



# Foliolum

## Aurora Borealis

Therapy in a new Light



G.F.S.V. "Pharmaciae Sacrum" - Study Pharmacy  
December 2021 - Issue 2 - Volume 35



# WE HEBBEN JE NODIG!

We hebben je nodig als kandidaat-lid van de KNMP. Alleen met brede steun van (aankomend) apothekers kunnen we effectief je belangen behartigen. Dát is wat we doen. Zorgen dat je hoogwaardige farmaceutische patiëntenzorg kunt leveren. Nu en in de toekomst.

## DE VOORDELEN VAN HET KNMP-KANDIDAATLIDMAATSCHAP 2021:

- Het Pharmaceutisch Weekblad, vakblad voor apothekers en toegang tot alle informatie op [www.pw.nl](http://www.pw.nl).
- Gratis éénmalig het Informatorium Medicamentorum (2021) tijdens de studie.
- Gratis éénmalig het FNA tijdens de studie.
- Geheel vernieuwde Standaarden voor Zelfzorg (2021) voor de ledenprijs van € 48,15 (inclusief btw).
- Toegang tot alle informatie op [www.knmp.nl](http://www.knmp.nl), waaronder de KNMP leden- en apothekenlijst.
- Toegang tot het KNMP Voorjaars- en Najaarscongres voor slechts € 25,- per congres (inclusief btw).

## WORD LID!

Kandidaatlidmaatschap van de KNMP kost € 42,- per jaar (inclusief btw).

**MELD JE AAN VIA: [WWW.KNMP.NL/KNMP/LIDMAATSCHAP](http://WWW.KNMP.NL/KNMP/LIDMAATSCHAP)**



**€ 42,- AN OFFER  
YOU CAN'T REFUSE!**



**KNMP**

APOTHEKERSORGANISATIE





# TABLE OF CONTENTS

## Prefaces, Policy Plan and Scientific Article

Prefaces of Sharon Koers, Sybrand Zielhuis and Myrthe Boerrigter

Policy plan of the 140th board of G.F.S.V. "Pharmaciae Sacrum"

Scientific article Frank de Gruijl

## P.12 PhD

Job Eijssink

## P.14 Alumnus

Matthijs van der Kraats

## P.16 Student

Arnika Pehl

## P.18 Teachers Column

Barbro Melgert

## P.20 Activities

## P.-28 Committees

Camping Committee, Charity, Entertainment and Sports Committee, Committee Pharmaceutical Sciences "SSS", Social Media Committee and First-years Committee





## Editorial



Dear reader,

For some of us it is the second time, for others it is something new including myself. By this, I am referring to the two beautiful lustrum weeks in February that lie ahead us. In these two weeks, we are going to celebrate that our association is already 140 years old. In these 140 years, more and more became to know about Aurora Borealis, the lustrum theme of our association. Also, in these years, more became known about certain diseases which led to new therapies being investigated.

The theme of our second issue is the theme of the scientific symposium of our lustrum: 'Therapy in a new light'. It is good to see that improvements are made in the field of healthcare. Unfortunately, there are still many diseases that cannot be treated yet. I find it touching to see that there are always people that do their best to raise money for the research of certain diseases.

Frank de Gruijl will talk about the influence of UV-radiation on our skin and the possible relation between vitamin D and the development of cancer. Besides, we asked some questions to prof. dr. Barbro Melgert about her life and the theme of our issue.

In this issue, you can also read about the PhD of Job Eijnsink. Furthermore, Matthijs van der Kraats, who is working as a community pharmacist, tells about his life and work. Lastly, a pharmacy student from abroad wrote an article for us.

We hope to see you all at the lustrum in February and I hope you enjoy reading!

Love,  
on behalf of the Editorial Committee 2021-2022 "PersCo",

Sharon Koers  
h.t. praeses

## Board



Dear reader,

Time flies! Right in front of you already lies the second edition of the Foliolum of the Editorial Committee "Persco". Traditionally, the second edition of the Foliolum is all about the theme of the Scientific Symposium of the Dies or the Lustrum. This year, we celebrate the 28th Lustrum! The theme of the Scientific Symposium has been revealed at the Allus party. At this great party, the new Almanac has also been revealed.

The Lustrum Scientific Symposium will be centred around the topic "Therapy in a new Light". During the symposium, participants will be informed about the use of light in therapy, but also in diagnostics. For example, light plays an important role in radio or nuclear pharmacy. Radiopharmaceuticals are mainly used for diagnostics for various conditions, but also as therapy for some conditions. I am sure the Scientific Symposium will be very informative and I hope to see you there.

At last, I want to thank the Editorial Committee "Persco" for their efforts to realise this beautiful magazine. I want to wish you a lot of reading pleasure and also a great Christmas break.

With kind regards,  
on behalf of the 140th board of G.F.S.V. "Pharmaciae Sacrum",

Sybrand Zielhuis  
h.t. praeses



# The 28th Lustrum Committee "Aurora BoreaLus"



Dear reader,

The Lustrum weeks will start in about two months by the time this Foliolum falls on your doorstep. This December our association G.F.S.V. "Pharmaciae Sacrum" will celebrate her 140th Dies Natalis. 'Dies Natalis' is the Latin word for 'Date of Birth'. This year will be even more special because we celebrate the 28th Lustrum! The Lustrum is held every five years of existence of G.F.S.V. "Pharmaciae Sacrum". Instead of one week of activities, there are TWO! The theme of our 28th Lustrum is: 'Aurora BoreaLus, reunite under the Northern Lights'. In this second issue of the Foliolum our theme appears. We are inquisitive to read the second issue of our lovely Editorial Committee.

Aurora Borealis (Northern Lights) are the natural phenomena that occur in the Northern Hemisphere close to the magnetic pole. Aurora Borealis consist of electronically charged particles that collide with particles from the sun. This collision creates shades of green, violet, yellow, blue and red shades. Interested in the Northern lights? The best places to watch the lights are in Northern America, Canada, Norway and Iceland.

The Lustrum Committee has the honour to organise all different Lustrum activities. After one and a half years of hard work, we revealed our Lustrum theme and colours (pink, purple and turquoise) at the Lustrum revelation festival. Due to the long period of restrictions, our members and plus ones were very enthusiastic to celebrate the first great party of the year. It was a success. The second activity is the Almanac-Lustrum Party (Allus Party) on the 14th of December. On this special day, the program with all Lustrum activities is revealed.

In February the Lustrum will start on Wednesday, the 9th of February, with an official opening, continued by the Reception. At the Reception, invited guests can congratulate the board on the birthday of the association. After the Reception, all members can come to the Opening Party. On Friday the 11th of February, the gym clothes can be put on to sweat our heads off at the Sports Evening. In the weekend the Lustrum continues with an outdoor activity on Saturday the 12th of February and the traditional Rally on Sunday the 13th of February. On Monday the 14th of February the Midlustrum Party is held. On Tuesday there is some time to rest... The Scientific Symposium is held on Wednesday the 16th of February followed, in the evening, by the first of three Lustrum Theatre performances. The Lustrum Theatre is held once every five year and the "theatre group" has worked extremely hard to compose this beautiful piece since September. On Saturday the 19th of February the Gala Dinner and Prom take place to end the Lustrum with an enormous 'Aurora BoreaLus'.

On behalf of the entire committee, I can state that we are pleased with the program we composed.

I hope that you are enthusiastic to join the activities and make the 28th Lustrum a great and unforgettable one. We hope to see you there!

With kind regards,  
on behalf of the 28th Lustrum Committee of G.F.S.V. "Pharmaciae Sacrum",

Myrthe Boerrigter  
h.t. praeses





# Policyplan of the 140th board of G.F.S.V. “Pharmaciae Sacrum” 2021 - 2022

Dear members of G.F.S.V. Pharmaciae Sacrum,

As the 140th candidate board of the G.F.S.V. “Pharmaciae Sacrum”, we would like to present our policy plan for the year 2021-2022. Pharmaciae Sacrum (P.S.) is more than 139 years old and has enriched its members for years with conviviality, space for personal development and support of the study program. In the coming year we will fully commit ourselves to the association and retain the core values of P.S. Through this policy plan, we will stimulate the further development of the association. We will do this with the help of the following policy points.

## COVID-19

For some time now, association life has been affected by the corona pandemic. Due to this pandemic, since March 2020, many P.S. activities have not continued in the usual way. Therefore, a digital alternative has been sought per activity, if of added value. It is our priority to let the activities return to their original form. However, for each activity, the board or committee that organizes the activity will draw up an online alternative. This will be done until the government and the University of Groningen indicate that physical group activities are possible and the chance of another corona wave is considered small. This could be achieved by working with rapid tests wherever possible. In addition to the ambition to return the activities to their original form, we will pay attention to the impact that the coronavirus has had on students. In particular, the students who went to study in the academic year 2020-2021 have been able to make little to no social contacts with their fellow students. We will offer this group of students extra opportunities to still integrate with their fellow students. We will organize a social activity for them three times next year. In addition to the original First-year Parents’ Day, we will also organize a Parents’ Day in which seniors can participate. The second-year students will be given priority over the students from the years above, because they have not had the opportunity to participate in a physical Parents’ Day last year.

## MPS

The Master Medical Pharmaceutical Sciences (MPS) has been working together with our association for several years now. MPS students can become members of P.S., but currently this is done to a small extent. As an association, we would like to make more contact with the MPS students and enthuse them to become a member of P.S. To achieve this, we would like to gain insight into the wishes of MPS students with regard to our association. We will, by means of a one-off survey, evaluate what the MPS students need and what they are still missing within P.S. We will use the results of this survey to involve the MPS students more in our association. In addition, in the academic year 2021-2022 we will organize a research-oriented Career Afternoon with lectures for MPS students, which is currently organized by the program director. This Career Afternoon will also be open to Pharmacy students.



