Brightlands
Maastricht Health Campus

about 2019:
MAJOR DEAL IN CHINA
&
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New resident
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Brightlands
goes to America

Diary of
Manuela Joore

“Collaboration leads to more than success. It connects companies, organisations and campuses, but above all it connects people”

Knowledge crossing borders

EDITORIAL JAN

When our anniversary glossy came out five years ago, it was intended as a one-off edition. But we were so happy with it and received so much positive feedback that we decided to make it a tradition. Again, I'm amazed by all those stories. So many things that are going on at our campus! And this is only a selection from all the special things that have happened here in the past year.

What I like is the common thread of gathering and working together, criss-cross through the stories. After all, the only right way to achieve our goals is by putting our heads together and learning from and with each other. Collaboration leads to more than success. It connects companies, organisations and campuses, but above all it connects people. And it is precisely these people who make it work, who create 100 extra jobs on our campus, who have raised € 14 million in funding for eight of our businesses and who ensure that startups expand beyond our borders. Concrete facts of which we can all be very proud.

A great deal of knowledge and experience is available within the Brightlands organisation. We are happy to offer this knowledge and experience at attractive conditions, to (starting) entrepreneurs on our campus. The offer is there, and we are happy to get you started. Make smart use of the Brightlands Venture Support Card.

Could we agree to keep meeting, talking and learning from each other? That we continue to meet new people and share information and experiences? Maybe at one of our meetings, at one of the master classes, at the MECC where the Brightlands Maastricht Health Campus Foyer will be given a prominent place or simply in the corridors? Enjoy the stories in our magazine. I sincerely hope they inspire you. And it's my wish that we can share as many great stories and experiences with each other again next year.

Kind regards,

Prof. dr. Jan Cobbenhagen
CEO Brightlands Maastricht Health Campus

Colophon

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Table of content

Sonja Hermans, secretary of Sjef Janssen at M4I–MERLN and record manager at Pure Team

"Actually, I'm more of a cyclist than a runner. I primarily use Start to Run to get through the winter sportily, so I will be fit to get back on my racing bike in the spring."

"Because cycling is even more fun when you do it together, I founded Ladies First Cycling in 2014. By now, it has grown from a small cycling club into quite a peloton. In the winter we train inside on a spinning bike, in a gym in Nuth. But this year I didn't feel like that very much. I prefer open air sports. And in winter I find cycling too dangerous in the dark but running feels okay."

"Start to Run is not my first introduction to running. I have run before; short distances but also half marathons. Unfortunately, the latter is no longer as smooth as it used to be. In 2010 I fell off my bike and that left me with a persistent injury to my thigh and hip. With Start to Run I hope to improve my technique in such a way that I can run pain-free again."

"So far, so good. Our coach provides us with good tips. Thanks to his advices, I now pay better attention to my posture while walking, for example by using my arms more consciously and placing my feet in a better way. At home I regularly do the homework that our coach gives us using the group app. Right now, I do a lot of planking, for a better core stability."

"So, the lessons go way beyond a standard Start to Run app on your phone. And it's also more than just running around. We're very focused on technique as well as training certain muscle groups. And of course, it's also a lot of fun. You get to know new people who also work at Brightlands Maastricht Health Campus."

"On Sunday, February 9, we concluded our ten lessons course with the participation in Zweit veur Leid, the well-known charity run in Maastricht. Together we achieved our goal."

Sonja Hermans

In 1996 Jan Theys started his research as a PhD student in Leuven. In short: he uses the non-pathogenic bacterium Clostridium to 'transport' a chemotherapeutic drug to the tumor. This is a major technological breakthrough - "We could transport any gene safely and without any antibiotic resistance" - leads to the award of a KWF grant of 2.1 million euros. Things have been going fast ever since.

In June 2019, Jan and several colleagues left Maastro Lab and moved to the Department of Precision Medicine, a new department of Maastricht University. Jan: "Here we have a research team with young, good, international postdocs. Apart from the challenges involved in such a transition, this is a very fine and stimulating environment. We have been working with colleagues from New Zealand for years and now one of their postdocs has joined our team here. As well as two postdocs from the UK, real Clostridium experts. Instead of skyping with New Zealand after ten in the evening, we just come here together. That works quite differently."

An additional challenge that the Clostridium team (which currently consists of eight researchers) is facing right now, is paving the regulatory path for working with living micro-organisms on patients. It is a topical ànd controversial subject. Despite several scientific papers and extensive reports, no decisions have yet been made. Jan: "Compared to America, Europe - and the Netherlands - is rather conservative in this area at this stage. That means discussing with regulators, exploring a lot of things and joining forces with researchers in similar situations. From an academic perspective, I can't help thinking: shouldn't I spend my time, energy and money better on the content? I can understand that legislation and regulations are absolutely necessary, but it is very frustrating that it is so complex and sometimes takes so long."

"It is part of our academic work to explain to society in comprehensible language what we do. Telling my story in any village for local volunteers of the KWF gives at least as much satisfaction as being a keynote speaker at a congress or publishing a paper. In 2015, I ran the Alpe d' Huez to raise money for research. I'll never forget that: all those runners, riders and spectators who all have, or have had, to deal with cancer. We do this for them."

"The USP of Clostridium is that the bacterium only grows where there is no oxygen. Virtually all solid tumours contain areas with little or no oxygen and it is precisely those areas that are hardly susceptible to radiotherapy or chemotherapy. The idea is to use the Clostridium bacterium to transport an enzyme to the tumor that can convert a prodrug on the spot. A prodrug is a non-active substance that only releases the active drug when it is converted at its intended place in the body. In the tumour, the Clostridium bacterium feeds itself with the dead tissue that is abundantly available on the spot. By growing, the bacterium releases an enzyme which converts the prodrug. It actually works like a small chemotherapy factory and with it's very localised action, it allows using high doses of chemotherapy, without the negative side effects on the healthy tissues. Especially the combination with other treatment methods is very promising for the final destruction of the tumor."

"We are on the right
and regulations


JAN
THEYS
track, but complex laws
are frustrating”

MIREILLE STHIJNS

Mireille Sthijns is a researcher and winner of the UM Impact Course 2019. As well, she is initiator of the Outreach Team at MERLN: "As a researcher you have a social obligation to explain what you are doing." A modest person by nature. Curious and eager to learn, ambitious, alert and active. Not afraid to change direction. After her doctoral research in the field of redox biology, she resolutely switched to MERLN, to the world of regenerative medicine and tissue engineering. Here she is looking for more successful and sustainable ways for transplant treatment for patients with severe type I diabetes.

"I want to make the

Patients with type I diabetes no longer produce insulin from the functional units in the pancreas - called the 'Islets of Langerhans'. A donor transplantation of these 'islets' is possible. But... diabetes is an autoimmune disease. The body will attack the new cells as well and after two years most patients are back to square one. Injecting insulin is a symptomatic solution. So far, transplantation is a temporary solution. Mireille thinks she has found a permanent solution to make the transplant more successful, so that a patient with type I diabetes can really be cured.

