboratory for Translational Breast Cancer Research. So far, we are 8 persons in my team and have three main research axes. Firstly, we want to unravel breast cancer progression. In this context, we are currently setting up a large multi-disciplinary UZ/ KU Leuven program for post-mortem tissue donation to enhance research program. Secondly, we aim to better characterize what the relation is between adiposity and breast cancer in terms of biology and treatment efficacy. Finally, we focus on rare and therefore under-investigated breast cancer entities such as lobular and inflammatory breast cancer.

How would you describe your experience during your PhD?

My PhD was about the molecular characterization of breast cancer using mainly gene expression data generated with the so-called microarrays. This PhD meant a lot for me as a scientist to get to learn more about cancer, but also as a person since many women in my family had breast or ovarian cancer. For me it became rapidly clear that breast cancer research would not stop after my PhD since there was still so much to be done and I wanted to be part of it. I am extremely grateful that my supervisors were introducing me during my PhD to many large collaborative groups across the world.

I remember for instance that I was attending the official opening meeting of the International Cancer Genomics Consortium. This consortium wanted to sequence at least 500 tumours from each cancer type and share the data with all the scientists worldwide. At that time, it was still science fiction for me, but now it is amazing to see all the knowledge that has been derived from this great initiative. This is such a good example of the power of open science. My supervisors also have taught me to think big, rather than just for my own little project, and also to **see solutions instead of problems**. This really helped me through my career.

Sometimes, a demotivating factor during my PhD or during my PostDoc was a lack of personal recognition or the understatement of parts of my work. **Being a team leader myself now, I am trying to better recognize everyone's work and contribution** (note to my team: let me know if it's not the case ;)).

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

One thing I feel I missed during my PhD or PostDoc was a longer stay abroad. This was personally not possible for personal reasons. However, at some point it is good to broaden your perspective and to see how other labs are organized and how projects are managed there.

Which advice or tips would you give us PhDs?

These are the personal advices I would like to give.

1. Be pro-active. A PhD is not like a master thesis. You already have a diploma and explicitly chose to do a PhD. Generally, the research line of your PhD has been defined with your mentor at the beginning, but there is always room for improvement!

Keep the balance

2. Learn, learn and learn. The 4 years of your PhD are a unique opportunity in your career to learn about so many things. Don't forget to catch the different opportunities.

3. Be passionate about what you do. If you're not then you might have chosen the wrong PhD for you. There is a well-known quote from Marc Antony that says "If you do what you love, you'll never work a day in your life". Of course, it is normal to have parts of your PhD that you don't like that much or that are not moving as fast or as good as you would like them to.

4. Don't forget that most research projects rely on teamwork, even if the biggest part will be done by you. Be respectful of the work from others. Together you'll go further than alone. Respect and acknowledge everyone's contribution.

5. Keep the balance. This balance can be different for everyone. I always found it important to keep doing sport to release the stress and get fresh energy. And many interesting ideas and new insights actually logically appeared to me while running. If you have young children, they will also 'oblige' you to keep the balance.

Mental Health tips

Both work and social environments can make large demands on your mental health. Here we present some tips to balance these stressors to keep you mentally healthy.

Exercise regularly and stay active.

Be active throughout the day. Stand up, stretch and go for a short walk regularly. The released endorphins and serotonin will improve your mood

Sleep.

Keep a good sleep routine and never skip your sleep.

Share your thoughts.

Don't be afraid to tell people how you feel.

Talk to close friends, family or take a break with a good colleague.

Self-care day off.

Just finished a stressful deadline or everything is just too much? Don't be afraid to take a day off to recharge.



Breath.

Relax. Practice some deep breathing.

Take a break during the day

Regularly do something you enjoy.

Don't give up on the things you like.
Hang out with friends, enjoy your hobby, watch a movie...

Phone apps.

There are phone apps available that can help you identify and/or cope with anxiety and depression.
There are often free.

Don't be afraid to seek help.

Prevention advisor psychosocial issues Idewe:

psychosociale.leuven@idewe.be - 016 39 04 38

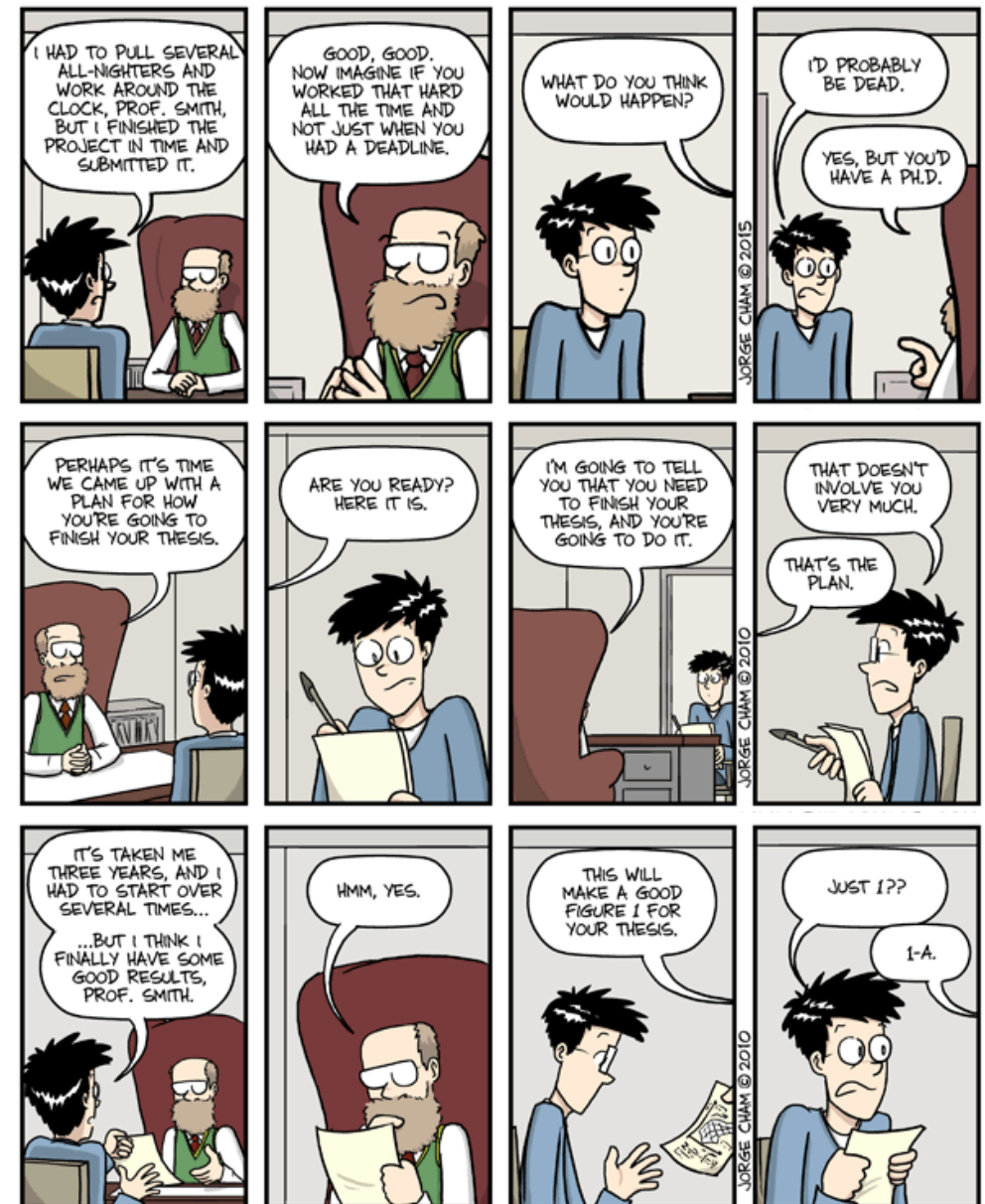
Doctoral Ombuds (the first contact point for PhD researchers and supervisors regarding all disputes and problems related to the doctoral process)

If you belong to the Department of Neurosciences:

Prof. Marie-Christine Herregods - marie-christine.herregods@uzleuven.be

If you belong to the Department of Human Genetics, the Department of Cellular and Molecular Medicine:

Prof. Georg Halder- georg.halder@kuleuven.vib.be



News you may have missed

We all know how depressing reading the news can get, especially if you are already having a tough time at work. But do not despair! We've navigated through all that negativity to come up with a selection of articles that are guaranteed to lift your spirits!

Senegal is constructing West Africa's largest wind

African countries are slowly awakening to their incredible potential for renewable energy as Senegal takes the initiative with a huge 46-turbine wind farm 100 km north of Dakar. The Taliba N'Diaye wind farm is due to be operative by July this year and will provide 158MW of clean energy to an estimated total of 2 million people. The 340-million investment will save around 300,000 tons of carbon emissions per year.



Finland to offer new fathers as much paid leave as

Finland's first woman-led government has recently levelled the playing field when it comes to parenthood. This move comes as an attempt to remedy the slow decline in birth rates and proved to be quite effective in predecessors Iceland and Sweden, which implemented similar policies in 2000 and 2016. Although we are far from a truly egalitarian society, this is certainly a move in the right direction and might push other European countries to follow suit.