## Personal development

The personal development of P.S. members is a core value of our association. Self-development is a good way to work on this personal development. One can learn a lot from oneself, especially when this is handled in the right way. Furthermore, a lot can be learned in a board or committee year from the people with whom you work. Personal development can be better mapped out by setting goals in advance and evaluating them afterwards. To achieve this, we will set up a format for a personal development plan. We, as a board, will carry out this plan as a pilot from the start of our board year, as well as two committees that will be installed during the October GMM. In March 2022, we will evaluate this pilot and, if successful, prepare a format for committees that will be installed from the board year 2022-2023.

## Working group activities and committees

In the academic year 2020-2021, through the working group activities and committees, a critical look was taken at the entire range of activities and the interpretation of the committees that P.S. has to offer. The members of this working group presented an advisory plan during the General Meeting of Members in March 2021. A number of proposals on this advisory plan have also been adopted. Based on this advisory plan, we will draw up a timeline stating when further implementation of the content of the advisory plan will be implemented. It describes exactly when the adjustments will be implemented for a committee. The adjustments that need to be made for the Social Media Committee and First-years Committee will be implemented from the beginning of our board year. The timeline for the further implementation will run over a period of two years, starting from June 2021.

In the coming year, we will be full of good cheer to implement our ideas in the best possible way. We will preserve the structure and core values of the association as well as possible.

Hoping to live up to expectations,

The 140th candidate-board of the G.F.S.V. "Pharmaciae Sacrum",

Sybrand Zielhuis	praeses
Annabel van den Bosch	ab-actis
Anieke Hoffhuis	quaestor
Wies van Bakel	assessor I
Twan Schrijver	assessor II





Scientific Article

Sunshine on your skin

**Prof. dr. Frank R. de Gruijl**

Emeritus associate professor, Skin Research Lab, Department of Skin Diseases, Leiden University Medical Center, Leiden, The Netherlands.

## Sunlight in broad perspective

Through the ages the sun was recognized, and even worshipped, as a 'force of nature', both good and evil. In that sense not much has changed. Modern science still recognizes the upsides and downsides of sunlight: the driving force in our atmosphere (weather) and biosphere (photosynthesis) and a direct and indirect source for our energy consumption (solar power, wind power and hydro-power, fossils and biofuels). But by the same token, it can also cause damage. Mother Earth protects us from most of the harmful solar radiation by her atmosphere and by her magnetic field which deflects charged particles (redirected toward the Poles causing the wonderful Polar Lights, Aurora Borealis and australis, high up in the atmosphere). The primordial anoxic atmosphere was, however, not protective enough to enable cells to survive at the Earth's surface. The modest first introduction of oxygen (O<sub>2</sub>) some 2.5 to 2.0 billion years ago, climbing to present levels after 1 billion years ago, gave rise to the ozone (O<sub>3</sub>) layer in the stratosphere by the impact of vacuum ultraviolet (UV) radiation (wavelengths below 200 nm, 1 nm = 10<sup>-9</sup> m; **Figure 1**). This layer blocked out hazardous UV radiation of longer wavelengths (200 – 295 nm), ultimately lowering the lethal impact of solar radiation on exposed cells by 4 orders of magnitude. This was a prerequisite for the evolution of life at the Earth's surface (the Berkner-Marshall hypothesis).

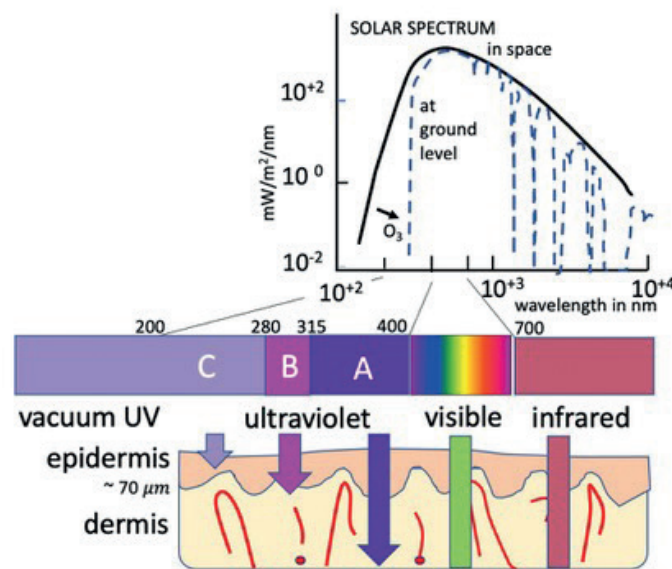
The sun is important to our health, not only because we are part of the biosphere, but also because of 'its direct effects' on our eyes and skin. Evidently, sunlight enables us to see and synchronizes our biorhythm, but too much can damage our eyes ('blue light damage' to the retina, sunburn on the eyeball, snow blindness and in the long run clouding of the lens, cataracts and perhaps damage to the central retina, macular degeneration). Below we will focus on effects on the skin which again can be beneficial or detrimental. Although the skin is affected by the entire solar spectrum at ground level (most broadly by heating up), it appears to be most sensitive to the photochemically most reactive part, the UV radiation of wavelengths greater than 295 nm that still reaches us at ground level.

## Some basics on photochemistry

The shorter the wavelength of radiation, the more energy is carried by a photon (a 'particle' of electromagnetic radiation such as light). Only upon absorption of the photon by a molecule can the energy be channeled into a chemical reaction (first law of photochemistry). In order for this to happen, the photon energy must match that of an excited state of the molecule (to bump up energy levels of valence electrons to initiate a chemical reaction), i.e. the wavelength must fit the absorption spectrum of the molecule. But not every photon absorbed will lead up to the chemical reaction, only a certain fraction (the 'quantum yield').

The absorbing molecules relevant to biological organisms are of an organic nature, such as proteins and nucleic acids. Broadly speaking, one can say that the shorter the wavelength the more types of organic molecules can absorb the photon. Specific parts of these molecules, called 'chromophores', absorb the radiation. The chromophores can be of different nature but most often they contain double bonds (two pairs of electrons) between neighboring atoms, commonly carbon atoms. A double bond absorbs below 200 nm (ethylene), but in repeats of conjugated bonds (alternating single and double bonds) the absorption shifts toward longer wavelengths; the more extended the series of such repeats (more 'conjugation') the longer the wavelengths, see **Figure 2** (a bit like increasing the length of the sounding part of a guitar string to lower the tone, increasing the wavelength). Thus, the absorption can shift into the solar (UV) spectrum at ground level. These conjugated repeats can occur in linear chains (like in carotene with absorption extending up to 500 nm, leaving an orange color) or in aromatic rings (a single benzene ring with absorption in the 230 – 270 nm range or an extended ring structure in the heme molecule with absorption all the way up to 600 nm, leaving red as the color of blood).





**Figure 1:** Schematic depiction of the solar spectra, its spectral regions and penetration into the skin. In the top panel the solar spectra, incoming on the Earth's atmosphere (solid curve) and at ground level (dashed curve). In the multi-colored bar in the middle the spectral regions are given (ultraviolet with UVC, UVB and UVA). At the bottom, the top part of the skin is depicted with the densely cellular epidermis at the top (70 - 100 microns thick, including the stratum corneum 10 -20 microns) overlying the dermis of low cellularity with connective tissue and small capillary blood vessels reaching up toward epidermis which is devoid of blood vessels.

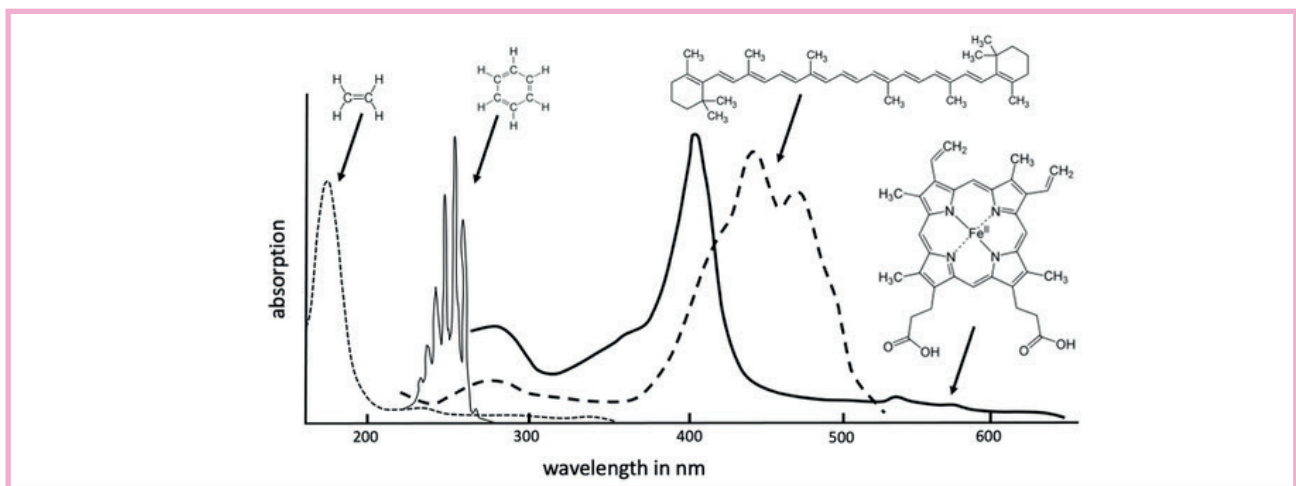
Aromatic rings are commonly present in proteins and all DNA bases contain UV-absorbing ring structures with double bonds inside and attached (carbonyl groups). In fact, DNA is the most strongly absorbing constituent of a (bacterial) cell in the short wavelength UV range at ground level (the UVB range, see **Figure 1**). Ensuing photochemical reactions damage the DNA and impair its function (blocking RNA transcription and DNA replication). Thus, sunlight at ground level can still kill bacteria and inactivate viruses (like SARS-CoV-2) appreciably when exposed long enough in summer around solar noon. But it also damages cells, and especially their DNA, in the most superficial layer of our skin, the epidermis (see **Figure 1**).