"My Eureka moment was when I discovered that regenerative medicine did not yet take into account the negative effects of insufficient vascularization or blood flow. After all, during transplantation you disconnect 'the islands' from the blood vessels and thus from oxygen and nutrients. The subsequent imbalance of oxidants and antioxidants leads to oxidative stress and thus to even more damage. We already have created protective bio material 'bags' that encircle the transplanted 'islands'. Oxygen and nutrients can enter, but aggressive autoimmune cells cannot. Our idea is to optimize this protection mechanism by adding extra molecules to those 'bags'. By doing so, the transplanted cells will remain in a better condition until the blood circulation is restored. On top of that, they are permanently protected against the autoimmune cells. In this way, transplanting the 'Islets of Langerhans' could become a successful, effective and sustainable solution for people with type I diabetes. Of course, we could also use this solution if we were to use stem cells as an alternative."

"Together we know so much more"

We are working on the patent application. For now they are still in the process of validating the tests. Yes, there are already some promising results, but: " I'm not entitled to say anything about that yet."

Mireille is convinced that the solution to many scientific challenges can be found in joining forces. "That's another reason I came to MERLN. I am from a very biological background, but different disciplines work together here. Engineers, chemists, materials scientists... I often work with doctors, most recently with an endocrinologist from Leiden who carries out the clinical transplants of the 'islets'. We really should work together much more: we need to combine the knowledge and skills of the various disciplines. Science should collaborate more with companies; professional groups should learn with and from each other. Together we know so much more and are so much stronger..."

translation to the patient"

Marja van Dieijen-Visser

is chair of the Executive Board of Maastricht UMC+

Daily life at the Brightlands Maastricht Health Campus is dynamic and vibrant. It's something I feel every single day the moment that I cycle into the Randwyck district. With a total of almost 10,000 enthusiastic and passionate people on this campus, it can hardly be otherwise. Together they ensure a healthy life, today and tomorrow, day in, day out. Each in their own way, from the researcher who makes discoveries in the laboratory and the doctor and nurse who apply new knowledge in their patient care on a daily basis to the entrepreneur who ensures that innovations come onto the market. This campus brings all these people together. This is also where the power that stimulates medical progress lies.

At the end of 2019, we presented the Maastricht UMC+ strategy 'Gezond Leven 2025'. This document describes the course that our organization will take in the coming years. In doing so, we are building on the earlier 'Gezond Leven 2020' strategy document. We will not change our course substantially, but we are looking to enrich and define it more sharply. In doing so, we realize that social developments, such as an ageing population and rising healthcare costs, also present us with a complex task. The answer we can offer comes from our own strength: the power to innovate. Connecting research and education with our patient care therefore occupies a focal position in our strategy. This is also one of our core tasks as a university medical centre. For this process we search for connections with our partners in the region. Not only with the Province of Limburg, the Municipality of Maastricht, or the university, but also with local GPs, companies, and other partners in health. The Brightlands Maastricht Health Campus is one of the places where the cross-pollination eventually takes place, where we valorize our shared knowledge and realize new innovations.

We not only make and keep the region healthier; we go a step further. After all, the valorization of scientific knowledge also generates a lot of profit, not only as direct health gains, but also socio-economic gains. We create more employment and an attractive business climate for entrepreneurial scientists. By investing in innovative developments, we meet the challenges of the future. We are therefore convinced that in this way we will become better together every day through expanding knowledge.

How are they doing now?

IN JANUARY 2019 WE CELEBRATED THE FIFTH ANNIVERSARY OF BRIGHTLANDS MAASTRICHT HEALTH CAMPUS. THAT'S WHEN OUR FIRST GLOSSY APPEARED, FULL OF INTERESTING STORIES ABOUT ENTREPRENEURIAL PEOPLE. CURIOUS ABOUT HOW THEY ARE DOING NOW?

GUUS SIMONS

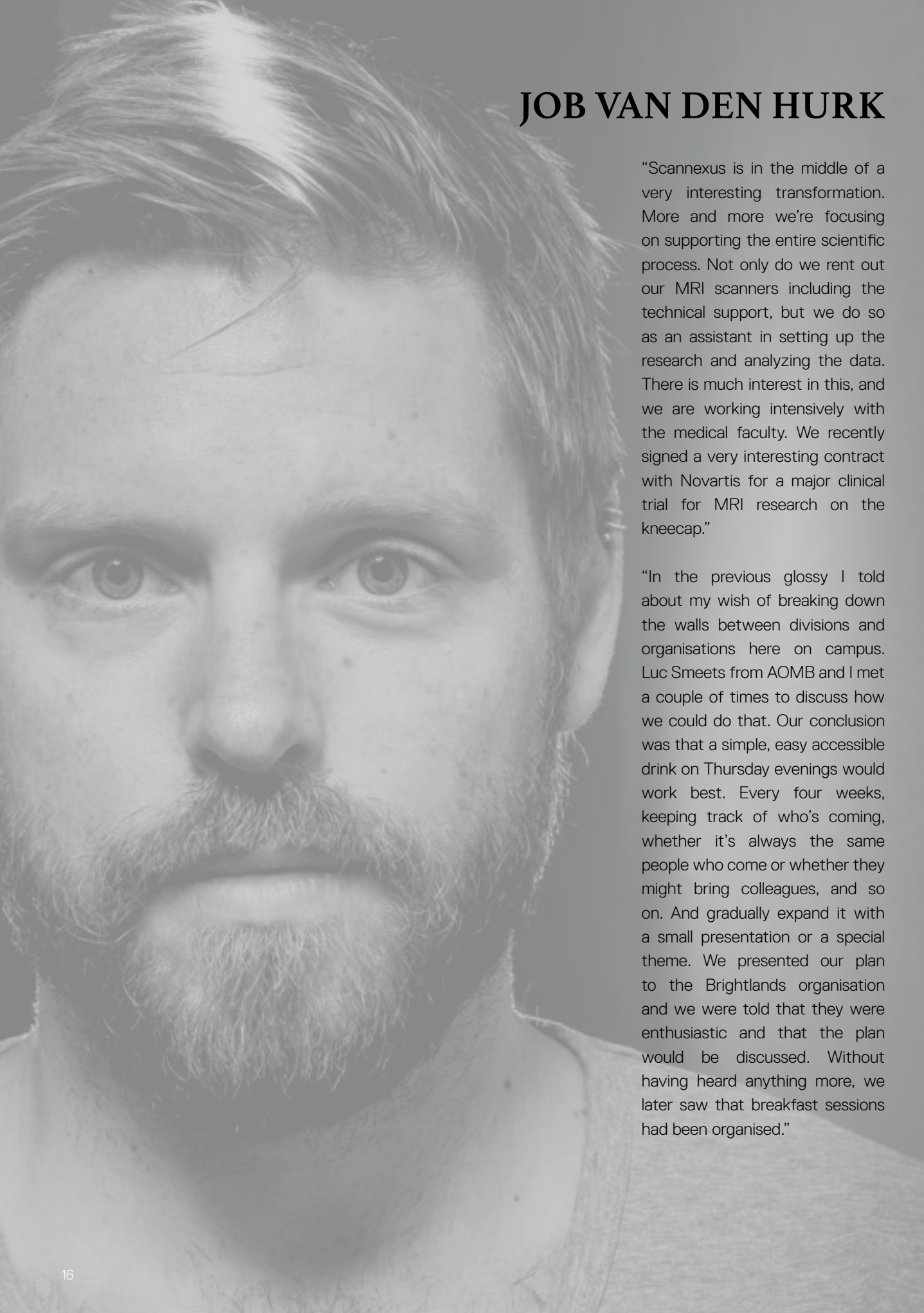
We meet Guus Simons, founder of PathoFinder, early December 2019. At that time he had a very brief answer to the question how is it going?: “The year 2019 really has brought us a lot. There are now twenty people working at PathoFinder and next year we will expand the team even further. The turnover has been quite good as well, a few million euros this year. But call me back in a couple of weeks, because we have some big news coming up.”

