

DARE TO 06 THINK

DECEMBER • 2014



COMMUNITY MAGAZINE OF GHEENT UNIVERSITY

0022



SAY YES TO THE KNOWLEDGE ECONOMY!

STEM: Ghent University takes up the challenge

LEARNING SKILLS, BUT LEARNING TO REFLECT AS WELL

SKILLS LAB AND DOCTOR-MENTORS



LEARNING TO THINK ABOUT EXPERIENCES

The Skills lab helps students of the Faculty of Medicine and Health Sciences master a wide variety of medical-clinical and technical skills – from giving injections and bandaging wounds to gynaecological examinations and consultation management. But they also learn to reflect collectively on their experiences under the caption 'Professional Conduct'.

'A doctor-mentor guides a group of nine medical students throughout their education and training', says **Professor Jan Reniers**. 'They have four meetings in each academic year. In the first session, they reflect on why they chose to study medicine, and after their GP internship, they make a presentation on one consultation that made a particular impression on them. After completing their geriatric care internship in the 2nd year of their degree programme, they share their experiences with the indigent, the gravely ill or terminal patients. They also use lectures, films or books as a basis for discussing medical-ethical issues. The doctor-mentor acts as a role model and confidant. It works really well: I notice that my group, in its third year, is now speaking with far more maturity than before.'

'The project was launched in 2012. Since that time, 100 well-trained doctor-mentors, all affiliated to Ghent University Hospital and Ghent University, have emerged. They prepare for the sessions by employing the same process of reflection in small groups. Their responses are extremely positive: some even report that they apply the same reflection techniques in the workplace.'



Professor Jan Reniers

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TABLE OF CONTENTS



06 At home in the world

Ghent University streamlines and intensifies
its internationalisation policy



14 (Student) life as it is

Role models help motivate and sensitise!





24 Historians are also looking into the future!

Alumnus **Daan Schalck** is at the helm of the Port of Ghent – a historian who loves numbers.

AND MORE

13 In brief

19 UNIVERSE

An **Hermans** is 'mad about plants'

20 CHANGING WORLD

STEM for the knowledge economy

Stimulating young people to take up science and technology: Ghent University participates

28 WHAT DO YOU THINK?

Uber and Airbnb: what should we do with them?

32 DARING TO THINK

Bijloke beer: soon to be launched in Cambodia

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GHENT UNIVERSITY BECOMES MORE INTERNATIONAL

Internationalisation policy is intensified

Thirty years ago, Ghent University was the Belgian pioneer for the Erasmus programme. All kinds of new international activities and exchanges have mushroomed in the recent past. It is high time to streamline and intensify the various offerings.

Professor Magda Vincx has been the internationalisation coordinator at Ghent University since March 2014. She is assisted by a group of experts and five work groups: together, they are 100 persons from all the departments of the university. As a group, their inspired efforts are directed towards the integrated internationalisation policy plan that lays down guidelines for the next few years.

'Our primary aim is to harmonise and open up the many international activities at Ghent University', she says. 'Users must have a better understanding of what is currently on offer.

And because you can't do everything equally well, we also want to make choices.'

Many Ghent University students go to foreign universities. How can you be sure that they receive a proper education?

'You can't of course rule out that a student selects a country or region rather than the best education programme. We want to assess more clearly and more objectively the quality that international partners deliver. The QuATIC quality database was created for this very purpose: it applies several measurable indicators to determine which European partner universities deliver high quality, in which domains. We now want to extend this database to enable exchanges with other parts of the world.'

Does it also aim to screen the students themselves more effectively?

'The Top 100 international universities – of which Ghent University is one – sometimes attract students interested in the prestige value rather than in the educational programmes



Crossing borders more smoothly

By 2015, every program will have a mobility window: students will have an opportunity to spend a semester studying at a partner university. In contrast to Erasmus, Ghent University will itself screen the programs in advance: in short, it is a Ghent program - conducted abroad.





Professor Lieve Gheysen,
Department
of Molecular
Biotechnology



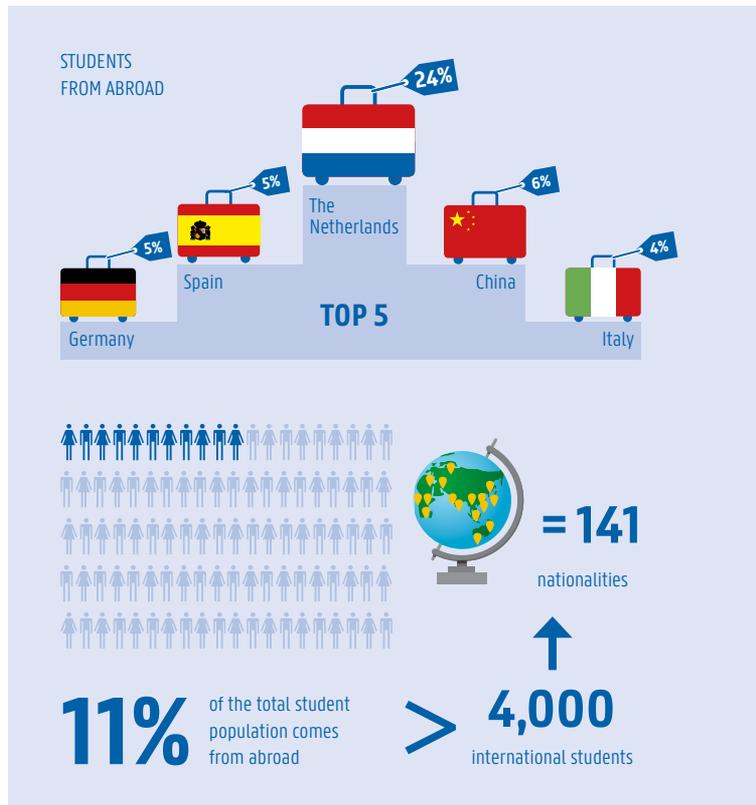
'Foreigners should be made to feel at home'

'The campus of the Faculty of Bioscience Engineering is one of the most international campuses of Ghent University. This is partly due to the subject matter: topics like nutrition or drought issues are hot topics in developing countries. But we also make a special effort to ensure that international students feel at home here. Each year, we provide an official welcome moment, where we explain the culture and peripheral activities, etc. We also have a well-trained faculty service on internationalisation.'