## UV radiation in our skin

Like all life on the Earth's surface, our skin is by necessity well adapted to the challenges posed by sunlight, in particular the UV part. The skin has several mechanisms to mitigate damaging effects but can also take advantage, for example in forming vitamin D3 (important for healthy bones and muscles). Nevertheless, an UV overdose to the skin will cause 'sunburn'; not a genuine immediate heat burn, but a delayed inflammatory reaction to the toxicity caused by UV radiation (**Figure 3**).

To fend off detrimental effects of UV exposure, the skin shields off UV radiation in absorbing layers. First of all, by its outer layer (stratum corneum) of cornified cell remnants, by pigment and by cells overlying the deepest, basal layer in the epidermis. Long residing (stem) cells in the basal layer drive the renewal of the overlying epidermis and therefore need protection most. The turnover of the viable epidermis takes about 4 weeks which implies that (UV) damaged and 'worn out' cells are continuously replaced. UV exposure causes the skin to increase the shielding; thickening the epidermis, including its stratum corneum and increasing pigmentation. This response is dubbed UV adaptation or acclimation, lowering the susceptibility to sunburn.

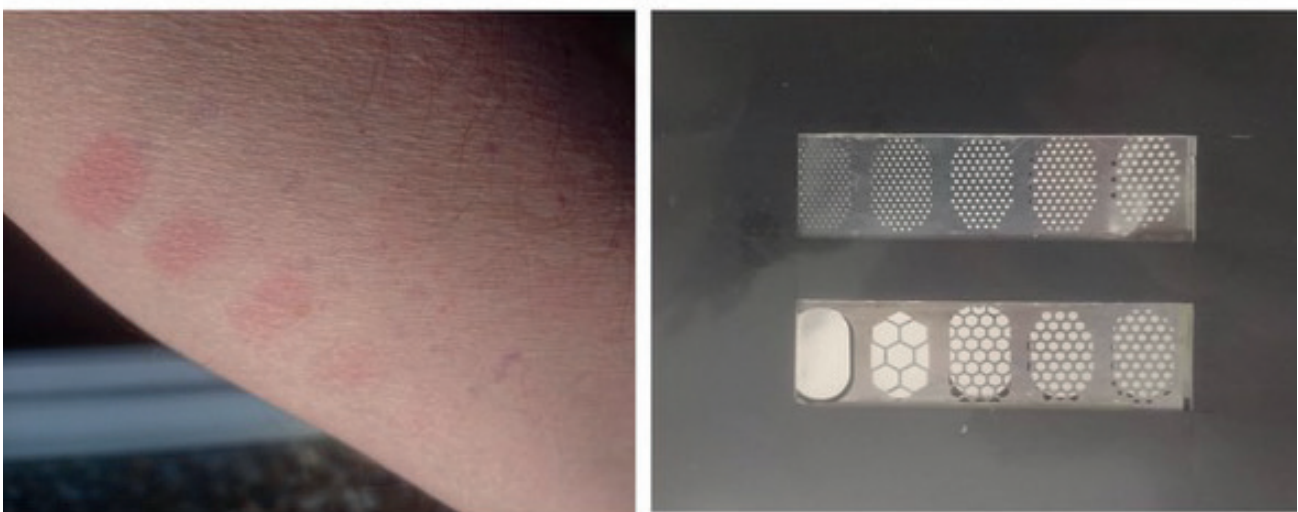
The skin cells also harbor common protective mechanisms such as renewal of (damaged) proteins, scavenging of (oxygen) radicals generated by UV radiation and most importantly, repair of UV-damaged DNA (certain inherited DNA repair defects result in UV-related skin cancers early in life). The dividing basal cells have additional mechanisms to prevent and correct errors in replicated DNA. Such errors give rise to mutations (in genes coding for proteins and in non-coding regulatory DNA parts) and thus possibly to malignant transformation of the cell. If DNA damage becomes overwhelming, when repair and correction mechanisms can no longer cope, a basal cell can eliminate itself by apoptosis, a well-organized disintegration. This will prevent cells from becoming cancerous (shown to diminish development of squamous cell carcinomas in mouse experiments). Proliferation is increased to replace the lost cells. With massive apoptosis the epidermal turnover can become a matter of days: the epidermal defects left by the apoptotic basal cells move rapidly outward into the stratum corneum causing skin peeling. However, the proliferative response may also activate dormant malignant cells. Severe sunburns appear to increase the risk of skin cancer; in particular, basal cell carcinoma and melanoma, the most malignant type of skin cancer arising from pigment cells, melanocytes. UV radiation can also modify the immune system, both locally in the skin and systemically throughout the body. This is largely mediated by immune-active substances, cytokines, released in the skin. Production of antimicrobial peptides in the skin is increased, but immunity effectuated by cell-to-cell contact (cellular immunity) is suppressed.



**Figure 2:** Organic structure formula, from left to right, ethylene, benzene, carotene, heme with their respective absorption spectra.

The latter appears to prevent us from reacting allergically to our own UV-exposed skin with all sorts of UV-modified molecules which might be recognized as ‘foreign’ by our immune cells. Insufficient suppression was indeed found to be associated with ‘sun allergy’ (polymorphic light eruption); the allergic reaction usually resolves in a couple of days as the skin acclimates to sun exposure (also involving a shift to more anti-inflammatory cytokines). But cellular immunity guards against certain infections and skin cancer and suppression can thus aggravate infections and increase the risk of a cancerous outgrowth in the skin.

UV radiation causes the release in the skin of hormones, such as endorphins, and related substances, which may (partially) explain the sun’s effect on mood and cognition. This is a very much poorly researched aspect of UV-induced skin responses. A recent publication showed UV exposure of the skin to affect the signaling between the brain and gonads (sex glands) with noticeable effects on sexuality in both mice and men. An earlier study in rats found that urocanic acid released from the skin up on UV exposure comes into circulation, passes the blood-brain barrier and is then converted to glutamate. This would explain improved object recognition and motoric learning (staying on a rotating rot).



**Figure 3:** Sunburns (left panel) in a series of small skin areas on the inner lower arm 24 hours after incremental UV doses obtained by exposure through a mask with sieves of decreasing density (right panel). Thus, the sensitivity is assessed by the dosage required for a minimal perceptible redness (an UV dose dubbed ‘minimal erythral dose’, MED).



## **Epidemiology and clinic**

Skin cancers in humans show clear involvement of UV radiation by the types of mutations found in the nuclear DNA of the cancer cells. The incidences of skin carcinomas and melanomas have risen enormously over the last 60 - 70 years (almost 20 fold for melanomas in Denmark), but the mortality dictated by melanoma did not keep pace and rose much less (2-3 fold). Hence, most of the skin cancers appear to be non-lethal which raises the thought that we might be dealing with 'overdiagnosis' and burdening patients too much, particularly with diagnoses of melanoma at ages less than 50 years. However, no dermatologist will accept broad statistics in diagnosing a suspicious skin lesion that may well be a lethal melanoma. Although less lethal, skin carcinoma must be treated adequately to prevent a locally devastating invasive growth.

Vitamin D3 levels (or rather, levels of its metabolite 25 hydroxyvitamin D3) decline from autumn to winter because of a lack of UVB radiation in sunlight. In a cohort of kidney transplant patients, my group found that the lowest winter time vitamin D levels were related to increased risk of internal cancers (vitamin D statuses before cancer diagnosis). This result was in agreement with an earlier study of ours which showed that UV exposure or vitamin D3 supplements inhibited the outgrowth of intestinal tumors in mice prone to develop intestinal cancers; UV exposure even reduced the rate of conversion of the tumors to malignancy. Other studies on this subject of vitamin D and cancer are contradictory, but our results clearly support the beneficial effect.

## **The general picture?**

Here, we had a look at the biological effects of sunlight in broad brush strokes, in particular, the effects of solar UV radiation on the skin, also carrying beyond the skin. The broad practical directive is to keep up your moderate daily sun exposure in spring and summer for sufficient vitamin D but to avoid excessive sun exposure (no sunbathing) to limit the risk of skin cancer. In everyday life we are not much aware of the UV radiation reaching us from the sun, also to a large extent scattered from the blue sky, but hopefully the reader has gained a broader view and appreciation of the (partially) known effects, but especially of those as yet largely uncharted.

## **Background literature:**

De Zon, bron van leven, energie en zorg. Cahier 2, 4de jaargang, Stichting BioWetenschap en Maatschappij, ZonMW, Den Haag, kwartaal 2, 2021.

De Gruijl FR. Health effects from solar UV radiation. Radiation Protection Dosimetry 1997;72:177-196. (review)

Hoel DG, Berwick M, de Gruijl FR, Holick MF. The risks and benefits of sun exposure 2016. Int J Environ Res Public Health. 2018 Dec 10;15(12):2794. (review)

Jagger J. Introduction to research in ultraviolet photobiology. Prentice Hall Inc., Eaglewood Cliffs, N.J., 1967.

Feynman RP, Leighton SM and Sands M. The Feynman lectures on physics. Vol. III, pp 15-7 to 15-12. Addison-Wesley, Reading, Massachusetts, 1967.