And indeed, at the very last moment of 2019, it was announced that the Chinese GeneoDx has taken a majority stake in PathoFinder. Guus will retain a significant part of the shares and will remain associated with PathoFinder for another three years. Guus: “I came into contact with GeneoDx when I visited China for a scientific congress, some eight years ago. The company is part of parent company Sinopharm, a large leading Chinese pharmaceutical company. GeneoDx already distributed the diagnostic tests of PathoFinder on a modest scale, mainly for scientific applications. Because GeneoDx is familiar with the way in which our products can be approved and certified, it will be easier for us to enter the Chinese hospital market. We will also develop diagnostic tests for pathogens that are mainly active in China, such as specific flu viruses.”

MATTHIJS BOSVELD

The 23-year-old co-founder of the Stichting Mens Achter De Patiënt is now doing his internship: “I’m doing fine. I have completed my master’s degree in Healthcare Policy Innovation Management and since a couple of weeks I am doing my internship at the St. Anna Hospital in Geldrop. I came to realize (again!) that care is something very close to my heart, especially when it comes to patient contact. We have delegated the executive board of Stichting Mens Achter De Patiënt to Eva Visbach and Romy Spee. Just like us then, they have put their studies on hold for a year. They’re doing a fantastic job. But the funny thing is that, on the one hand, this gives me a reassuring feeling, but on the other hand, it doesn’t: in a way I still feel permanently connected to and responsible for your ‘baby’.”

“Due to the internships, my involvement now is mostly at an appropriate distance. However, we do look ahead. For example, we are exploring whether we can obtain a PhD on the research figures of Stichting Mens Achter De Patiënt. But what’s more, we want to grow. We are well established in Limburg, but there is also a national demand for active participation of patients in education. If we want to tackle that effectively, we will need an extra strategic level, above the board. To that end, we are still looking for funds on a larger scale. Anyone who would like to exchange ideas about this is of course always welcome to contact us.”



JOB VAN DEN HURK

"Scannexus is in the middle of a very interesting transformation. More and more we're focusing on supporting the entire scientific process. Not only do we rent out our MRI scanners including the technical support, but we do so as an assistant in setting up the research and analyzing the data. There is much interest in this, and we are working intensively with the medical faculty. We recently signed a very interesting contract with Novartis for a major clinical trial for MRI research on the kneecap."

"In the previous glossy I told about my wish of breaking down the walls between divisions and organisations here on campus. Luc Smeets from AOMB and I met a couple of times to discuss how we could do that. Our conclusion was that a simple, easy accessible drink on Thursday evenings would work best. Every four weeks, keeping track of who's coming, whether it's always the same people who come or whether they might bring colleagues, and so on. And gradually expand it with a small presentation or a special theme. We presented our plan to the Brightlands organisation and we were told that they were enthusiastic and that the plan would be discussed. Without having heard anything more, we later saw that breakfast sessions had been organised."

GERARD BOS

"Lately we have been working hard building our GMP-lab in Geleen. Legally, our company CiMaas is still based in Maastricht, but the lab, which we built together with Neuroplast, is now in Geleen. Everything is ready, we are just waiting for the permit from the Dutch Inspectorate so that we can finally use our cell therapy as a medicine against cancer."

"We are working on two therapies. First: a vaccine that activates the patient's immune system so that the patient's own body creates killer cells that in turn destroy the cancer cells. In our laboratory, we also process donor cells into killer cells. We inject them into the patient's body with the same objective: destroying the cancer cells. Both projects are very promising, but the vaccine is progressing a little bit faster at the moment. If everything and everyone cooperates, we will test the first vaccine on patients this year. We are definitely making progress, but it all takes a lot of time, organising and money. CiMaas has been operating for five years now and apparently it is quite special if you make it through the first five years as a company."

HERM MARTENS

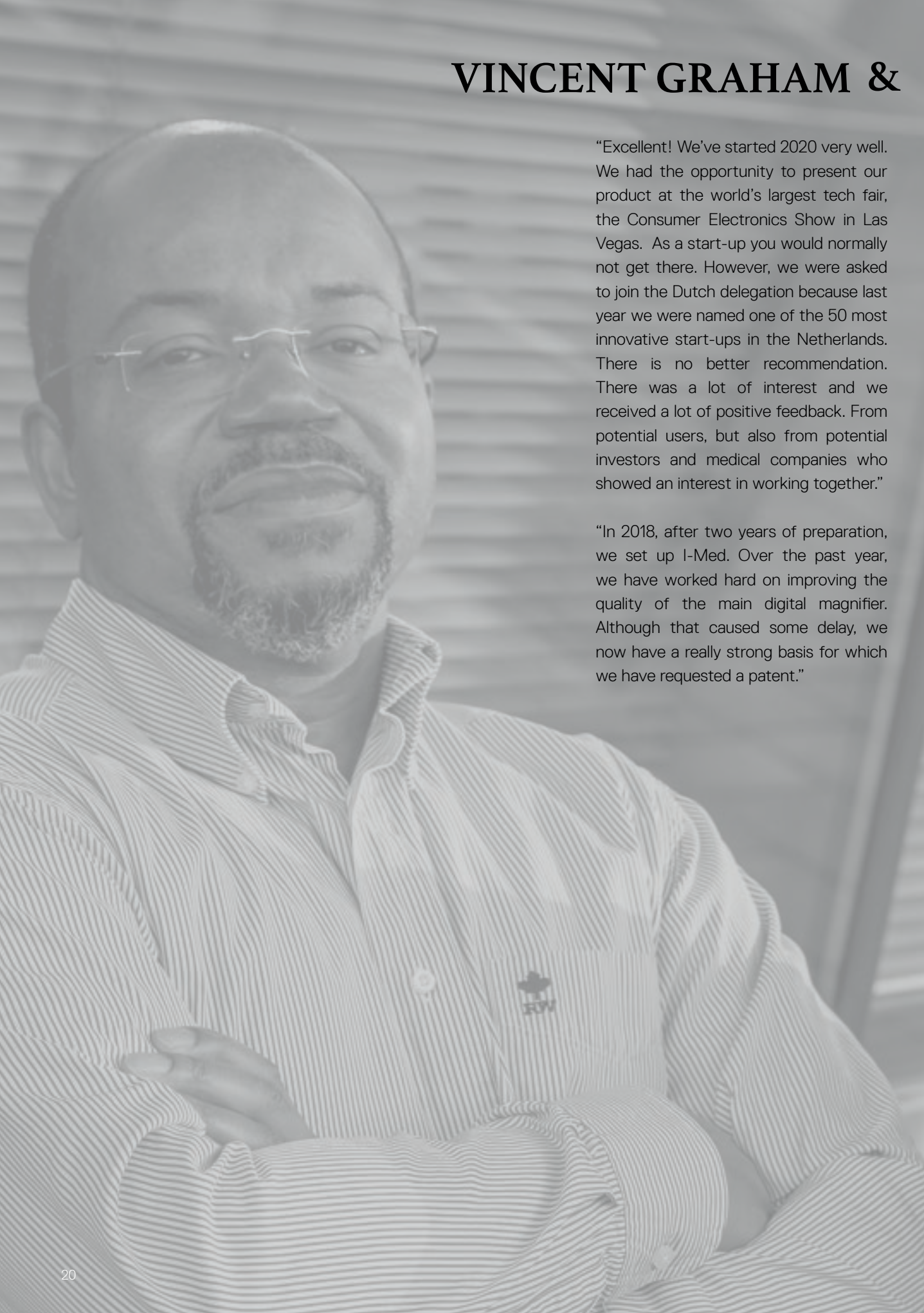
“Among professionals, there is a growing demand for the deployment of digital dermatology. Because of my experiences with www.digitaledermatoloog.nl, I have become a board member of the Dutch Association for Dermatology and Venereology (NVDV) with the portfolio digitization. Looking back, everything comes together nicely. I now work 2½ days a week for the Care Innovation Lab of the Maastricht UMC+ as an E-health coordinator. Healthcare professionals who encounter problems on the work floor - ‘can’t that be done differently/ smarter/easier/faster and so on?’ - can call us in.”