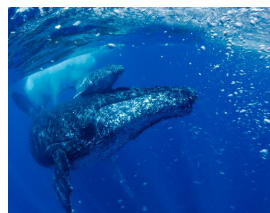
An integrated perfusion machine preserves injured human livers for 1 week

A collaboration of institutes in Zurich has presented a first-of-its-kind system for preservation and regeneration of livers outside of the human body. The machine (called Liver4Life, on the left) can perfuse oxygen-rich blood in a pulsatile manner while monitoring blood glucose levels, removing waste and simulating diaphragm oscillations. Prior to this, human livers could only be preserved for 12 hours outside the body, so the platform has the potential to make a huge impact in transplantation medicine.



After being pushed close to extinction, this humpback whale population is making a comeback

The population of Western South Atlantic humpback whales has slowly recovered to 93% of its original count after decades of exploitation had pushed it to the brink of extinction. The modelled data shows a recovery from ~450 animals in the mid-1950s to a current estimate of just above 25'000.



Fun things to do besides your PhD

24 April

PhD Galabal 2020

The PhD Society is organizing a first gala ball for PhDs.

Location: De Hoorn (Leuven)

www.facebook.com/phdsociety



6 - 9 May

And& 2020 Leuven

and& is a biennial festival that brings together changemakers of today & inspires curious minds of all backgrounds. It provides a platform for interdisciplinary innovation that aims to transform our society & acts upon the challenges we face today.

www.andleuven.com

2 May

Vegan Festival Leuven

Location: HAL 5 (Leuven)

Every month

Afterwork Party - Club Royale Afterwork

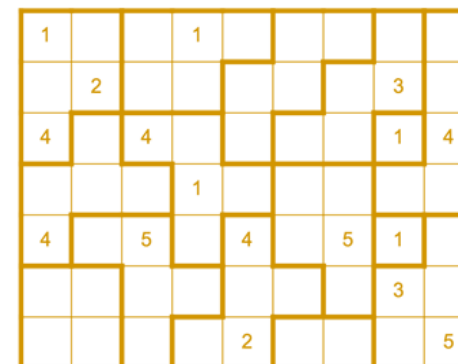
Get your dancing shoes on every second Thursday of the month for an afterwork party in the machine room of an old brewery.

Location: De Hoorn (Leuven)

www.clubroyaleafterwork.be

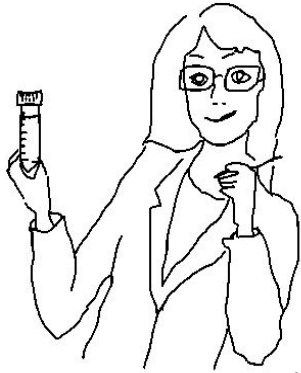
Tectonic or Suguru Puzzle

The rules are simple: A grid contains different regions (outlined in bold) from sizes 1 to 5. Your task is to fill the grid so that each cell contains a number. The only constraint is that the numbers are limited by the size of the region. For regions of size 1 you put only 1, for regions of size 2 you put 1 and 2, then following the same principle. A region of size 5 must be filled by numbers 1,2,3,4 and 5. A cell cannot have the same number than any other neighbouring cell touching it (not even diagonally).



HEY, IT'S OKAY TO...

Science is serious business,
but we may share similar frustrations



...do nothing sometimes (maybe you feel inspired tomorrow)

... take a nap when you get home from work, wake up for an hour and sleep again

...steal someone's mandarin and replace it with an orange (of course they noticed)

...wonder what time you can go home without feeling bad

...order a sense of humour for your colleague on the lab order list

...judge your colleagues for just going down for pizza

...look out to the new building and wish you were a builder instead of a PhD student

...have your day ruined because you forgot to bring something sweet for after lunch

...gain a little weight during your PhD

...tag each other on PhD survival memes on facebook

...run out of breath whilst taking the stairs (at least you tried!)

*...show up to work tired, unprepared, unmotivated and just done with this shit
SOMETIMES (snap out of it though!)*

...sometimes break into song and dance in the lab because the radio just played your song

... forget a meeting with your boss and just wing it (if he or she doesn't notice, it went ok!)

... to miss talking to your student because who will you micromanage now?

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

You have a confession to make?

Mail us at Optimist.Phd@outlook.com

Thank you

Main topic
Joni Vanneste

PI interview
Christine Desmedt

Fun things to do
Hava Izci

News you may have missed
Simone Marcigaglia

Hey it's okay
You, for inspiring us

Pictures
Unsplash.com

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