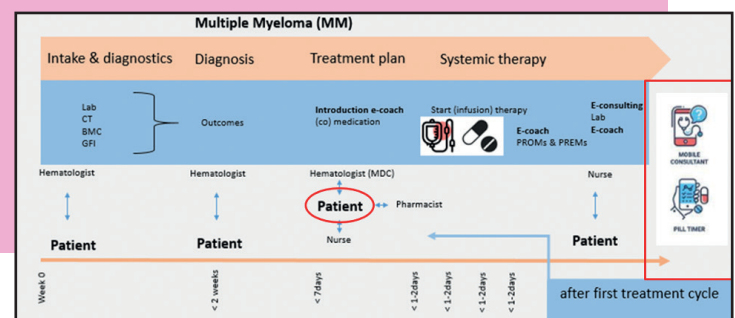
PhD student  
**Job Eijsink**

Job Eijsink works as an AIOS (“arts in opleiding tot specialist”) hospital pharmacist in the Isala hospital located in Zwolle, the Netherlands. Besides becoming a full hospital pharmacist, he is doing a PhD trajectory at the Rijksuniversiteit Groningen. His PhD focuses on the topic “VBHC and expensive medications, subjects as immunotherapeutics in melanoma stage III/IV, targeted therapy with TKIs (tyrosine-kinase inhibitors) and the development of an e-coach for complex oral and subcutaneous therapies against multiple myeloma (Kahler’s Disease). In this article, the main focus will lie on his research regarding ITUMM: The Impact of Telemonitoring on Correct Drug Use, complications and quality of life among patients with Multiple Myeloma (MM). The ITUMM-study is a randomized controlled trial (RCT) of telemonitoring among patients with multiple myeloma.

In daily practice, it is seen that patients in the hospital mostly get care following a standard procedure or medication protocol. These standard protocols provide a higher quality of patient care and the fact that the care can be carried out continuously independent from the variables place and time. However, from the concept VBHC (Value Based Healthcare) it is seen that every individual can experience care differently. In addition, health outcomes that each individual patient finds specifically important is not always discussed in the doctor’s office. The concept VBHC is introduced by Harvard-professor Michael Porter in his book “Redefining Health Care” (2006). This concept provides a vision, which combines value added by defining patient reported outcomes and the cost-effectiveness of processes, in favour of the patient. In this way, it is possible to provide better and affordable health care. Patient value is the central theme.

In my general research, I am looking to groups of patients with a certain clinical condition at different conditions. In my PhD trajectory, I am specifically looking from my role as pharmacist regarding expensive therapeutics. With expensive therapeutics, I am referring to

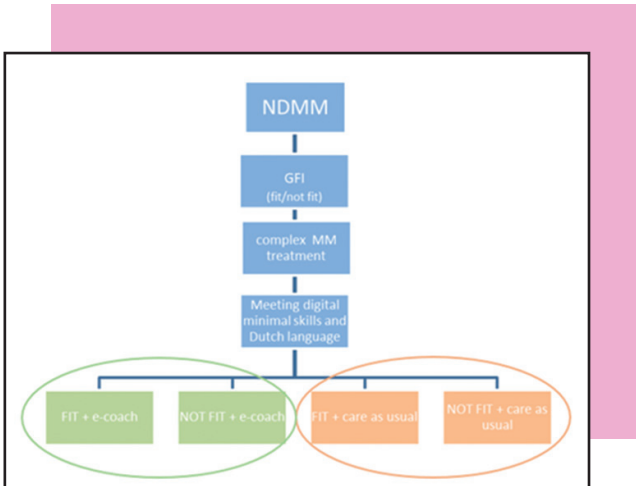
treatments with a cost of at least 80,000 euros. At the moment, the most promising research currently ongoing in PhD-trajectory is a RCT in the Isala hospital, which we give patients with Multiple Myeloma an application that will help them to gain some insight and overview in the complex therapy they’re undergoing. Besides this, we adequately act on signals or side-effects, thereby hoping to improve the quality of life and patient compliance.





Quality of life

We expect that when a patient is well monitored, the quality of life will increase. This because when a patient is well-monitored signals such as side-effects can be detected in an early stage, so appropriate measurements can be taken. The quality of life will be determined by the patient itself, with the help of an app. In addition, other signals and preparations that are important to be mentioned during a meeting with a specialist or pharmacist can be filled in via this app. In this way, patients can reach us 24 hours a day.



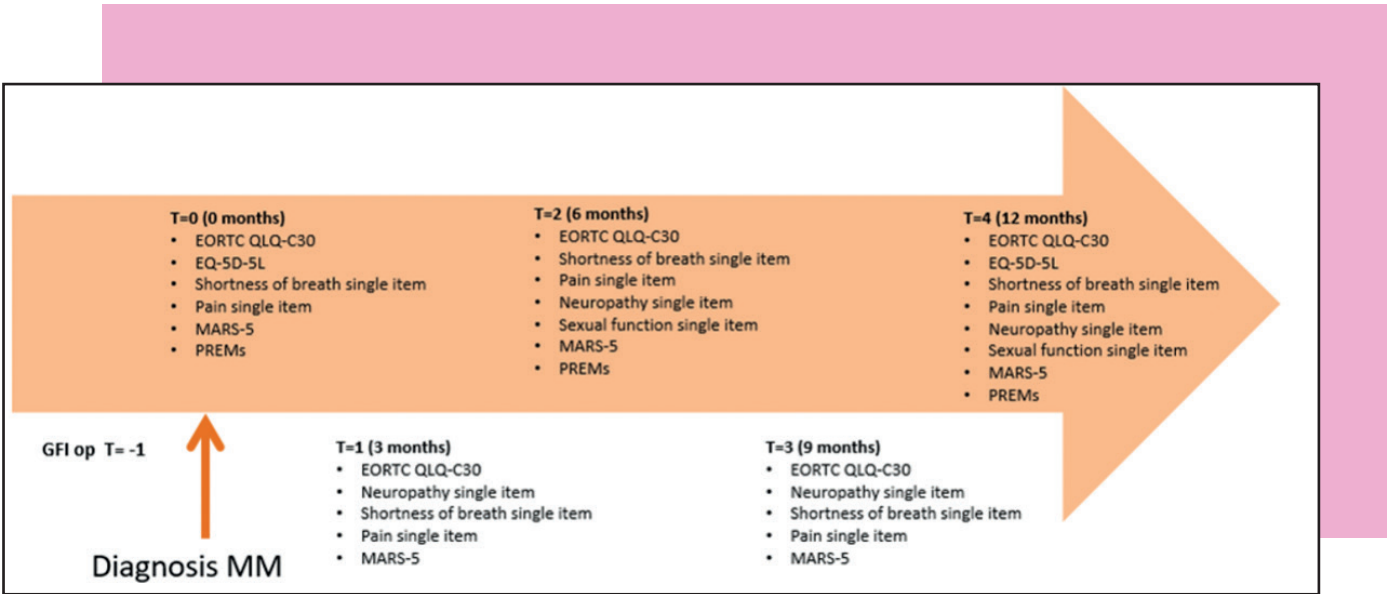
Patient Compliance

In theory, if we can reach the patient and give them a guide in the jungle of medications related to this certain clinical picture. It is possible to help them at which moment they need to take a specific medication. Multiple Myeloma patients nowadays have around 10-15 different (oral) medications for their treatment.

The thought behind the guidance via the app is that if we can improve the guidance, the patient compliance will also increase. With this, we hope to achieve that the PFS (Progression-Free Survival) will be prolonged. Besides, we expect that the side-effects will be reduced (because medication is taken at the right time and if there are any complaints the dosage can be adapted in an early stage) and hopefully this will eventually cause a decrease in the long-time hospitalization.

Future of the hospital pharmacy and the effects of my research

The future of health care will have a drastically different look, at least that's what I think. Patients will get more individual adapted care, which will be more chain-crossed. With chain-crossed I mean that boundaries are less important within a clinical picture (think about ageing and comorbidities) and more cooperation between the first and second line health care. The pharmacist can especially play a role in the complex and expensive treatments by giving individual health care suited for an individual patient, this will increase the chance of a successful therapy. Besides this, especially within the class of expensive therapeutics, combination of therapy will be provided because this often has very specific mechanisms of the certain therapeutics. Therapeutic Drug Monitoring (TDM) is within this area a good way to measure how the patient theoretically will react; also a clinical view is always necessary. With this research, we expect that patients who get individually guided within the intake of their therapeutics/medication after the diagnosis Multiple Myeloma, show better results. The clinical picture of Multiple Myeloma is very complex; we think that if we can reach our goals it should be possible to broaden this form of health care to areas such as hematology or other clinical pictures that require complex therapies.





Alumnus

## Matthijs van der Kraats

My name is Matthijs van der Kraats. I've grown up in beautiful Twente after which I studied in Groningen. Just like a couple of other people, Pharmacy wasn't my first choice. After not being selected for medicine, I chose Pharmacy. In 2012 I finished my studies. I am happy to say that things turned out like this. The public pharmacy is a very beautiful and challenging place, where I get new energy every day!

During my studies, I have studied quite vertically. In other words, not everything went perfectly normal. Especially during my first years, where I got to know the city of Groningen very well. Let's call it academic education. During my last years, I managed to limit the damage. I had done a good make-up game to smooth out the folds of the first years. The advantage of this 'vertical period' has been that due to this, I got to know a lot of fellow students in the small pharmacy business. That's something that still comes in handy.

Even though I did not have much experience in the pharmacy before graduating, I did have a feeling that working in the public pharmacy would suit me. After a fun conversation in Amsterdam, I have worked for a little more than three years in 'Apotheek Plesman', which was then part of a partnership between three pharmacy practices. There, I also did my specialisation to become a community pharmacist. I have learned the profession well by making many hours in the pharmacy, directing the team, having a lot of patient contacts and picking up projects. Those were busy, hectic, but also very fun and educational years. To be enterprising gave me energy. After the specialisation, I wanted to grow into a management function in Twente.