“Often they’re already offering the solutions themselves. Together we optimize these, we test them, of course, and if it works out as we expected and hoped, we help to actually realize the solution. In eighteen months, we have dealt with 94 issues, of which about 30 have now been realised. For example, we have optimised video calling, which is becoming more and more popular.
E-health is hardly a pioneering tool anymore, there are already many apps and platforms active. The question now is: what will be the role of e-health in standard healthcare? Based at the Healthcare Innovation Lab, I am also project leader at ZonMW’s Citrine Fund. All academic hospitals work together in the field of e-health. That’s smart: in this way we can prevent fragmentation and we learn from and with each other.”

MANON VAN ENGELAND

“One of my motivations as a scientist is that I want to do something that is socially relevant. For others it might be not so relevant, but I think it’s very important. If there’s one thing I’ve learned, it’s that if you don’t take the first step, nothing will happen to all your inventions and publications. So: in 2019 we set up two spin-off companies. It’s their job to take the biomarkers we found in the lab to detect cancer at an early stage, to the doctors and to the patients. There’s a lot involved, it’s a whole new world for me. We have thoroughly studied how we could best approach this and we have been excellently facilitated by the business developers of Brightlands Maastricht Health Campus. Epify and MLA Diagnostics - the start-up’s names - now have the task of preparing the clinical studies, making a business plan and talking to as many people in the field as possible. Especially with the doctors who have to use these tests. At the moment, we are not doing this often enough. Really, a regular treatment is not adjusted just like that. So, not only do we have to prove that our solution is better, we also have to communicate it. You must engage doctors as early as possible in the process and ensure that they come ‘on board’. Yes, that takes time and energy, but we scientists must take that first step. Whether it’s towards doctors, patients or, for example, to a business developer, who can check if there is potential in your invention. That first step of ours is essential. I’ve learned that. The whole process of starting up a company was new to me, but it was also a lot of fun and very instructive.”

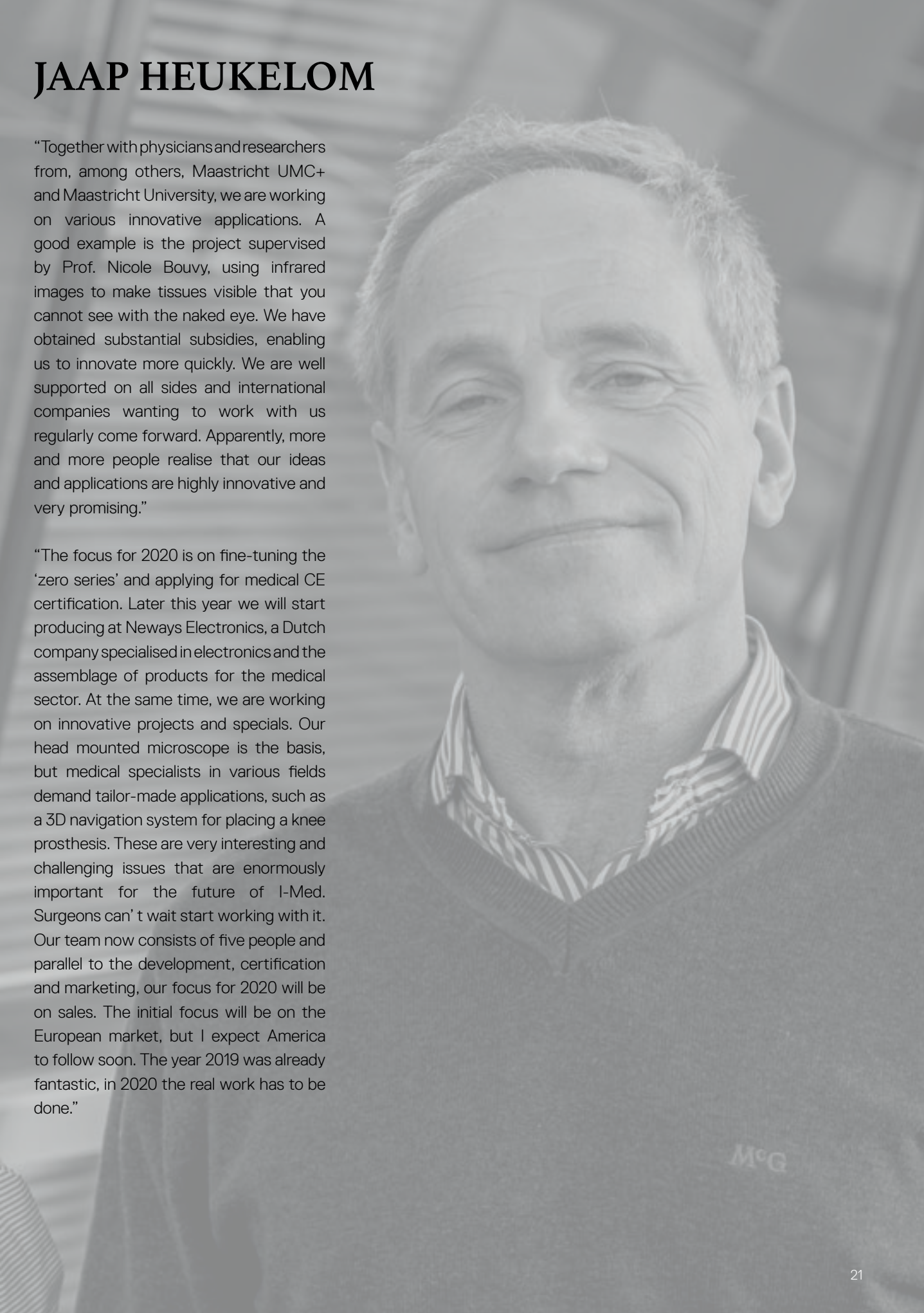
VINCENT GRAHAM &



"Excellent! We've started 2020 very well. We had the opportunity to present our product at the world's largest tech fair, the Consumer Electronics Show in Las Vegas. As a start-up you would normally not get there. However, we were asked to join the Dutch delegation because last year we were named one of the 50 most innovative start-ups in the Netherlands. There is no better recommendation. There was a lot of interest and we received a lot of positive feedback. From potential users, but also from potential investors and medical companies who showed an interest in working together."