'At the start of an academic year, you observe Belgians tending to sit on one side of the room, while international students go to the other. I make sure that mixed groups are created in which foreigners can showcase their knowledge. If only because they can obtain information from Russian websites, for example.'

'Not all students have the same level of basic knowledge. With this in mind, I have made videos explaining basic must-have knowledge. If a student misses something, I explain it in brief and then refer him to the video. This ensures that everyone stays on track.'

HOW INTERNATIONAL IS GHEENT UNIVERSITY?



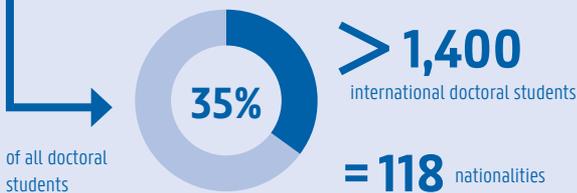
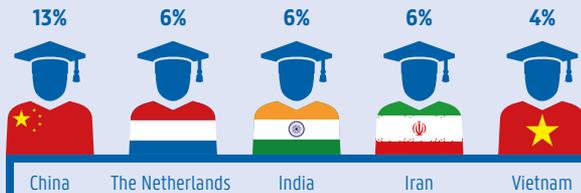
- ▶ available there. Conversely, we also primarily want to send out better, more highly motivated students. The selection mechanisms are already in place, but there is scope to apply them more widely.'

Closer collaboration with other universities is also desirable. 'Best practices are already in place, but they have to penetrate more widely. At present, there is already a partnership between four European universities, the U4: Ghent, Groningen, Göttingen and Uppsala. The universities harmonise their programmes and structures with each other much better. This should also be possible with other universities for specific subjects. This will give our students the best guarantee of high quality. For example, they could then commence their studies in Ghent, complete their second year in Portugal, and submit their thesis in Germany, and yet be absolutely certain that content-wise,

(figures for academic year 2013-2014)

DOCTORAL STUDENTS FROM ABROAD

TOP 5



INTERNATIONAL EMPLOYEES approx. 1,000



their education has been no different from someone who has done the entire course in Ghent.

So Ghent University students could also study in a partner university?

'We want to include a mobility window in each degree programme by next year: the option of studying for one semester at a partner university, for example. The difference with Erasmus is that we would also be participating in organising the educational programmes ourselves. Thus instead of being a foreign program that we will recognise later, it will be a Ghent University program for which a portion of the instruction will be imparted at a foreign institution.'

By 2020, around 25% of Ghent University students will complete their education abroad. And the others?

'The internationalisation@home programme is intended to



Professor Eva Brems,
Department of
European, Public and
International Law

'English thesis rejected'

'Human rights are by definition international, but in the Faculty of Law, there are also colleagues who are less active internationally. If your sole focus is on Belgian law you are less likely to feel the need for this. You do not need to internationalise just to internationalise. If you provide sufficient *incentives* to people who want it, you can come a long way.'

'However, I still feel that evolution cannot be stopped. Human rights were still viewed from a very "Belgian" perspective twenty years ago. There were hardly any international conferences and when I wanted to write my thesis in English, my faculty council refused to let me do so. That situation would be unimaginable now.'

'Personally, I do feel that more international colleagues should join our ranks. Not that Ghent is an exception: when recruiting, all Flemish universities still have a restrictive focus. They definitely have highly competent people, but they all have similar profiles. And what applies to other organisations also applies to the university: diversity generates a positive dynamic and a high level of creativity.'



- ▶ provide persons who remain at home with an opportunity to acquire international experience. For example, by setting up a 'buddy' relationship with foreign students who come here. Or by following English language courses. By the next academic year, your efforts will be stated separately on your diploma so that you can prove that you actually have international experience.'

Is internationalisation a must for academic staff?

'Most researchers are already working internationally and have built up their own network. We want to motivate them to engage in international education projects as well. This would greatly increase the mobility of foreign students to Ghent. And that would also strengthen the international image of the "brand" that Ghent University has acquired.'



Andreas Declercq,
civil engineering student

'Students: let us hear from you!'

'I am a member of BEST – the Board of European Students of Technology. We and our European partners jointly organise exchange courses coupled with a wide variety of social activities during the summer.'

'The courses are quite short: 10 to maximum 14 days. You could see it as giving you a foretaste of Erasmus: it takes you out of your comfort zone, and you get to know other people and cultures. I don't know how, but although engineers with an international mindset are highly sought after, not many of the

students in our faculty seem keen to take on a foreign adventure. Is the threshold still too high? By contrast: most of those who do take that step are extremely enthusiastic about it.'

'It would help to integrate internationalisation more into the lectures, I think. There is still an excessively Belgian focus in everything at present. A more international perspective and more cooperation with foreign universities would certainly not be a bad thing. But ultimately it is the students who have to take the initiative.'

19%

of Ghent University students graduated with international experience.



25%

This must be 25% by 2020.

29

English-language master courses

Streamlining the internationalisation policy costs money and energy. Is it all worth it?

'Most certainly. A recent study has proved that graduates with international experiences do much better in the labour market. The intercultural pool in which the students are immersed is an experience that will remain with them for life. Also keep in mind that many foreign programmes offer greatly enriching content. Someone who wants to study my specialty - marine biology, and to study large-scale oceanographic models, has to go to Scandinavia. In Belgium, there is less expertise in this subject area.

'The advantages for the university as a whole as well cannot be overestimated. When you are on your own little island, it is easy to believe that you are doing very well. But it always improves quality when you measure yourself against your international peers.'