At that time, there was a job offer in Almelo at 'Apotheek Aalderink'. A relatively small pharmacy, which was partners with five pharmacies (four in Almelo and one in Tubbergen), which gave me the unique chance to take a look inside a big company. Because the team of 'Apotheek Aalderink' was not too big and there were opportunities for renewal, it was possible to make

changes.

After a couple of years I got asked to be co-owner of the company. A question I did not have to think about for a long time. Since the beginning, I wanted to manage a pharmacy and bring entrepreneurship. It was a very special chance for me. This happened 4 years ago. In that period of time, I also changed to a bigger pharmacy 'Lemberts Backer' in Almelo. Looking back, every step of the way has been a contribution to my development as a pharmacist and the last step has given it all another dimension.

The fun part about working in a larger company, is that you have more co-pharmacists. We are now with a total of seven pharmacists. Every other week we have a team meeting where pharmaceutical developments are being discussed and projects are being divided. At the same time, we work so closely together that we see each other every day for consultation, if necessary. This causes a nice dynamic, if you ask me. We all work in fixed pharmacist teams, but during illness we are flexible and we easily change teams. This is a big benefit. One of the challenges in the company, next to the quality and logistics, is to get uniformity in procedures. Every team works a little bit different, so it is a continuous process. Furthermore, we keep up with new developments. For example, we are very actively working with FLOW, we work digitally and we implement from intraplex. The new ideas are there, but sometimes you just need to wait for the right timing.

In July 2018, the TAO-UA (Twentse Apothekers Organisatie)



was established. Since the start, I had the honour of fulfilling a board function there. We are now with 65 pharmacies and 122 pharmacists. Because we have joined, a lot of doors have opened and opportunities have come. Think about working together with general practitioners, hospitals, but also nursing homes and health care providers. Nice results have been reached like the “longformularium”, “wondformularium”, white paper of chain appointments between pharmacist, GP and so on.

Also in Almelo, we are more and more looking for cooperation. There has been talked about a multidisciplinary approach many times, but unfortunately it is carried out monodisciplinary most of the time. There are enough ideas, but the execution is lacking. The fun part about being a pharmacist is that you can be a connecting factor. Because we as pharmacists are used

to picking up projects, we usually also take that part. At this moment, we are busy implementing a unique concept where cooperation is key. I cannot say a lot about that yet, but you can always contact me.

And just like the delusion of the day, I am now also busy telling everything we do and offer. But not why I do it. For me, it's the pleasure of entrepreneurship and having an impact on care. That gives me the motivation to go to work every day. Also during corona, we have seen what important work we deliver and how nice it is to contribute to that. I get pleasure from functioning as a team and achieving our goals together. In the entrepreneurship part, I can use my enthusiasm and creativity. This gives me satisfaction. If you want something, you should do something.





Student

**Arnika Pehl**

Studying at the University of Vienna, Austria

Austria as a country is dominated by the Alps. However, there are also several flatter areas in the East, where two of the cities lie, in which you can study Pharmacy. Those are Vienna, the capital, and Graz, the second biggest city of Austria. The third city is more embedded in the mountains. It is Innsbruck. A fourth possibility is in Salzburg, but here the university is private, so you have to pay to study. In general, there are no fees to pay for studying, if you finish in a certain time (two semesters more than the minimum). This is helpful for students with a not as good financial background. But this also means that there is nothing included, no public transport ticket or sports courses. In the smaller cities, it might be quite possible to avoid buying a public transport ticket, but it might prove more difficult in Vienna. Also, you shouldn't forget the snow and ice in winter (this being less and less of a "problem" in Vienna).

I study at the University of Vienna, so most of what you will read here is best applicable to Vienna.

If you are wondering where to study outside of your home country, I would definitely recommend Austria (especially Vienna of course).

I also had to answer this question a few years ago. I was applying in my home country, not very successfully, but also not trying too hard and I thought of other possibilities. To me, it always seemed natural to consider the neighboring countries as well, so I had to choose two of them and apply there. Destiny struck and I happened to start studying Pharmacy in Austria.

The following weeks after my successful application were dominated by searching for a room. For this, I used several platforms and mainly considered shared flats. Since I've started searching early, I was quickly successful and found a room close to the 'Pharmazentrum' for 325 euros. Quite good for a capital, but a standard price for smaller rooms in Vienna. Later during my studies, I moved to a dormitory and enjoyed it a lot as well. In general, there are more students living in shared flats. Also often enough with the partner or still with the parents, but living in a dormitory is common enough as well.

Shortly after the beginning of the first semester, I had to realise that like in my hometown, the University is rather widespread throughout the city and that we were only based in the main building during the first semester. It didn't bother me too much though, since it was close enough

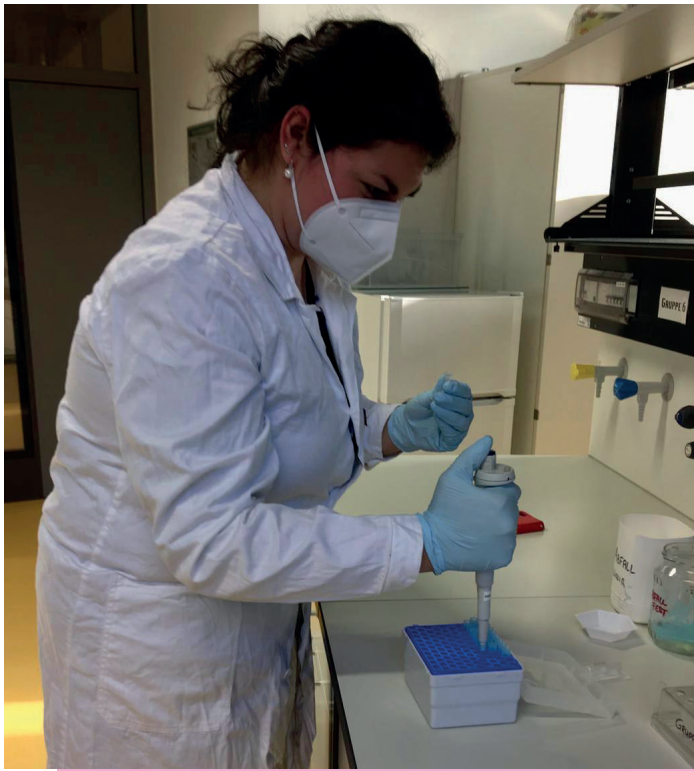
and the more beautiful and historic building.

Besides studying for the first exams, which started quickly after the semester started as some lectures would last only a few weeks, I started exploring the city and its possibilities. I enjoyed the beautiful and quite impressive surroundings and started to change some of my habits. For example, I switched from drinking tea and beer to drinking coffee and wine. To do something for my health as well, I tried out different yoga and other sports classes that were offered for a fair price by the university. These I can recommend a lot, not only to stay fit and healthy, but for fun and to meet new people besides your own studies as well. Although the last two points can work well enough with parties, etc. too.

Austria, in general, doesn't differ too much from other countries in what students do in their leisure time. The cities are lively and offer many things for going out. Austria, especially Vienna, has a strong so-called 'Kaffeehauskultur'. It means to go to a cafe and stay there for many hours over a small cup of coffee.

What might also be different is the number of museums, theatres and operas. It is common to meet another student at an opera/theatre performance. The Viennese State Opera offers tickets from 3 euros upwards and you can actually hear and see well from those places. Therefore, somebody that is more interested in these things will definitely be happy in Austria. For everyone who likes hiking, climbing, mountain biking and skiing it is definitely a perfect match as well. Although Vienna and Graz are only surrounded by hills, it is never too far





to get to the mountains. Normally it takes at most 1.5 hours by car to the closest mountains with 2000 meters above sea level from every city, if the city isn't already embedded in the mountains. As I'm coming from a rather flat region, I had to get accustomed to it at first and then really started to love it. Especially the hills are perfect for training for runs. Even if you are more of a swimmer, Austria has enough possibilities in hand. Apart from the public swimming pools, there are plenty of lakes and rivers with good to excellent water quality, though the outdoor possibilities are more popular during summer.

Furthermore, something that is more related to geography, you will get a different point of view on distances and possibilities in Europe. Not without reason is Austria often considered to be lying in the heart of Europe. Although technically it is more likely to be in the center of the EU, it does border nine other countries. Within about four hours by car, you can reach five other European capitals. Obviously, this is an amazing starting point for traveling.

What proved to be the main difficulty in my first semesters, and partly still is until now, is the language and to be more precise the different dialects. Although my native language

is the same as spoken in Austria, the dialect is very different. This is probably important for everyone who has learned German since when native speakers struggle, it can become difficult for everyone else. Although it is doable, you will need some patience. The university lectures are all held in 'standard German' with only a slight dialect and most of the time jokes about how the Germans would say it, if a dialect word was used (I wasn't unhappy about this). So you shouldn't worry about the language too much.

Pharmacy (Bachelor and Master) is done in German; however there is a new Master called Drug Discovery and Development, which is held in English. With this, you can't work in a community or in a hospital pharmacy afterwards. For Erasmus, it really depends on what modules you will choose, but most likely, you will need German.

To keep going with some facts. The Bachelor takes a minimum of three years and the Master two years. In general, the average student studies for 7.5 years. This is because the studies aren't built up with classes like in school, but every student has to find his/her own rhythm and pace. You always need to do specific modules before being able to do the labs, but apart from that, you have a certain freedom in choosing when to do which module. This can be seen as positive, for example, when you work, but it can also be negative as the dynamic of the group is missing. Of course, there are study groups and such things, but, as I can tell after doing an exchange semester, the dynamics are still different. I personally find this a bit difficult, as it is easy to get distracted with everything else and start to push exams to later dates. The effect is not felt immediately enough to prevent you from it and as many other students are doing the same, you won't feel bad about it. Towards the end of the studies, it is very common to already work in a community pharmacy and get some practice for the upcoming practical year.