"In 2018, after two years of preparation, we set up I-Med. Over the past year, we have worked hard on improving the quality of the main digital magnifier. Although that caused some delay, we now have a really strong basis for which we have requested a patent."

JAAP HEUKELOM



"Together with physicians and researchers from, among others, Maastricht UMC+ and Maastricht University, we are working on various innovative applications. A good example is the project supervised by Prof. Nicole Bouvy, using infrared images to make tissues visible that you cannot see with the naked eye. We have obtained substantial subsidies, enabling us to innovate more quickly. We are well supported on all sides and international companies wanting to work with us regularly come forward. Apparently, more and more people realise that our ideas and applications are highly innovative and very promising."

"The focus for 2020 is on fine-tuning the 'zero series' and applying for medical CE certification. Later this year we will start producing at Neways Electronics, a Dutch company specialised in electronics and the assemblage of products for the medical sector. At the same time, we are working on innovative projects and specials. Our head mounted microscope is the basis, but medical specialists in various fields demand tailor-made applications, such as a 3D navigation system for placing a knee prosthesis. These are very interesting and challenging issues that are enormously important for the future of I-Med. Surgeons can' t wait start working with it. Our team now consists of five people and parallel to the development, certification and marketing, our focus for 2020 will be on sales. The initial focus will be on the European market, but I expect America to follow soon. The year 2019 was already fantastic, in 2020 the real work has to be done."

PAMELA HABIBOVIC

“On January 1, 2019 I took over the scientific directorship of MERLN. I have a new role, or rather an extra role, because I am still the head of the department and I have my research group. MERLN has grown considerably in 2019 and now employs about 130 people. That also means that a lot of extra funding has been added to do new research. Such a fast-growing organisation requires continuous fine-tuning. How do you organise it internally, how do you ensure that everything continues to run efficiently? It takes a lot of time and energy. In the meantime, of course, we will continue to do what we as scientists are expected to do: we do research, we publish, and we ensure the funding of research. In a relatively short period of time (certainly by Dutch standards), we have established an institute that can’t be ignored. But if we want to continue to be an international player - and that is what we want - we really should scale up a bit. The idea is to grow to about 200 people and to hold on to that by also becoming more internationally competitive. We want to deliver highly distinctive work and thus putting Maastricht and the Maastricht University even more firmly on the map. If that means that we have to set up and organise the organisation differently, then so be it.”

IN THE NEWS

Thursday February 7, 2019

FIRST PATIENT IRRADIATED IN THE NEW PROTON THERAPY CENTRE

On Thursday February 7, 2019, the first patient was irradiated at the new proton therapy centre of Maastro in Maastricht. Irradiation with protons is an innovative technique that significantly reduces the risk of side effects for patients with cancer. With proton therapy, the radiation largely stops in the tumour and therefore does not reach the surrounding healthy tissue. This is particularly beneficial for the surrounding high-risk organs and the healthy tissue, such as the optic nerve or the memory areas in the brain, or in the case of tumours that are relatively insensitive to radiation and therefore need to be given a high dose.

But there is good news, as it is expected that there will be fewer side effects with proton therapy. For many people who have had cancer, life will never be the same again. We often hear patients say that it gets split into life before cancer and life after cancer. One of the reasons for this are the late effects of the disease. According to nationally established guidelines and selection criteria, approximately 3% of all cancer patients irradiated are expected to be eligible for this new form of radiotherapy which is only for those who will have a demonstrable benefit from proton therapy. In the Netherlands, four licences have been granted for proton therapy. Maastro is unique, even within Europe, as it can fully integrate the proton technology into the existing radiation clinic.

Brightlands goes to America!

Who's coming along?

At the end of April 2019 the following news item appeared on the website of Brightlands Maastricht Health Campus:

On Monday April 29, 2019 we opened an office in the business accelerator of the University of California in Irvine on the American West Coast. With the signing of a 'Memorandum of Understanding' the cooperation between UCI Innovation and Brightlands Maastricht Health Campus has been confirmed. The collaboration focuses on joint scientific research in regenerative medicine. The collaboration in scientific research must also lead to valorisation with social and economic benefits.

Marianne van der Steen is the lead partner of 'Brightlands goes America'. She is professor of Entrepreneurship in Health Care at MERLN (an institute for regenerative medicine) and director of RegMed XB: "My focus is on entrepreneurship: starting businesses and scaling up companies. In other words: the commercialisation of science to the market and to the patient. RegMed XB is a translational valorisation institute. Our work ensures that scientific knowledge is translated into solutions for the patient. This proposition of course fits perfectly with what Brightlands has in mind." The collaboration with UCI has both a scientific as well as a business component. In the scientific field, American and Dutch professors, including Marianne, are guest professors on both sides. Researchers from both universities speak at conferences - such as the major stem cell conference at UCI last January. The boards are in regular contact and cooperate as much as possible in cross-border research projects.

BUSINESS

For the business side there is the Global Scale-up Program for entrepreneurs. Marianne: "In America there's only one way of doing business: 'the American way'. The pitch, the way they look at amounts and figures, the regulations, the investment conditions... things are very different in America compared to what we are used to in the Netherlands. It's up to me and my colleagues to make sure that the participating companies are completely ready for the American market. During our visit, they immediately get into action by pitching to potential investors and/or potential business partners. In all the years that we have been doing this, we have built up a unique and qualitatively strong network. Because of these contacts, the warm leads, doors open for 'our' clients, which otherwise would stay closed. This can result in very interesting partnerships or research contracts."

"It works both ways: we help our own companies enter the American market and we attract American companies to Brightlands"

TAILOR MADE

The diversity of participants keeps Marianne and her colleagues sharp. "Although the major common denominator is the sector - Health & Life Sciences - every company, every entrepreneur has its own questions and needs. Usually they want to explore the American market and we are asked for the best approach. But there are also concrete questions such as "I am looking for a distributor". Our work is therefore always tailor-made. Strikingly often we see that entrepreneurs change course during the program. Based on what they learn from us, they decide that it might be smarter to do things differently."

TIPS!

Marianne has listed the most important tips and facts about 'doing business the American way'. These can be found below. But she would like to emphasize the most important tip: "If you are reading this article and your interest has been piqued, come and talk to us – it's without any obligation. After all, a tailor-made approach also includes a tailor-made intake."

DOING BUSINESS THE AMERICAN WAY

1. Immerse yourself in your business partner's culture. If you know how your own culture differs from the American culture, you can share, learn and understand in a dialogue what your American business relationship means.

2. Americans usually make three positive remarks before they make a negative one, which they often formulate positively. We Dutch people usually start with negative comments. The result is that we often only hear the positive comments of the Americans and not the important negative comments.

3. Americans expect a quick and positive reaction after a first acquaintance. Within 24 hours after an acquaintance an e-mail with a thank-you note is expected. If you fail to do so, the American partner will think you are no longer interested in doing business.