WANT TO KNOW MORE?

www.UGent.be/en/ghentuniv/internationalisation



Professor Jan Philippé,
Faculty of Medicine and Health Sciences

'Global Health amongst Flemish interns'

'In their penultimate year, many medical students do a European internship for three months - and often overseas in their final year. I don't think internationalisation should be taken lightly. Students who want to, say, go to Portugal or Mozambique, must acquire a strong foundation in Portuguese before they leave. Students who would like to go abroad must also undergo a preparatory course and successfully complete their exams. On the other hand, students who come here must at least speak an acceptable level of English. But once you satisfy the basic requirements, you may be amazed

at the added value that foreign students can bring. So yes, it requires a certain investment and takes a lot of work, but it is certainly worth the effort.'

'We are also launching new initiatives. For example, our colleague Olivier Degomme is coordinating the launch of an international advanced master's programme on Global Health, in close collaboration with other faculties and all Flemish universities. This is an important international focus and Flanders cannot remain behind.'

#UGent

WWW.SCIENCEMUSEUM.UGENT.BE

Arno De Wispelaere
5:03 PM - 16th Oct 2014

Perhaps the best concealed museum in Ghent.
Yet absolutely worth a visit. #ugent

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SARTON CHAIR

Ghent University alumnus George Sarton (1884-1956) made his career in the United States, and contributed to laying the foundation for scientific history as a discipline. Ghent University decided to establish the Sarton Chair for the History of Sciences in 1984. Each year, a Sarton Chair holder and various Sarton medal winners are selected and invited to give lectures.

The 29th Sarton Chair goes to the renowned science historian Professor Roy M. MacLeod (University of Sydney), proposed by Professors Peter Van Nuffelen and Christophe Verbruggen.

In his inaugural address, Professor MacLeod speaks about the attitude of scientists during the period 1914-1919.

The lecture on *The Scientists Go to War: Community and Conscience, 1914-1919* will be held on Thursday, 11th December 2014 at 16.00 hours, in the Aula (Voldersstraat 9, Gent). Following this the Sarton committee will hold a reception. Would you like to attend? Sign up in advance with Rita.Malfliet@UGent.be

WWW.SARTONCHAIR.UGENT.BE



MISSION TO INDIA

Ghent University's India Platform has been building bridges between India and Europe since 2008, and offers a point of contact for a variety of collaborative initiatives - in science and technology, among others. From 13th to 21st December, the India Platform will focus on healthcare: it will organise a 'Health Care Ventures Visit' for clinicians, professionals, researchers and healthcare companies - the first of its kind in Europe. It will survey Delhi and Bangalore for opportunities to collaborate with local actors. India has been developing rapidly and its growing middle class makes high quality health crucially important - for example the e-Health and Mobile Health Care initiatives represent a strong innovative impetus. The India Platform aims to provide European professionals with opportunities to familiarise themselves with healthcare in India, help them explore the market for care innovation and medical devices, and to bring them into contact with Indian colleagues - in the hope that this will lead to fruitful collaborations in the future.

WWW.INDIA-PLATFORM.ORG
WWW.VENTURESVISIT.BE





(STUDENT) LIFE AS IT IS

Four role models have their say

During their final year, secondary school students are bombarded with information about selecting study streams and about study streams themselves. But what is it really like to go to college? You hear about it from friends, brothers and sisters - and from role models.

Can you ask your professor questions? What is group work like? Where can I find help to do better in my study? Such questions trouble many final year students. If you have no friends, brothers or sisters, or don't know who to talk to, these questions will continue to trouble you.

their experiences as a student and about student life, they sensitise and motivate, and talk about all kinds of support initiatives - tutoring, student psychologists, language support, the mentoring programme.

WOULD YOU LIKE TO BE A ROLE MODEL?

You can always be a role model, even during the current academic year. Please visit www.UGent.be/diversiteitengender and read all about it under the Role Model section.

Focus on sensitisation

The Ghent University policy cell on Diversity and Gender has launched a role model project for this reason. This project is a collaborative effort with HoGent, the Arteveldehogeschool and the Provincie Oost-Vlaanderen. Role models are students who speak in at least three secondary schools each year. They mainly visit schools with a lot of GOK (equal educational opportunities) students, who may have some initial hesitation about taking up higher studies. They speak of

Fun time

As a role model, you have robust preparatory training and support. You will undergo training on the structure of higher education, interview techniques and intercultural communication. You always visit schools accompanied by a few fellow role models and role model project employees. They also foster positive group dynamics. You will be issued a certificate as proof of your commitment.



1

Sofie Van Lijsebeth

First-year Master's student
in Psychology

***'I also
benefited a
lot from it'***

I saw a poster on the role model project and I applied for it: I not only found the project very cool, but also extremely useful. I had studied physiotherapy before I took up Psychology. That was not a good choice for me. This is what I want to tell final year students: make thorough enquiries and make sure that you fully understand the course and everything about it.

I do five classes per school year. The questions I am asked are very varied: the questions are about the large classrooms, contact with professors, exams, the credit system, etc. Usually we talk with final year students for whom further studies are not such an obvious choice. I always emphasise that you can achieve a lot if you are highly motivated. And in the BSO (vocational secondary education)

and TSO (technical secondary education), I also explain that they can pursue a professional degree. We receive excellent preparation and support. When we go into a school, we are accompanied by staff members from the policy cell for Diversity and Gender. During basic training, you are informed about the structure of higher education, but you will also learn to communicate with groups and about intercultural communication, for example. Frankly I have also grown on a personal level since I became a role model. I am much more comfortable speaking in public and it has made me more assertive. The questions and stories of the students are fascinating, and occasionally we go bowling or to the movies with other role models. It is a nice group and you get to know many people, from other faculties as well.





2

Robin Convents

Second-year Master's student
in Biomedical Sciences

***'A different
perspective
enriches you'***

I knew very early on that I would be going to the university, but at a personal level I find it enriching to go and speak to students for whom this choice is not so obvious. I better understand their fears and concerns from their perspective, and I am also better able to deal with them. Are higher studies expensive? Yes, but there are scholarships. Do you really have to work hard? Yes, but there are people to help you learn how to plan, and counsellors to support you. The intention is not to help final year students decide on higher studies: they have other channels for that. Our focus is on telling them how higher education works and about our experience of it. Many final-year students think that there are two groups of students: hard workers who never come out of their shells, and party animals. I try to nuance that a little.