The practical year is a 12-month internship including further classes at an institution that's not part of the university. The internship can be done either in a community pharmacy or in a hospital pharmacy. Only after this, you are considered an Apothecary.

In the end, studying in Austria can really broaden your mind and in my opinion, the only thing missing is the sea (which can still be reached within a couple of hours depending on the part of the country you are in).





Questions to...

## Prof. Dr. Barbro Melgert

My name is Barbro Melgert and I was born in the beautiful city of Groningen. I grew up in the western part of the Netherlands, in a town called Noordwijk. After finishing high school, I returned to Groningen to study Pharmacy. Nowadays I am a researcher and most of you know me as a teacher.

I teach and I am involved in the courses Pathology, Immunopharmacology, Advanced Human Disease Model Technologies, Experimental techniques in research, Translational Research in Respiratory Disease and Pharmacology of Chronic Diseases and Ageing.

### **What was your dream job when you were in high school?**

I wanted to be an astronaut SOOO badly!! But at the time it was quite complicated for women to become an astronaut and you were not allowed to wear any glasses so that dream was over very quickly. The reason for my youthful ambition to become an astronaut can be based on the fact that I love science fiction. To do things that have never been done and to discover things that have never been discovered sounds like a dream to me. In addition, the technical aspects and the constant confrontation with “new” challenges attracted me. I don’t really like the daily grind, that really gets me restless. That is also, why I like to do research very much. I also like to be creative, repairing and dissecting technical machines to find out the reason why something is broken or doesn’t work.

### **What did you like the most about your time as a student?**

I liked a lot during my time as a student but mostly the fact that everything was possible or at least the feeling that everything was possible. There was so much to discover and everything was new. That is also the reason why I like to work with students, the spontaneous recognition of how I was when I was a student still gives me joy. For example, the excitement and enthusiasm when going on a trip to a foreign country are things that I really liked as a student. The study itself was quite reasonable but as many students it is not the main priority, mostly getting to know people and finding your way of life are the things I enjoyed the most and have determined my life a lot. My “friends for life” are mostly people I’ve met during the first year of my study. We just celebrated our 35th anniversary, at such moments you realize “Wow I’m getting old :)”. Just think

for a moment about which people you’re still seeing regularly in 35 years, it seems far away but I can tell you time flies by!

### **What made you choose this profession?**

My main reason to study Pharmacy was that I wanted to do something with “poisoning”, later in the first year I realised that Toxicology was totally not my thing. After studying Pharmacy, I became a pharmacist but decided not to practice this profession. Therefore, I went into the research direction. Firstly, I have done a PhD under the supervision of Prof. dr. Klaas Poelstra, in the area of Drug Targeting.

After I completed this PhD, many options were available. In the end, I have chosen to work for a start-up company, which turned out to be not as exciting as expected. Therefore, I returned to do research in the UMCG, in the lung research field.

I was under supervision of Prof. Dirkje Postma, who just received the Spinoza Award for her research on the connection between smoking and lung diseases. Personally, I have done research as a postdoc researcher on the influence of smoking on the development of asthma. The reason I chose the lung field was because of my family, who are all heavy smokers. I was the only one who did not smoke and found that annoying at the time. So I was motivated to do research in this area to tell them how bad smoking is.

However, the first studies that I did regarding the effect of smoking on the development of asthma in lab animals showed that mice who did smoke and suffered from asthma had fewer symptoms. This eventually was published because there was quite a logical reason for the results. Asthma already has an inflammation reaction ongoing, the smoke is so toxic that it reduces the inflammation. I was quite afraid that the tobacco 18



industry would offer me huge contracts to promote them. :) The reason why I especially like the lung is the fact that there is a clear connection with the patient. I prefer a direct correlation between my work and the effect on the patient. That is the main reason why I like pharmacology, especially translational pharmacology. Nowadays I am back at the Pharmacy department of the Rijksuniversiteit Groningen as a teacher and researcher. I find it very enjoyable to be back at Pharmacy and to see how the study had changed over the years or how some things stayed the same.

### **Can you give a little insight into your average working day?**

During COVID-19 times it is mostly sitting behind a screen from 9 to 5. Therefore I have bought a fancy-schmancy “desk bike” so I get some exercise while sitting behind my desk. Mostly, I begin around 8:45 in the morning, and around 9:00 the first meeting is scheduled. Mostly, my day is full of meetings. This can be with PhD students, postdocs or fellow colleagues. In most meetings, I’ll discuss the results of executed studies, “what do the results mean?”, and how to improve things in the future are very important things in the academic world. As a member of GRIAC (Groningen Research Institute for Asthma and COPD), I have a lot of meetings with lung pathologists, physiologists or other people that are involved in the lung field, mostly from the UMCG. You can find me occasionally at the lab, to explain things to PhD students or postdocs. My speciality is flow cytometry, a technique that requires months of fine-tuning and also the analysis is not particularly easy. A couple of years ago I made a machine that was missing in the laboratory for analyzing tissue. The tissue needed to be embedded in paraffin to slice very thin pieces. The machine that normally embeds the tissue in Paraffin was very expensive, so I thought to myself: “What a waste, I can do this by myself!” So during the Christmas holiday I made one myself from a fryer with a little tap on top and I am glad to say that it is still working. In addition, when laboratory animals are used I am occasionally in the lab to teach how to dissect animals and how to treat organs after they’re dissected. Working in the lab is for me the icing on the cake.

### **Do you consider it easy to keep a healthy private/work situation? What do you do to achieve it?**

NO!! It is very complicated, because I like my work and thereby I spend a lot (sometimes too much) time on it. I feel responsible to do something, for example, when educating students I feel obligated to do it right for the next generation. To think well about what I teach, results in that I am very busy with education and that the research is mostly done in my spare time. I don’t really mind it because I like what I do, my private life and work are kind of melted together. Besides work, I like to play sports a lot! Biking, rowing, running, swimming and ice-skating, whatever can be done. It is really my way to relax because I cannot sit still and do nothing.

### **What is your advice for a bachelor/master Pharmacy student?**

Am I now obligated to say something profound?....

Well, I think that you should always follow your heart, regarding your career. Because we have to work for a very long time, if you do something you like, is it much more pleasant than doing something purely for a huge salary. Try to expose yourself to new challenges, in that way you’ll stay young.

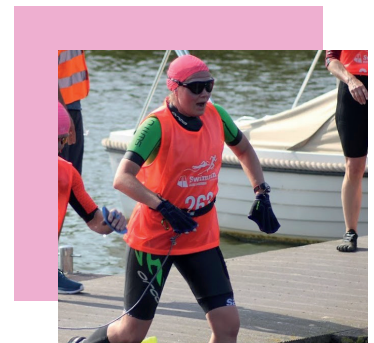
“It’s better to regret the things you’ve done, than having regrets about the things you haven’t done.”

### **Which affection do you have with the Lustrum theme “Aurora Borealis”?**

I would really like to travel to Iceland or Lapland to see it in real life!

Two years ago we should have had a conference in Iceland about lung fibrosis and I thought: “Now is my chance!” But unfortunately, the pandemic started. At the moment I’m really trying to convince my family to go to Lapland during Christmas. In this way, we can do some skiing and see the northern lights at the same time. To stay at a huge ice hotel is also something I really fancy doing in the future.

If you look on the internet and search for images about northern lights and Lapland, the most beautiful things are passing by. Those cute little houses with specially made roof windows to see the northern lights.. Amazing!



## First-year Introduction Weekend



On the 11th and 12th of September, the First-year Introduction Weekend took place. After having spent the first week following online lectures and looking at our computer screens it was finally time for something, we all had been looking forward to: the First-year Introduction Weekend of P.S.! The first day started at 11:00. Everybody who participated was divided into groups which consisted out of six fellow first-year students and was led by two P.S. moms or dads. Every group started at a different point in the city to start a tour through Groningen. During this tour, we saw a lot of the beautiful city of Groningen and had the opportunity to meet all the committees of Pharmaciae Sacrum. In addition, the K.N.P.S.V. and Villa Volonté were present. After a committee had introduced themselves, they all had prepared a game. We played games like 'boter-kaas-en-eieren', 'wie ben ik', beer pong, stress pong and many more. In between all this, we had time to enjoy a packed lunch.



The most remarkable stop of the tour was at the pub, 't Vaatje, where we met the 140th board and heard the association song of P.S. for the first time. At 5 o'clock, all groups came together for the barbeque at Stadslab. Fortunately, the rain had stopped just on time! There was food enough, there were various salads, sauces, meat and most importantly: there were also enough drinks. After everybody had filled his or her belly the day ended, however not for everybody I heard.

On Sunday there was the opportunity to have a good sleep for those who needed to recover from the day before. ;) The day started at 14:00 and for some groups at 15:00 with an hour of bowling. There were quite a lot of talented people who managed to throw a lot of strikes and spares. On the other hand, some people only managed to throw the ball in the gut. After the bowling we went to Stadspark, where we played two nice games, 'flessenvoetbal' and dodgeball. With 'flessenvoetbal' we had to form pairs and try to shoot at the filled water bottles of other teams. After these games, the introduction weekend was over.

All in all, it was a fun weekend and we had a nice time with each other. Thanks to all the P.S. moms and dads, the committees, the board and everybody else who helped to organize this event.