4. The same applies to the follow-up of e-mails in general. Always start your mail with a thank-you note before you respond to the purpose of your mail.

5. Being successful in the Netherlands is no guarantee that you'll be successful in the United States as well. In the US you will have to invest a lot of time and energy in building a network and the right business relationships.

6. Americans communicate convincingly and often tell their story in short and clear sentences. Modesty is often seen by Americans as uncertainty. If you want to do business in the United States, it is important to adapt to the American communication culture.

GLOBAL SCALE-UP PROGRAM 20-27 SEPTEMBER 2020

- Up to twelve companies, so tailor-made!
- Two days of preparation in Amsterdam: 13 May and 24 June 2020
- To California: 20-27 September 2020
- Costs: € 3,250 (excluding travel and accommodation costs, half of which are eligible for an RVO subsidy)

Want to know more? Please contact:

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From left to right: Carola van der Weijden (director Provincie Limburg), Jan Cobbenhagen (director Brightlands Maastricht Health Campus, Marianne van der Steen (director RegMEdXB en Global Scale Up Program), Gerbert Kunst (Consul Generaal San Francisco), Richard Sudek (director University of California Irvine Applied Innovation) en Henk Hanselaar (Honorair Consul San Diego).

A GLIMPSE INTO THE DIARY OF *Manue*

HEAD KEMTA MAASTRICHT UMC+

la

KEMTA (short for Clinical Epidemiology & Medical Technology Assessment) is a department of the Maastricht UMC+. The 25-person team, of which approximately one third are PhD students, studies the effectiveness and efficiency of existing and innovative interventions in health care. Manuela Joore, head of KEMTA since 1 June 2019, has been trained as a health scientist and epidemiologist. However, since her PhD-thesis, she has become completely committed to efficiency in health care.

Managing a team of 25 people, promoting the KEMTA-mission to everyone who wants to hear it, organising masterclasses, supervising PhD-candidates, active in many national and international committees, councils and decision-making institutions involved in policy-making in the field of efficiency in healthcare, chairing the science committee, initiating new collaborations and research... Never a dull moment. Manuela is 'in the house' on average three days a week. Those days are jam-packed with appointments. It doesn't always work out, but one day a week she tries to work from home: "Reading and thinking, I need that. Finding the balance between always being in contact with others and taking time for study and reflection." The daily train ride between Roermond and Maastricht and back is also used efficiently. All train time by the way: "That's the advantage of living in Limburg: you often spend a lot of time on the train."

WEDNESDAY

"WHEN I STARTED HERE SOME 25 YEARS AGO, I WAS STILL A VOICE CRYING IN THE WILDERNESS. NOWADAYS I DO NOT HAVE TO EXPLAIN TO ANYBODY THAT WE HAVE TO USE MONEY WISELY IN HEALTH CARE"

08.00

On my bike

"Rain or shine, that twenty-minute bike ride from my hometown Herten to Roermond station is a must. It's good to move, good to be outdoors. And in the evening back home again, of course."

09.00

Weekly consultation with PhD students

"I always look forward to these meetings. It's wonderful to experience up close how young people develop, especially when it's in my field of expertise. Nowadays I often supervise PhD students together with co-supervisors. Of course we have one-on-one meetings, but I also try to get groups together on a regular basis. I like to see people working in teams and learning from and with each other. Today I'm meeting Willem Witlox, discussing his research into the effectiveness and cost-effectiveness of prophylactic cranial radiation for the prevention of brain metastases with lung cancer patients."

10.00

Subsidy application intervention neuropathic pain

"Brigitte Brouwer and Karin Faber from the neurology department have asked us to help them prepare a subsidy application for an intervention improving the care for patients with neuropathic pain. We are very keen to have this kind of meetings. Entering into a dialogue together, looking for ways to help each other. KEMTA conducts scientific research on the effectiveness of care innovations. The departments and specialisms within the hospital are our main clients."

11.30

Preparations for Health Innovation Netherlands

"We try to support promising innovations. It is crucial to get stakeholders around the table at a very early stage: for instance, patient representatives, healthcare professionals, health insurers, the NZA, Zorginstituut Nederland. Each University Medical Centre has its own KEMTA, and we all do this now, independently of each other. This is not working efficiently, hence the plan to organise national meeting tables. Health Innovation Netherlands – HI-NL - is to become a national centre of expertise. A one-stop shop, especially for start-ups in the field of early phase medical devices. Maastricht, Utrecht, Nijmegen and Groningen will take the lead. The objective is for all UMCs to join in. I have thought least fourtimes these recent weeks; that would be a great j ob for HI-NL. Just recently, during the conversation with Egbert Smit of start-up MLA Diagnostics! They are developing a promising biomarker and would like to carry out an efficacy study at this early stage. Very smart!"

14.00

Discussing new research and new PhD candidates

"Meeting Arina ten Cate, discussing the applications of young doctors wanting to obtain a PhD on our latest project: implementing a prognosis model predicting how long a patient with a thrombosis leg will have to wear compression stockings. The standard now is two years. Two former PhD students developed a prediction model, which proved that not everyone needs a full two years. Using this prediction model could lead to considerable cost savings. The personnel costs for putting on and taking off support stockings make it an expensive product. With the results of this study we reached the national press. That was really great. It is a good example of what our work can deliver: good research and clear conclusions. And now we want to start implementing it."

15.30

Broken laptop

Bianca de Greef, one of our methodologists, pops in with a question about her broken laptop. "So funny that all those practical things are now part of my job too."

15.45

Telephone conference with NICE (UK)

"We also do evaluations for NICE, the National Institute for Health and Care Excellence in the UK. It's very similar to the Dutch Care Institute. The UK is really leading in my area of expertise. We take their decisions very seriously here. I see these projects as a valorisation of what we do: we bring in our expertise, but we also learn a lot from it ourselves. And it's good for our network too, because there are always two or three PhD students working partially for NICE. A few years ago I went to Manchester and London on a regular basis myself, now I leave that to my senior colleagues. Calling and skyping still happens regularly."

17.30

Preparing for the meeting of the Advisory Council of the Dutch Health-care Institute (Zorginstituut Nederland)

"What I really like about my job is that I can participate in all kinds of advisory boards and policy committees giving input and advice on highly relevant matters. At ZonMw, for example, or at the Scientific Advisory Council of the Netherlands Healthcare Institute. Once a month, on Monday evenings, I go to Utrecht for this. Various experts from all sorts of disciplines - doctors, scientists, policy advisers - provide the minister with advice on whether or not to reimburse medicines. It's very inspiring to participate in this process. This time on the agenda: Fampyra, a drug improving the walking ability of multiple sclerosis patients."

"WHEN I STARTED HERE SOME 25 YEARS AGO, I WAS STILL A VOICE CRYING IN THE WILDERNESS. NOWADAYS I DO NOT HAVE TO EXPLAIN TO ANYBODY THAT WE HAVE TO USE MONEY WISELY IN HEALTH CARE"

"DIALOGUE IS SO IMPORTANT. TALKING, LISTENING, LEARNING FROM EACH OTHER"

IP PROTECTION FOR MEDICAL STARTUPS

IP is important for startup companies. A patent allows you to share your innovation and to strengthen collaborations, and prevents others from copying your idea. But what is the right moment to take the first step and contact an IP advisor?