Students who are clear about what they want to study have already searched online about what they want to know. With final year students who are full of doubts, you have to try to draw them out so that they are encouraged to ask questions. You then try to give the students the widest possible range of information – with the focus on motivating them.

You are expected to make three class visits every school year – you may of course make more. You select the visits that work best for you. There are also no lengthy training sessions, and there is a lot happening at a personal level as well: public speaking is a skill that will be useful to everyone.





3

Seda Tapmaz
Second-year Master's
student in Law

***'The honest,
unvarnished
truth'***

What do students ask us? Whether you can speak to and approach professors easily, how the learning credit system works, whether the exams are really so tough, or whether you still have enough free time and holidays, etc.

I always speak about my own experiences, as a Turkish student and give them as honest a picture of student life as possible – in particular, with no window dressing: yes, it is true that you have to work really hard and that social life does have to take a back seat. I also tell them that their circle of friends will play an important role. Friends can motivate you, but unfortunately they can also drag you down in a negative spiral. If you have the ability to study, then I think you should make the most of whatever

opportunities you have. I am happy that my parents, my sister and my brothers support me and I do not want to disappoint them. That is another message that I pass on to final-year students: make thorough enquiries, make a conscious and well-considered choice, and put in your best efforts.

Thanks to the role model project, I have also got to know students from other faculties – they are now good friends. We also learned interview techniques as part of the project, which will be very useful in later life. Finally, I think it a great thing that we are offered training courses, that we can participate in fun activities together, and that at the end of it we are even awarded a certificate: a sign that Ghent University appreciates our efforts.



4

Baudoin Mena Sebu

Second-year Bachelor's student in African Languages and Cultures

'I want to give something back'

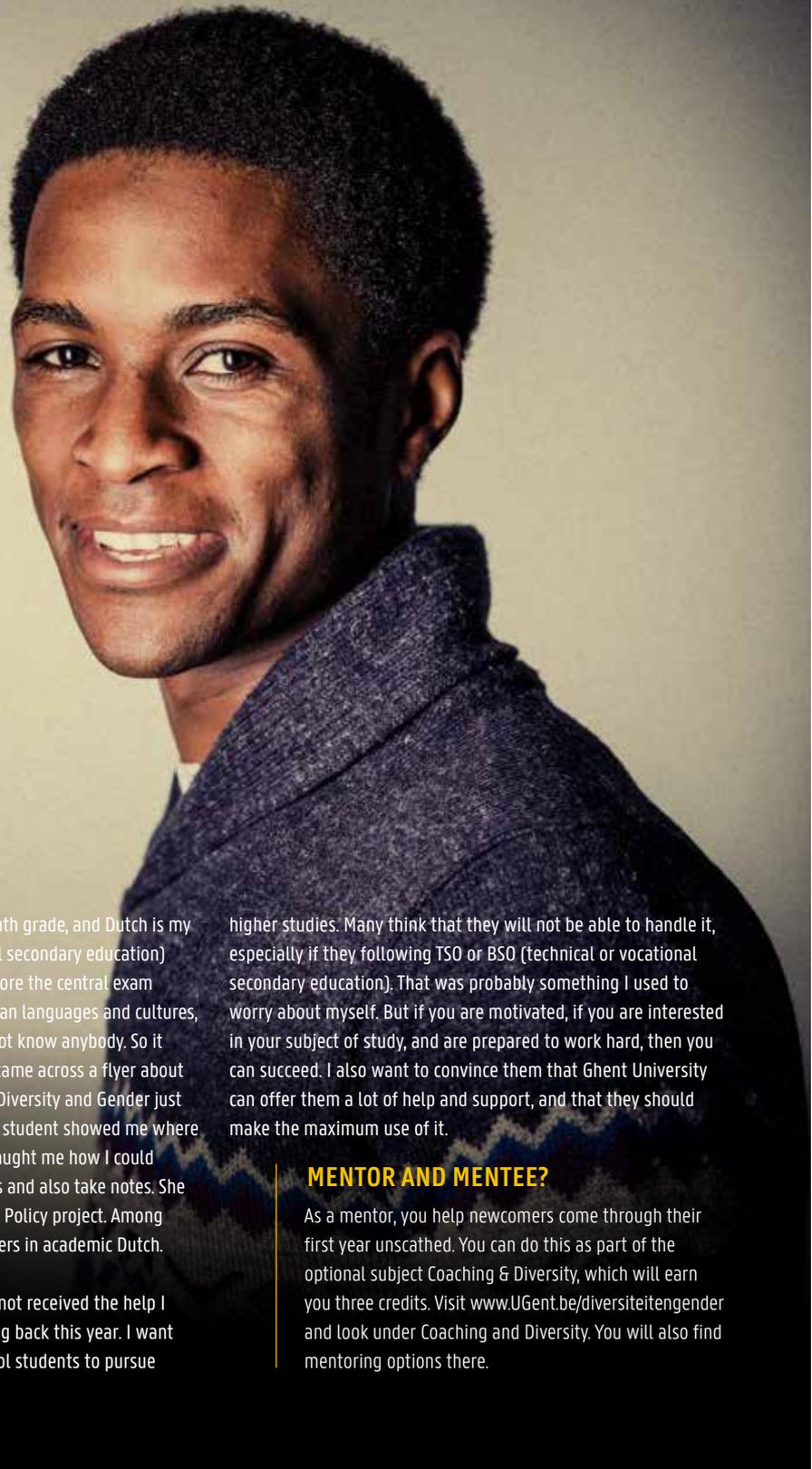
I left the Congo for Antwerp in the seventh grade, and Dutch is my second language. I did my TSO (technical secondary education) and I got my degree after appearing before the central exam committee. Since I wanted to study African languages and cultures, I had to go to Ghent where I really did not know anybody. So it wasn't at all easy for me. Fortunately, I came across a flyer about the mentoring project of the Policy cell Diversity and Gender just when I was registering. An older History student showed me where to go, supported me, and for example, taught me how I could simultaneously pay attention to lectures and also take notes. She also drew my attention to the Language Policy project. Among other things, I learned how to write papers in academic Dutch.