Lotte Jansen





## Faculty Introduction Day



On Friday 3th of September, it was time for the Faculty Introduction Day. Around two o'clock my group and me started with the day at UMCG. My P.S. dads were Jesse and Joeri. Besides Jesse and Joeri, we had a group with eight people. Some guys and some girls. So we started at UMCG. Inside the UMCG we got a lot of information about our study. Some important people were telling us about Pharmacy and that was very nice and informative. After the information, we did a quiz. If you won the quiz your college money got paid back by ABN AMRO, but nobody in my group won. Then Jesse and Joeri gave us a tour through the UMCG but honestly, I forgot most of it because the UMCG is a huge maze. During the tour, we went by the boardroom where we ate some cookies, listened to a speech and watched the aquarium without a lobster because the lobster died recently. After the boardroom, we went to the bicycle storage to grab our bikes to cycle to the centre of Groningen and eat some pizza. Joeri called many restaurants but most were full or they just didn't want us or something. But, one pizzeria said yes. That was pizzeria Napoli so we ate a pizza and drank some beers at the pizzeria. When the pizza was in our stomach, a few group members went to another drink in a cafe. Unfortunately, I had to leave after the pizzas. I enjoyed the day, it was very informative but also very fun. I spoke to many other Pharmacy students which I hadn't before. So it was a successful day!

Greetings Rijk Wagenaar

## Lustrum Festival



Thursday the 27th of September, the Lustrum Festival took place at G.S.R. Aegir. Members of P.S. and plus ones were welcomed by the Lustrum Committee with a shot. Then everyone was chilling on the couches and drinking beers while enjoying the last rays of sunshine. A food truck was present to provide everyone with some fries and snacks. After that, everyone headed to the dance floor and had a great time. At around 22:00h, it was time for the Lustrum Committee to reveal the theme and colours for the Lustrum week. The Lustrum Committee made a very nice movie. In the movie, Anna gave birth to Faber; Xander en Charlotte woke up with a hangover at a cafe and Menno and Tijn were having difficulties with a calculation. When they solved the calculation, everyone came together to discuss the theme for the Lustrum. They looked back at movies from the last Dies committees. Xander had an idea and called everyone to go and look outside. At that moment, the amazing theme was revealed: 'Aurora BoreaLus, reunite under the Northern Lights!' Then a band was playing songs and light bars were thrown into the audience, which was a very nice sight. After that everyone was having some drinks, chatting or dancing until it was time to go home. In short, it was a very succusful party!

Love,  
Vera ten Cate

## First-year Lunch



On October the 5th, the First-year Lunch took place at Villa Volonté. It was fun to meet up with the other first-years. We don't see each other often because of the online classes. Villa Volonté is the medical faculty pub, where you can party every Tuesday, Thursday and Friday! When the first-years arrived, they were able to pick up their lab coat. The lab coat is needed for the practicals that are taking place later this year. This was not the only reason why all the first-years came to the lunch; the lunch was very important as well. Every student got a free and delicious knackwurst, a real delicacy that should be known by every student that lives in Groningen. The members of the board served the delicious knackwurst. The knackwurst is a small, brown, thin sausage that can be eaten cold or warm, on a bun or just as a snack. A good knackwurst should give a good snapping sound when eaten, this is where the name 'knack'wurst is originated from. When everyone finished their knackwurst and collected their lab coats, the lunch came to an end. But you could certainly say that it was a successful lunch.

Sjoerd Luijben

## Second-year Activity



Foreheads full of sweat, concentration at its peak, the ball slowly rolls towards the pins and... Yes! A strike. In my opinion the bowling activity, was a strike too. Finally, the second-years were able to really mingle after more than one year of separation and basic interaction via the internet. It was refreshing to see the familiar names, that I always saw coming in the BlackBoard sessions, finally getting a face. And in what way better to get to know each other than via a simple game of bowling. Surprising to see was that the average Pharmacy student is quite the experienced bowler, with top scores reaching around the 150 points. There also were some highlights like Twan being a real pro-bowler, tried throwing with two hands and successfully threw a strike with his left hand. The atmosphere was relaxed, so the fact that the bowling alley was falling apart did not spoil the fun. Everyone was still a bit recovering from the Monday before, since a lot of the attendees also do a committee. Some creative minds even grabbed a steel bowling ball-slide to aim the bowling ball precise to get the perfect strike. But besides fun, there was also room for a little competition. Afterwards, small groups buried the hatchet and went for a drink, already contemplating about the next activity. Aside from the activity itself being a success, I hope that this really brings the second-years more together as a group. Since it doesn't look like the university will do that for us. So I am looking forward to the next activity and hopefully even more second-years can fit that activity into their spare time.

Fabian Schaub



## EJC Party



At Thursday October the 21th there was a Halloween party in 'de Stokerij' organised by the First-years Committee. After standing in the line for the QR-code check, the evening could begin. The party began early, at 19:00, with "adtjes" and rounds of shut the box. Later in the evening, it was announced that there were 140 free beers available. So, after that it became very crowded and cozy at the bar. The funny thing was that only one woman was behind the bar and after the announcement, she had to take a lot of orders and tap lots of beers in no time. Many people joined the party and the general mood became even better. It became so crowded that even outside of 'de Stokerij', in 'De Brouwerij', P.S. members dressed in Halloween costumes were dancing and having fun. The most common Halloween outfit was a devil, but there were also many lab coats and white t-shirts covered in fake blood, fake coloured eye lenses, zombies and witches. The music was bad, which made it good, with lots of classics to sing along too. At one moment, around half past ten, everyone was already so drunk that we just clung onto each other and yelled along with the music. So, in short it was a very successful party filled with drinks and dances.

Esther Bijker

## Research Market



Last Thursday, October 21st, students from different years of the Bachelor's and Master's programme attended the research market. All were hoping to get information about the various pharmacy departments and their possible research projects. The programme started with a small introduction by Sybrand Zielhuis, followed by general information about performing a research project for the Pharmacy and MPS programme. It was nice to get more details about the contract you must make and what the different possibilities are. Also, the study advisors gave a presentation and in addition, two PhD researches were presented.

After the general introduction and information sessions, it was time to get started. The following base units were present: Drug Design, Pharmacotherapy, - Epidemiology & Economics, Nanomedicine & Drug Targeting, Chemical and Pharmaceutical Biology, Molecular Pharmacology and Pharmaceutical Analysis. You could attend the base units you preferred and had the opportunity to ask them all kinds of questions. It was very interesting to hear what the base units focused on and what the possibilities within the base units were. The session was recorded and the presentations will be uploaded very soon. So if you have missed the session, it is recommended to look into these.

I want to thank all the speakers for the informative sessions and hope many students have found a base unit of interest and possible research project.

Lots of love,  
Michelle

P.  
S.

A  
C  
T  
I  
V  
I  
T  
I  
E  
S





# Samen de toekomst in

**Synchronizing Healthcare**

CompuGroup Medical is specialist eerstelijns zorgautomatisering en ondersteunt Pharmaciae Sacrum. Samen met de apothekers van de toekomst werken we aan innovatie in de zorg. [www.cgm.com/nl](http://www.cgm.com/nl)



**CompuGroup  
Medical**







# Puzzle Page

## Sudoku

				9				
		5	7					
	9					3	5	8
9			2	3				
2	5							
4				1			8	
6						1	4	
		1	3	4				
			6	8		2		

## Year 1



Ids Bonnema and Sude Al

## Year 2



Lamys Fawzy and Kai Timmer

## Year 3



Emma van Rijn and Sina Nikbahkt

## Year 4



Cees Boone and Floris Hofman

## Year 5



Evelien Dijkstra and Myrthe Boerrigter

## Year 6



Laura Schot, Remco Prins and Nienke Mones

## MPS



Year 1: Bas Baartmans  
Year 2: Isa de Bier



## Camping Committee



Dear P.S.ers,

We are excited to present ourselves as the new Camping Committee. After two turbulent years, without any camping, alpacas nor long cycling tours, it's finally time to gather your tents and to celebrate the end of the academic year in Luddeweer!

Our lovely praeses this year is Katie, she is 22 years old. During the parties at JAK, you will most definitely find her at the bar or on the dance floor and the next morning chilling with the alpacas.

Our ab-actis is Carlijn, she is 19 years old and comes from the lovely Rotterdam. She's a welcoming cozy girl, who will make sure everyone will stay hydrated during the camp.

Our fellow camp organiser Martijn, and most appreciated quaestor, is the charming guy with the long sentences and sharp hair. He will make sure that you all will stay fit and will detox from the evening activities.

Our assessor I, Anneli, is one of a kind. She's an active girl who isn't afraid of drinking a beer and is the perfect guide for the city of Groningen, as she is a local citizen.

Last but not least is our assessor II, Ids, who will keep everyone entertained and keeps our shot glasses filled with all the wonders found in his kitchen.

Together we look forward to organising this amazing camp for all of you and we hope to see all of you there!

Lots of love,  
Camping Committee 2021-2022

## Charity, Entertainment and Sports Committee



Dear P.S.ers,

We are the LOS: the Charity, Entertainment and Sports Committee. During this year, we will organize three activities. We will organize an entertaining activity, which will be fun for all the P.S.ers. We also organize a sports activity, where we will sport and have a lot of fun as well. Last, but not least, we will collect money for a charity.

Our committee consists of five members, who are looking forward to organize these activities for you. Let's introduce ourselves:

Let's start with our praeses, Susannah! She loves to chitchat wherever you may see her. You can find her rowing in a boat or drinking wine at a terrace. Our ab-actis Julia is very easygoing and is always up for a beer or two. You will probably find her a lot in the exam halls, because she just can't manage to pass PAA. Then we have our quaestor: Fabian. He loves to joke around, so if you need a laugh: just knock on his door. Then you have our sweet 'assessoraat': Lieke and Fedde. Lieke is our assessor I, and is very enthusiastic and always up to play a game. She will put a smile on your face with her energy! Fedde, our assessor II, may be last but is definitely not the least! With his cheerful mindset and humor, one can not miss this great committee member.

Love,  
Barst LOS

## Social Media Committee



Dear lovely P.S.ers,

We are the SoMeCo, Social Media Committee, and we were asked to introduce ourselves. Even though we are still in the middle of getting to know each other, we already have gotten a good impression of how this year is going to be as a committee. Together with Twan, we will be responsible for the socials of P.S. for the upcoming year.