This is a question that clients often ask Rike Dekker of AOMB Intellectual Property. Without a patent, startup companies often have difficulties obtaining financing for their company. But obtaining patent protection requires an investment which needs funding. And while it is important to protect your idea as soon as possible, medical innovations need time before they are ready for market. Filing a patent too early results in a shorter period of market exclusivity. This is a typical catch-22 situation.

Rike Dekker

Senior European & Dutch patent attorney at AOMB

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AOMB has been providing IP advice for more than 50 years. What is the value of a patent? When should you apply for a patent? How do you define an IP strategy? These are questions that Rike and her colleagues of AOMB at the Brightlands Health Campus in Maastricht are happy to answer. She says: “We use our relevant scientific background to consult with the client about timing and costs, supporting the client to get maximum value from their innovation”.

AOMB is different from other IP firms in that AOMB invests in the relationship with the client. “This means that initially we offer a first meeting, free of charge, where we advise the client on their IP strategy. Next, we stay engaged with the client at every step of the development of their company, so that we grow together”. This provides the startup with the guidance for maximal valorization of their innovation.

Maastricht is becoming increasingly popular as a city for hosting conferences

“What happens here on the Brightlands campuses is unique. We need to advertise this much more prolifically internationally,” believes Chris Arts, Associate Professor of translational biomaterials. To share this special story internationally, Chris brought the annual conference of the European Orthopaedic Research Society (EORS) to the MECC in October 2019. No fewer than 385 researchers from 53 different countries came to Maastricht to talk about science, but also to experience the city itself.

“At some conferences, your status and tie are more important than what you have to say. We deliberately kept it very informal”

With two Brightlands campuses working well together in the field of biomaterials, South Limburg has developed into an international hub in recent years. “The government has invested heavily in this biomaterials structure and we are now reaping the benefits,” says Chris. “At international conferences, I am often asked how we got this public-private partnership off the ground here and how we managed to integrate the research lines on the campuses and in the clinic so well. This is something that other researchers can really learn from. If we are able to sell that story better internationally, perhaps more European money will also come our way. We’re doing exceptionally well; we’re just not sharing our successes often enough.”

BEFORE “We started the preparations to bring the EORS conference to Maastricht in 2014,” Chris says. “The competition was fierce, so we had to present our theme - translational research into biomaterials - and the city of Maastricht to the Society’s board in the best possible way. The Maastricht Convention Bureau and the MECC helped us a lot in this. They presented Maastricht, the MECC, the NH hotel, and all the other facilities very professionally in our bid book. Thanks to their help, we were able to focus our attention on the most important topics and the overall programme. In total, we worked on this for about three months.”

All efforts proved to be worthwhile: in 2015, the EORS decided that their conference would take place at the MECC from 2 to 4 October 2019. “And then everything went quiet,” says Chris. “It was only in the spring of 2018 that we started with the actual organization, determining the venue, finding sponsors, setting up committees, further developing the content, and inviting speakers. You can outsource a lot to a conference bureau, but you have to think about each element yourself. You have to consider the programme, the logo, the invitation, the website, the conference app, the entertainment, the food, and - most importantly - the coffee. It might sound like an insignificant detail, but participants will remember if the coffee was terrible forever. Luckily, I didn’t have to do it all alone. The organizing committee consisted of about eight people. For a year and a half, almost every free hour went into the organization of that conference. My children eventually couldn’t hear the word ‘conference’ one more time.”

DURING “Then, on 1 October, it was finally time: 385 guests from all over Europe and far beyond arrived in Maastricht, where the conference was to start a day later. I was the host. Most of the guests stayed in the NH hotel located close to the MECC, but also close to the city centre. With their ticket, they could make free use of public transport and within fifteen minutes they were sitting in a café or restaurant. This small-scale character of Maastricht appealed to many participants. They came for science, of course, but certainly also to experience the city of Maastricht.”

“In the MECC, too, everything was very close together. A special app gave a notification on time and showed the right walking route to the chosen speaker. Guests could also use the app to agree with colleagues at which speaker they would meet up. It worked really efficiently. In addition to all the speakers who attended from home and abroad, we had built in a lot of space for interaction. For example, there was a lorry in front of the entrance to the MECC where people could virtually place a knee prosthesis with virtual reality glasses. And during a coffee break, a break dancer showed what you are capable of doing with healthy bones without them breaking. The biggest success of the conference was a pair of large clogs that almost everyone wanted to take a photo with.”

NAME Chris Arts
AGE 46
WORK Associate professor translational biomaterials at Maastricht UMC+ and TU/e in Eindhoven.
EDUCATION Physiotherapy at Enschede University of Applied Sciences and Movement Sciences at Maastricht University.
PHD Radboud University on the subject of biomaterials.
LIVES in Oss

"That informal character was really important to me. I sometimes come to conferences where your tie and your status are more important than what you have to say. And this is something that I wanted to prevent. So with us there's no dress code and no rigid table arrangement. We just had a buffet so you could have a chat with everyone while you were eating, because people don't just come for the speakers, they also come to talk to each other about science."

AFTER "As an organizer you are not finished after the conference is over. That's when you start with collecting reviews, evaluating, handing over to next year's organizers, and, quite importantly, taking care of the finances. That was quite nerve-wrecking because we were not insured against a financial setback."

"I look back at the conference with a feeling of achievement. We have achieved our goal: Maastricht and the region have firmly claimed their place in the world of international biomaterials both thanks to this conference and thanks to the congress of the European Society for Biomaterials, which I co-organized in 2018, and the TERMIS World Congress next year. Personally, I am quite relieved that there is no trade fair scheduled for 2020. It's absolutely fantastic to be involved, but it is very exhausting too."

"Multi-day international conferences in the field of **Health & Life Sciences** are among the prime focus of MECC Maastricht.

This is where we strengthen each other, now and in the future. After the current renovation, we will further strengthen our relationship. Our goal is to become the beating heart of the campus, where, in addition to conferences and meetings, it is also a pleasant location to meet each other in an inspiring environment!"

Rob van de Wiel, director of MECC Maastricht

2019

Maastricht Instruments was nominated in 2019 for the Maastricht Award, an initiative of the Municipality of Maastricht. In the ‘Made in Maastricht’ category, the company finished in the top three of more than fifty entries.

MAASTRICHT INSTRUMENTS CLOSES MAJOR DEAL IN CHINA

There are exciting times ahead for Maastricht Instruments. In the spring of 2020, a group of over ten people will leave for Shanghai for a month to build two respiration chambers that were sold to Fudan University. With this deal, Maastricht Instruments has achieved international recognition for these respiration chambers.

The story of Maastricht Instruments started in 1998 when Frans Smeets, head of the Instrument Development, Engineering & Evaluation (IDEE) department at Maastricht University, came up with the plan to bring knowledge from the university and the hospital to the market. He founded Maastricht Instruments and became its director, but at the same time continued to manage IDEE. The first major success was the Vitrobot, a research instrument that can freeze cells and proteins. This device became a worldwide success with publications in Nature. More than 800 devices have been sold since then.