I would not be where I am now if I had not received the help I did. That is why I want to give something back this year. I want to encourage final year secondary school students to pursue

higher studies. Many think that they will not be able to handle it, especially if they following TSO or BSO (technical or vocational secondary education). That was probably something I used to worry about myself. But if you are motivated, if you are interested in your subject of study, and are prepared to work hard, then you can succeed. I also want to convince them that Ghent University can offer them a lot of help and support, and that they should make the maximum use of it.

MENTOR AND MENTEE?

As a mentor, you help newcomers come through their first year unscathed. You can do this as part of the optional subject Coaching & Diversity, which will earn you three credits. Visit www.UGent.be/diversiteitengender and look under Coaching and Diversity. You will also find mentoring options there.





UNIVERSE



MAD ABOUT PLANTS

The 2.75 hectare Botanical Garden of Ghent University is home to an expert team of gardeners, including one woman. An Herman very lovingly grows the plant families entrusted to her care.

How did you get here?

'I had done a year of biology some time back. At that time, I often came to the Victoria greenhouse to eat my sandwiches. I secretly thought how nice it must be to actually work here, in the botanical garden. I finally graduated in Horticulture and took up a job in a potted plant company. But my dream kept coming back to me and when a vacancy came up here fifteen years ago, I dug out all my old course material and literally worked day and night.'

Surely you need more than just green fingers to succeed here?

'We don't know the minutest details of all the 10,000 varieties we have here, but we do have a very

An Herman

'We receive seeds for 2,500 new varieties each year!'

broad spectrum of basic knowledge. And that is exactly how it should be, because a plant may look dead as a doornail, but may actually just be in hibernation. Furthermore, we all have our specialties. I am responsible for the vegetable garden among other things.'

You're telling me you also grow carrots and lettuce here?

'Urban children often do not know that blackberries are edible as well. We are trying to do something about this. We also focus a lot of attention on 'forgotten' vegetables. In principle, nothing is harvested here. Thus our students learn the various growth stages of a vegetable.'

What do you like most about your job?

'That our Director, Professor Paul Goetghebeur, gives us a lot of freedom to try out new things. I have my own mini-laboratory here. After a couple of failed attempts, my Passiflora has produced fruit for the first time. My next project is the kiwi berry. I will be freeing up a small piece of land for it.'

You mean some plants also disappear from the collection?

'The cultivars gradually make way for plants from the wild. We receive seeds for 2,500 new species from all over the world each year. We sow them and track their further development. The plants that do well can again be taken up for serious scientific research. Other botanical gardens can also order seeds from us.'

Last question: how does it feel to be the only female gardener here?

'It's not always easy, because a degree of physical strength is required occasionally. But we are all crazy about plants. Would you like to know what we talk about during our breaks? We jointly discuss how we approached plant A or B and whether or not our efforts met with success. The Botanical Garden is now quite simply our common passion.'

WWW.UGENT.BE/WE/EN/SERVICES/GARDEN



***Find out about
Ghent University's
educational offer
for schools***

STEM FOR THE KNOWLEDGE ECONOMY!

It's an old problem: there is a drastic drop in the number of pupils and students opting for the exact sciences, technology and engineering. 'If Flanders wants to be a knowledge economy, we really have to take STEM very seriously', says Professor Veronique Van Speybroeck.

S

TEM stands for Science, Technology, Engineering and Mathematics – the exact sciences, engineering & technology, engineering sciences and mathematics. 'Study streams that are not very popular in Flanders, or at least not popular enough', says Professor Veronique Van Speybroeck (Centre for Molecular Modelling). 'Nonetheless, we require them to tackle challenges

such as environmental care or sustainable energy.'

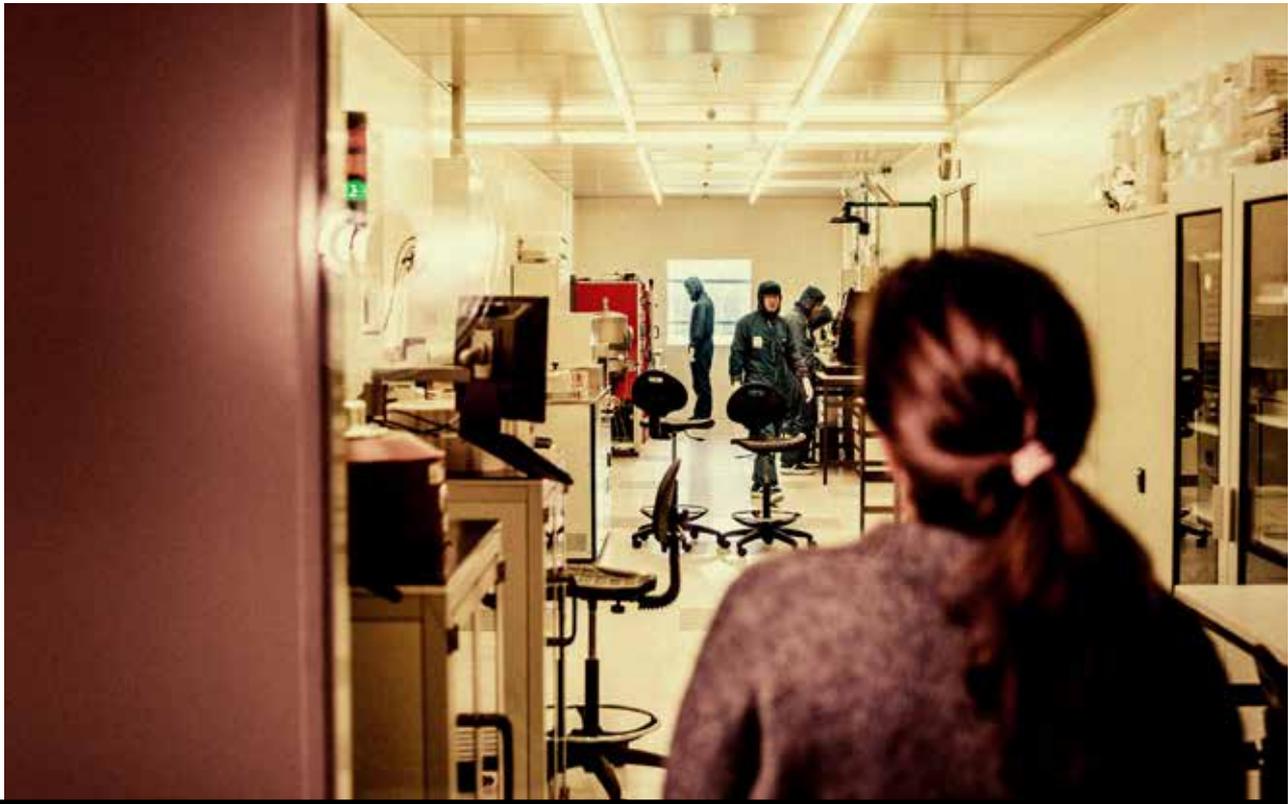
The previous Flemish government drew up a STEM Action Plan and the present government intends to continue this. A STEM platform – a sort of think-tank