First, we have Morgan, the praeses of the group. Her focus is to delegate the group and even when she had one drink too many, she is very good at this. Then we have Eline, the ab-actis. Eline is an innocent looking blonde girl from the beautiful Bloemendaal, but when you get to know her, nothing is less true. Then we have our quaestor, Allon. He is responsible for our own committee playlist. However, we should mention this is a terrible playlist to play during the daytime. Then we have our two new first-year committee members, Sjoerd and Rosan. Our assessor I is Rosan. Rosan is the stereotypical girl from the village of Hairs (Haren). She plays hockey and loves to wear a hairclip. Then we have Sjoerd, the assessor II. As his function indicates, Sjoerd loves to drink a beer and especially when we play 'paardenrace' he really lives up to our expectations of an assessor II.

Love,  
Morgan, Eline, Allon, Rosan and Sjoerd

## Committee Pharmaceutical Sciences "SSS"



Dear fellow Pharmacy students,

We are the Committee Pharmaceutical Sciences "SSS" (Sur Sum Scutra). We organize two symposia every year, the First-year Symposium for the freshmen students and the symposium for the senior students. During these symposia, experts will speak about their field of interest and fascinate you about a specific interesting scientific theme. These activities are besides informative, also a fun way to spend more time with fellow students. Moreover, you get an overview of the different future job possibilities, which are related to our study. We usually include a free lunch as well, so it is worth applying for the symposium. We also organise the BBB (National Company Visit), this is a two-day trip to a city in the Netherlands where we visit several pharmaceutical companies and learn a lot about the industry. During the National Company Visit, there is also time for some social and fun activities. This trip is really fun and educational. Our committee is complete and consists of five people. We will be installed during the General Members' Meeting in October. This year the committee is formed by Maud Hulsbeek (praeses), Femke Askamp (ab-actis), Jesse Mulder (quaestor), Lotte Jansen (assessor I) and Rijk Wagenaar (assessor II). We hope to organize informative and fun activities which can take place physical despite the restrictions caused by the coronavirus.

We are looking forward to organising some fun and very interesting activities and we hope to see you all there!

Kind regards,  
Committee Pharmaceutical Sciences "SSS"



## First-year Committee



Dear P.S.ers,

We are the new First-years Committee 2021-2022. Our committee consists of six members. First, we start with our praeses Femke Slob. She is 18 years old and the boss of our committee. Femke comes from Utrecht and likes to play hockey in her spare time. She lives together with our assessor III, Carmen Willems. They know each other from the hockeyclub in Utrecht and now they play together in Groningen. Our ab-actis is Sarah Wierda. She is 18 years old and assists Femke wherever she can. She is the local of our committee because she comes from Haren. Furthermore, we have Jasper Martens. He is 19 years old and the quaestor of our committee. He takes care of our expenses. He is almost an international student because everybody thinks he comes from Belgium due to his dialect. Instead, he comes from the beautiful city of Heerlen in the south of the Netherlands.

Our assessor I is Robin Doldersum. He is 19 years old and comes from Drenthe and works at Plopsaland Coevorden where he found his perfect role as 'Kabouter Plop'.

Our assessor II is Koen Bremmer. He is the youngest member of our committee and comes from the beautiful place Ommen, near to Zwolle.

After a boring corona year, we are ready to organize four amazing parties this year.

We hope to see you soon,

Hugs and kisses the EJC!

## Committee Cup

Committees, can we have your attention! The battle has begun! You can now win the Committee Cup by attending a number of activities. You can earn up to two points during some activities. One point for presence and one point for clothing. The committee needs to take a picture with the P.S.camera. The committee may also take a selfie with their own camera/phone. There are some conditions attached to the photos.

Pictures taken with a camera other than the P.S.camera must be sent to [board@psgroningen.nl](mailto:board@psgroningen.nl) within three (working) days.

Only committee members should be on the picture.

The photo must show that it has been taken during the activity.

Committee clothing must be clearly visible.

Points are awarded to committees during the following activities:

General Members' Meeting

P.S. Social Drink

EJC Parties

End-of-Schoolyear Camp

Introduction Party of the Faculty Introduction Day

All three activities of the Charity, Entertainment and Sports Committee

AlDi party/AILus party

Dies/Lustrum Reception

Dies/Lustrum Cultural Evening

Dies/Lustrum Outdoor Activity

Dies/Lustrum Gala Dinner

Dies/Lustrum Gala Ball

At October 26th, the new round of the Committee Cup has started, so to all committees. Join the Committee Cup and win the trophy!











14 questions with...

# Anieke Hofhuis

## Quaestor of the Board

**What is your hometown?**

My hometown is Tubbergen, in the beautiful Twente.

**When is your birthday?**

January the 7th, 1999

**How do you start your day?**

I start my day with some music or a series while making myself ready for the day.

**What is your function?**

I am the quaestor of the board.

**How would you define yourself in three words?**

Precise, responsible, helpful

**What makes you smile the most?**

Having a drink with friends or family.

**What are the three things you can't live without?**

My bed, cheese and as a quaestor of course my calculator. :)

**What is the most adventurous thing you have done in your life?**

Flying in Slovakia in a very small plane with propellers instead of engines.

**What is your favorite movie of the last five years?**

All comedy movies, I like movies that make me laugh.

**What is heavily played on your music playlist right now?**

good 4 u – Olivia Rodrigo

**What is your favorite cocktail?**

Moscow mule.

**What is one thing you have always wanted to try, but were too afraid of?**

I've always wanted to bungee jump.

**What is one city you have always dreamed of travelling to?**

Santorini in Greece.

**What is your favorite fast food order?**

McChicken medium menu!





# Graduates

## Pharmacy:

D. Berends  
L. Bosma  
C.O. Botterman  
C.P. Bouman  
J.M. van Boven  
J. van Broekhuizen  
M. Dekens  
E. Demirkol  
E. Emmens  
J.A.M. Groeneveld  
T. Gunnink  
S. Haarsma  
S. Haddad  
C. Hazelhoff  
A. Hijlkema  
I. Hulsbeek  
P. Jongsma  
M. Jousma  
M. van der Klei  
L. van der Koog  
S. Kos  
G. von Kreijfelt  
M. Külahli  
J. Langeland  
I.J. van der Linden  
J. Lubberts  
H. Majied  
R. Manouk  
S. Mardany  
S. Marongiu  
M. Mekhaeil  
L. Nugteren  
N. Out

E. Pierik  
S. Posthumus  
I. Potma  
T.M. te Riele  
F.M.J. Roeterink  
L.E.M. van Rooi  
H. Schneider  
R.A. Schut  
I.E. ten Seldam  
C. Sikking  
M. van der Slijk  
C. Smit  
S. Stoffers  
M. Tjioe  
A. in het Veld  
C. van der Velde  
J. Verwoerd  
L. Verzijde  
L. Vogelzang  
A.L. de Vries  
F. Wagenvoort  
M. Wakker  
N.A. Westendorp  
M. de Wit  
D. Zillen  
C. Zwijnenburg



# Activity list

## January

P.S. Social Drink - January 11  
SPITS Excursion – January 13  
Bachelor Activity – January 18  
Mosadex Lunch Lecture – January 20  
General Members' Meeting – January 25

## February

Masteractivity – February 4  
SCP Meeting – February 8  
Lustrum Opening – February 9  
Lustrum Opening Party – February 9  
Lustrum Outdoor Day – February 12  
Midlustrum Party – February 14  
Lustrum Theatre - February 16, 17 & 18  
Lustrum Gala Dinner - February 19

## March

P.S. Social Drink – March 1  
Career Day - March 4  
First years Parents Day - March 11

BENU Pharmacy training - January 12 & 26  
The possibilities of Pharmacy – January 17  
EJC Party – January 18  
Dart Tournament – January 20

Committee Carrousel – February 7  
P.S. Social Drink – February 8  
Lustrum Reception – February 9  
Lustrum Sport Activity – February 11  
Lustrum Rally – February 13  
Lustrum Symposium – February 15  
Reunion Members Day - February 19  
Lustrum Gala Ball - February 19

LOS Sports Night – March 2  
Beer Cantus - March 9

# Colophon

## Editorial Committee

Sharon Koers  
Wietske van der Bijl  
Jens Lammers  
Emma Dorenbos  
Kai Timmer  
Juliette Meijers

## Ab-actiaat

Wietske van der Bijl  
Bankastraat 26A  
9715 CC Groningen  
Phone: +31 6 12 89 20 02  
Email: redactie2122groningen@gmail.com

## Printing office

PerfectBook

## Circulation size

1130

## Thanks to:

140th board of G.F.S.V. "Pharmaciae Sacrum"  
Matthijs van der Kraats, Arnika Pehl, Barbro Melgert, Lotte Jansen, Rijk Wagenaar, Vera ten Cate, Ids Bonnema, Sude Al, Lamys Fawzy, Kai Timmer, Emma van Rijn, Sina Nikbahkt, Floris Hofman, Cees Boone, Evelien Dijkstra, Myrthe Boerrigter, Laura Schot, Remco Prins, Nienke Mones, Bas Baartmans, Camping Committee, Charity, Entertainment and Sports Committee, Social media Committee, Committee Pharmaceutical sciences "SSS", First-year Committee, Anieke Hofhuis





HET APOTHEEKLOKET 



## Het TOP-programma voor de ambitieuze ApIOS



Wil jij een **stap extra** zetten tijdens je **specialisatie**?

Het TOP-programma  
heeft **per direct** plekken  
beschikbaar in **Den Bosch!**



**Samen investeren in jouw toekomst?**

*Solliciteer direct!*



Het Apotheekloket is een initiatief van Mosadex Groep, Service Apotheek en NAPCO

**MOSADDEX**  
groep