for the measures to be taken, has been linked to it. Veronique Van Speybroeck is one of the 14 members.

Starting early

'I think it is very positive that the STEM Action Plan is looking beyond policy boundaries', she says. 'It comprises not only education, but economy, science and innovation, work and media as well. The aim is to attain at least the OECD average for student performances by 2020.'

All good scientists have first requested STEM platform members to provide them with a whole range of figures and data. 'This shows that a wide range of initiatives already exist, but in a somewhat fragmented form – and are sometimes hardly visible. A second observation: they have to start as early as possible in order to motivate children towards STEM study streams. Young children have a keen interest and are inquisitive, but will quickly lose their interest in STEM if they don't receive sound answers to their questions.'



Professor Van Speybroeck feels that the best way to stimulate curiosity is to adopt an integrated approach to the various scientific domains. 'Students who learn maths or physics in the normal way often don't see the use of it. It is only when they see how they can apply it that it becomes interesting.'

Coaches and academies

The STEM platform proposed a whole series of measures, many of which have been implemented. 'Primary schools can now request a visit by a technology and engineering coach. These are people from the business world who support teachers in providing information about engineering and technology. There are already 120 such people active in the field and soon there will be more.'

The STEM academies for children in their spare time have been a great success. 'Many of the extracurricular activities are already up and running: the children's college ('Kinderuniversiteit'), science

Dust-free science

This photo was taken in the cleanrooms of Ghent University (Ardoyen campus), where scientists are exploring applications involving photonics and ultra-thin chips – an excellent example of the kind of high technological research that STEM wants to stimulate.

clubs, art clubs. They can now be found on one website: parents and children now find it easier to locate them. It has been an unprecedented success with more than 300 initiatives in the whole of Flanders, and more than 4,000 children who actively participate. Activities such as *coder dojos* (coding training school) – initiated by Martine Tempels, chairman of the STEM platform, where children can learn programming, are fully booked in no time at all!

Apart from such quick wins, the platform also wants to take long-term measures to strengthen STEM in teacher training. 'An individual teacher can't know everything, but by collaborating with other teachers in learning communities and for



- ▶ example, higher education institutions, you no longer have to do things by yourself. You could also work with junior and senior profiles. The senior coaches young teachers, who pass fresh ideas back to the seniors.'

At Ghent University

The STEM action plan has created a lot of dynamism in Ghent University as well. 'Some were already very active - the children's university was a project that did very well. But a more coherent approach is now being taken to everything. Employees can send feedback to our STEM policy adviser and they can find out what other colleagues are working on.'

Last summer, Ghent University organised Clever Forever, a science camp for children aged 13 to 16, for the first time. Another wonderful initiative is the My Machine project: Under the project, primary school children imagine the machines that they would like to build in

Wanted: Ambassadors!

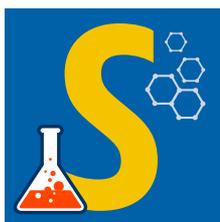
Professor Van Speybroeck: 'Why can't Ghent University students and doctoral students act as technology coaches and as ambassadors for STEM?'

order to realise their dreams. 'Some of these machines are actually built and constructed in collaboration with secondary and higher education students. Very nice.'

But there is always room for improvement. 'I want to see more students or doctoral students connecting up with secondary or primary schools. We have a vast pool of people who can act as technology coaches and could become ambassadors for STEM. Many students in their first bachelor's course carry out a project

STEM sample chart

From the hundreds of initiatives included in Ghent University's educational offer, we have selected four here - one for each STEM component.

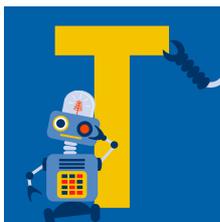


SCIENCE

Doing Chemistry

Are you a teacher of chemistry and physics with students aged between

15 and 18 years? Then the Doe-Chemie Centrum of Ghent University (Campus Sterre, Faculty of Sciences) is for you. 'The experiments at the centre are linked to the lectures on chemistry and physics, but go a step further', says Professor Katrien Strubbe. 'For example, you will learn to make aspirin yourself, or plastics such as bakelite and superglue.'



TECHNOLOGY

Robots battle it out

Assemble a robot yourself: that was a childhood dream for many people. The Dwengo association founded by researchers of Ghent University places some interesting tools in the hands of

those who want to realise this dream, and organises workshops to help during the assembly process. And to make it even more exciting, an annual competition is organised in which robots battle it out against one another. There will be sumo wrestling on 30th April 2015! Prime mover Francis wyffels had this to say: 'At the end of October, we organised our first international competition for art robots: robots that create art. Disadvantaged young people from various parts of the world were given the opportunity to put their best foot forward.'



that combines various subjects and strives to integrate different sciences. Today, such projects are rarely found outside university walls, but you can use them equally well as interesting cases at the third grade secondary level. You will find that there are plenty of opportunities! ◀◀

WWW.UGENT.BE/EDUCATIEFAANBODSCHOLEN

WWW.STEM-ACADEMIE.BE

STEM Education Days, an international conference with good practice examples and STEM workshops for a wide public, will be held on the 29th and 30th of March 2015 in the Department of Educational Studies (Faculty of Psychology and Educational Sciences, Henri Dunantlaan 2, Ghent).



ENGINEERING

Alcohol in the tank

Engineering studies usually represent the 'great unknown' for young secondary education students. For example, they

think it's all about 'building bridges', not realising that many other study streams are also possible. This was demonstrated by Professor Joris Thybaut during his 'Glass full?' workshop *Come, try doing it!* In the workshop, secondary school and third grade primary school students learned to make biofuels themselves, that they could test in a glow engine. Among other things, the fuels made are alcohol-based - hence the title.



MATHEMATICS

Try modelling a disease

Mathematics can help us understand natural processes better. 'Last year, we organised our bio-mathematics days for the first time', says

Dr. Engineer Jan Baetens. 'It was a huge success. And this year again, we have far more applications that we can handle.' Mathematical models were used last year to simulate how fungi grow, and how animal types 'compete' with each other. This year, water purification and the spread of disease will be the subjects - very interesting contemporary topics particularly since the Ebola epidemic is raging ...



'HISTORIANS CAN SEE INTO THE FUTURE'

Port Director Daan Schaleck

Daan Schalck has been the head of the Ghent Port Authority for almost six years now. Before that, he had a career as a politician and consultant.

But it all suddenly began when he was a student of history, standing on the steps of the turbulent Blandijnberg.

Your current job is totally unrelated to your studies?
'That may appear so, and it is of course true. You expect to find historians in educational institutions, or in museums or archives. But an education in history is much broader in scope than people often believe. I have always been interested in the numbers from history – battles and Roman emperors did not interest me as much. For example, for my thesis I developed a mathematical model to relate grain taxes from the 17th century to population figures, and to use this as a basis to draw conclusions about the effects of epidemics and famines.

The jury that assessed my thesis had only one historian, my promoter. The other members were a demographer and an economist. Looking over the wall, not remaining stuck within your own field: that is something I have always found very valuable even in my later career.'

Why did you as an 18-year-old want to study history *per se*?

'To be honest, for me it was primarily the atmosphere around the Blandijn. I had a strong sense of social commitment at the time, and a few years earlier, Blandijn had been at the centre of the campaigns against the increases in the registration fees – 10,000 francs, at that time. ▶



The big three

'If I have to choose one professor who has fundamentally influenced me, it would be a difficult task. But I must mention three. Firstly, there is **Chris Vandebroecke**, who unfortunately died far too young, in 2007. He had a very broad view of history, with a close focus on the economy and demography. He was a very pleasant man even outside the classroom.

Herman Balthazar was not only a very good professor, but I may still call him a friend. A very erudite man with whom you can conduct enriching philosophical discussions. And as governor, he has done a lot for the port.

Finally, someone whom probably very few people will still remember: **Wilfried Brulez**. A rather timid teacher, and he had just 40 slides for 20 lectures, but such penetrating insight! What you can extract from figures and tables, how can you look beyond figures.

His lectures have had a huge impact on me. Give me a series of numbers and I could be working on them for hours. Traffic figures are not just tables, there are underlying economic and geopolitical movements behind them. That is what Professor Brulez taught me.'

▶ The atmosphere was somewhat less revolutionary in Law or in Economics. It was entirely possible that I would have chosen economics if the spirit of the times had been different.

My commitment continued even after I completed my studies and I joined the civil service. When asked to specify three institutions where I wanted to perform my civic duty, I opted for Internal Affairs, which was furthest from my world of experience: a community centre in my district, a non-profit association that I did not know very well. But it turned out to be a blessing in disguise: the then chairman of the community centre has since had a dazzling career in politics and is now the Mayor of Ghent.

The bond was forged back then, and we have come a long way together. I was Secretary to Daniel Termont in the drinking water utility and elevated to cabinet chief when he was Alderman for the Harbour. Thereafter, I continued under



my own steam: in the federal parliament for the Socialist Party, and as a consultant with Ernst & Young.'

And then your ship finally returned to port.

'This was quite unexpected, but if you had asked me what my dream job was 15 years ago, I would have said 'this is'. For three years I was general manager of the company in charge of the port development of the Left Bank in Antwerp, as my predecessor in the Ghent Port Authority made a rather unexpected exit. Fortunately, I not only had a lot of experience with government companies as a politician, but also a thorough knowledge of the world of ports. I knew all the big companies, I knew how concessions worked, I was familiar with the regulatory framework.'

What precisely drew you to the port?

'You work in an area where contrasting worlds intersect: public and private, national and international, long-term and short-term. You have to give concrete shape to a commercial area covering 4,000 hectares, with quays and locks that will still be around in 100 years' time, and in the meanwhile, you must also attract new clients for tomorrow.

My history education came in handy in this field. Historians are accustomed to looking far into the past - this enables them to look far into the future as well. I try to visualise what the economy will look like in 2050 and I base my policy on that. This may sound bizarre, but a lock will survive for at least twice that time.

Don't let anyone rush you. A shop that does not have any customers for four years is bankrupt. But if there is congestion in the Deurganckdok on the Antwerp Left Bank within five years, it will mean we had made a mistake. A port must dare to think long-term. Historians are more at home with this than economists.

So what will the port of Ghent look like in 2050?

In general terms, the manufacturing industry is gradually returning to Europe since it is no longer sustained

by mass production but it is based on technology and know-how. New technologies such as cluster biofuels are emerging, which we developed jointly with Ghent University, as well as 3D printing and new forms of e-commerce. The boundaries are fading, companies are increasingly manufacturing closer to clients to enable them to deliver today what was ordered yesterday.

The port of the future will be one that provides a location for the combined activities of logistics and production. We will continue to attract more raw materials, but they will be much more specialised and in smaller volumes than traditional pit coal, ores or petroleum products. For a relatively small port like Ghent, the future lies in specialised chemical and liquid products. Possibly, the sharp rise may no longer be in tonnage, but rather in added value and employment.

Furthermore, we are also working hard on a collaboration with Vlissingen and Zeeland. If we can join forces, we can do excellently well as a complementary port area.

Can the university play a role in this?

A really major role. Although cluster biofuels involve a very concrete collaboration, not a day goes by without my having to contact the university. In the model that I have in mind, logistics, technology and scientific advances will go hand in hand.

The backing of Ghent University is a great asset for international investors. In presentations abroad, I first talk about Ghent, the university, and the fact that we are the largest educational centre in Belgium - only then do I start talking about the port itself.

Daan Schalck
°1963, Master in History
(Ghent University, 1987)





**Professor
Bart Clarysse,**
Department
of Innovation,
Entrepreneurship and
Service Management

‘Over-regulation is detrimental to innovation’

Uber and Airbnb are examples of new business models that can turn a sector upside down. They seem to offer a threat to existing players, but this is not always the case, as proved by research - by Markides in *Game-Changing Strategies* among others. Newcomers like Ryanair have by no means driven out traditional airlines like British Airways: they opened up a new market of people who otherwise would not fly or would fly less often.

Of course, there is always some overlap between the old and new markets. Uber and Airbnb are new players in mature sectors. Companies are engaged in cut-throat competition for razor-thin margins. It goes

without saying that they do not welcome new players. But prohibition is not a good solution because that suppresses innovation. Even over-regulation is harmful. I understand taxi companies complaining about excessive regulatory zeal, but that does not justify regulating newcomers till they go bust. Existing companies in the sector have no choice but to work out a creative answer about the value they offer. Which clients will you choose, what are the values - price, quality, service - that you believe in, where can they innovate? Taxi companies that succeed in this need not fear Uber - I see that companies that focus mainly on airport transportation for example, are also overloaded with work.



**Professor
Thomas Block,**
Director of the Centre
for Sustainable
Development,
www.cdo.ugent.be

‘To apply counter-pressure or to make money?’

Some see Uber and Airbnb as examples of a sustainable *sharing economy*. Is that what they really are? Many initiatives in the sub-economy - for example on gentintransitie.com - exploit socio-economic challenges: *WijDelen (we share)*, free couch surfing, etc. - they are putting pressure on our consumption patterns and dominant non-sustainable systems. Thus for example, car-sharing systems not only consume 80% less matter and energy than private cars for the same number of kilometres, but users also less often opt to use their cars to travel.

As small-scale innovations of this kind find their way into society, new neo-liberal mechanisms will also sometimes sneak in. Good intentions fade very quickly. You could for example, regard what you own as a potentially marketable property. In Airbnb,

you think: Am I not underutilising my assets if I don't rent out my house? Gradually, capitalist logic eats away at good ideas and practices. Certainly in the case of a quantum leap, innovations must continue to keep sight of their original intentions. Incidentally - presumably, profit has always been the main objective in Uber and Airbnb, unlike Linux and Wikipedia.

Anyway: the social potential of an innovation is not only determined by technology, but probably much more by the socio-economic fabric surrounding it. The fact that it gives rise to a conflict is a positive development, but the discussion is best conducted based on the question asked by our Studium Generale on Sustainability Thinking in 2015: What is a sustainable economy?



You think on Facebook as well. Here are a few of the responses:



Mathias Peirlinck

Embrace!

30th October at 16:19 hrs



Milou Hüpscher

Embrace.

2nd November at 15:31 hrs



Ghent University

That's clear, thanks for your comments!

3rd November at 12:24 hrs

4,000 INTERNATIONAL STUDENTS COME TO GHENT UNIVERSITY EACH YEAR. WHICH ARE THE FIVE TOP COUNTRIES WHERE THE LARGEST NUMBER OF STUDENTS COME FROM?



Find out how Ghent University is raising its international profile, on page 6



THEY DARE TO THINK



Professor Anita Van Landschoot

(Department of Applied Biosciences) teaches brewing technology and is related to Food2Know, the centre of excellence for **animal nutrition, food and health**, set up by Ghent University.

FOOD2KNOW.BE

CAMBODIA WILL SOON DRINK AUGENT BEER

‘We are also working on developing a rice beer’

‘Ghent University and its associate partner Hogeschool Gent have the oldest brewery school in Belgium: it was founded in 1887. We are conducting research on all important aspects of beer production and we brew ‘Bijloke’, a beer named after the former abbey of Ghent. Bijloke is a golden high fermentation beer with 7.2 percent alcohol, with secondary fermentation in the bottle. Our market segment is already full to the brim: Successfully launching Bijloke here would have required gigantic marketing efforts.

By chance, we came into contact with Daun Penh Cambodia Group, a large Cambodian investor that has developed close ties with Ghent University and the Flemish food sector. He took out a licence for the recipe, thereby

ensuring that our abbey beer will now enter the Cambodian market in spring 2015 under the name Sakrum. The investor will import the required raw materials, while a Flemish company will set up the brewery in Cambodia.

The beer market in Cambodia continues to grow and there is definitely still space for a beer like Bijloke. It has a softer, more bitter taste than most of our high fermented beers, and the Asian market likes that. Bijloke is full bodied, highly drinkable and offers the taste of aroma hops and esters that linger for a long time. The Daun Penh Group have also asked us to develop a rice beer – based on cheaper versions of rice rather than high nutrition rice. We are currently working on it.’

ANSWER



**THE NETHERLANDS, CHINA,
SPAIN, GERMANY, ITALY**

Scroll back for the question