"WITH US,
INNOVATION
FLOWS
NATURALLY INTO
VALORIZATION"

More than twenty years later Maastricht Instruments is still strongly entwined with IDEE. So strongly in fact, that not everyone notices where IDEE stops and Maastricht Instruments begins. Paul Kwant, head of IDEE and director of Maastricht Instruments, understands the confusion. "We are in the same corridor and work in the same offices. Twenty employees of IDEE are mainly involved in developing new research instruments. If such a new instrument has the potential to become a market success, then the seven Maastricht Instruments employees will get to work on it." "We make the instrument more robust, provide a CE mark, do the market research, and then try to sell the instrument via international trade fairs and symposiums," explains business developer Youri Curfs. "This sees innovation flow naturally into valorization."

MARKET SUCCESSES This is how Maastricht Instruments has been involved in many of Brightlands' successes like the custom-made skull implants of Xilloc Medical BV. The entire procedure of scan and design was developed by IDEE and the first external patients were served by Maastricht Instruments. The company also worked on the Matrix Sublimator for HTX-Imaging BV, YourRhytmics' ECG equipment, Flowchamber BV's flow chambers, and Cryosol-World's VitroJet - the successor to the Vitrobot that started it all. (Read more about the VitroJet on page 70).

R&D "Many start-ups on campus are too small to have their own R&D department," Paul explains. "So, they knock on our door for technical developments. We then hire the engineers from IDEE. They are good with technology and understand the application of the technology thanks to the close cooperation with researchers and doctors. This is how we distinguish ourselves from other engineering companies."
"The challenging thing about our work is that we are always developing something new, something unique," says Youri. "The fact that a researcher might later achieve a major medical breakthrough with such an instrument is, of course, fantastic. But for me, the feeling of accomplishment is more in the development itself."

HUMAN METABOLISM At the moment Maastricht Instruments mainly focuses on indirect calorimetry. The company sells a complete range of products that can measure people's energy consumption very accurately. With this information, doctors or researchers can give targeted lifestyle advice to people with diabetes or obesity, but also to top athletes. The products and metabolic research originate from the School of Nutrition and Translational Research in Metabolism (NUTRIM) at the university.

WORLD LEADER "Our Omnical Indirect Calorimeter provides the most reliable data in the world," says Youri proudly. "We measure the differences between the inhaled and exhaled air and find out exactly how much energy the body burns. Usually we connect the Omnical to a face mask or a Plexiglass head shield. But you can also connect it to a respiration chamber: a room that is completely closed off from outside influences." (Read more about the respiration chamber on page 70). In 2019, two respiration chambers were sold to China. Fudan University in Shanghai is going to use the chambers to treat certain diseases of affluence among their population.

TRUST This is a special deal, because the Chinese are known for not doing business with you until they trust you completely. "We have been preparing for almost a year," says Paul. "We have been very well supported in this process by the Brightlands China Center which has helped us tremendously in bridging cultural differences."
"With this deal it has certainly helped that we are part of the Brightlands Maastricht Health Campus," says Youri. "A Chinese organization would never make such a big deal with a small Maastricht company. Now they are doing business with a company that is affiliated with Maastricht University, with Maastricht UMC+, and with the government. That inspires a lot of confidence and gives them the financial security they were looking for."
"With this deal we not only put the respiration chamber on the international map, but also further improve the worldwide reputation of Maastricht University and Brightlands," concludes Paul.

Tailor-made assistance

If you would like to organize a conference in the Maastricht region, the MCB is your dedicated partner. What can you expect from MCB? Think of professional and independent information, personal advice and support with regard to your conference needs. With over 35 years of experience and thanks to the collaboration with over 70 regional partners (hotels, venues, knowledge institutions and other service providers), the convention bureau can perfectly support you in both the organizational as well as the content related aspects of your congress or meeting. Are you organizing a conference for 300 people or a large international congress of 5000 delegates? The MCB is always ready to make your conference a true success.

- **More than 35 years of experience in the conference industry**
- **Personal assistance and support in organizing your conference**
- **Advice on venues, hotels, reception and dinner locations and other services**
- **Bid books, promotional material, images**
- **Network with more than 70 regional partners and suppliers**
- **Close cooperation with regional knowledge institutions**

maastricht:
CONVENTION BUREAU

Contact

Interested in how we make your congress a success:

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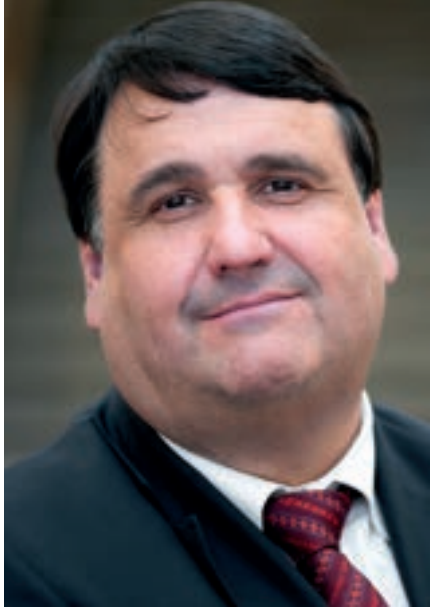
+31 (0)43 763 47 30

Martin Paul



is Chairman of the Executive Board of Maastricht University and Professor of Clinical Pharmacology and Toxicology.

It was already clear from the start that it would be essential for the Brightlands campuses to have an international character. After all, science is not about national borders, nor about demarcated fields of study. It was not for nothing that we chose 'Crossing Borders' to be our motto. In a relatively short period of time, we have built up an excellent reputation, also internationally. We are being noticed and this leads to interesting contacts and conversations, but also more and more often to concrete agreements to work together. When I look back, this was the biggest achievement of 2019.

What we are doing here at the Brightlands Maastricht Health Campus, for example in the field of regenerative medicine and diagnostics, is being followed closely all over the world. Our unique infrastructure with renowned institutes, top researchers, and excellent facilities generates interest. And so does our power to innovate, our focus on valorization, and the triple helix formula of the Brightlands campuses. This intensive collaboration between government, businesses, and knowledge institutes is extremely interesting, even more so in an international context.

Which leads to more interesting partnerships. In China, for example, several universities are interested in the expertise of Maastricht researchers in the field of metabolic research in respiration chambers. Maastricht University is collaborating with the University of York - a leading British university - on an innovative project in the field of neuroimaging, another focus of the Brightlands Maastricht Health Campus. The campus is also working more often with the University of California in Irvine. We have started some great, joint projects in the field of regenerative medicine and in the cardiovascular sphere. Brightlands Maastricht Health Campus has even opened an annexe in Irvine to establish contacts, to stimulate mutual valorization themes, and to make it clear to the business community that there is much to gain and learn at our campus.

Leading international researchers take Maastricht seriously and good international universities and companies are keen to work with us. We invariably get enthusiastic reactions when we explain how we work here. And it is beginning to strike us that we are increasingly being called with requests for collaborations. For me, these are clear signals: we are turning words into concrete actions. In other words, we are crossing borders.

Marjolein de Vugt

The ultimate cure for dementia may not be available in the short term. That is why Marjolein de Vugt focusses on the possibilities: supporting patients and their loved ones in their search for ways they can get the most out of life together.


dress
to
express
observant

CV

NAME Marjolein de Vugt
WORK Professor of psychosocial innovations in dementia, healthcare psychologist at the Maastricht UMC+ geheugenpoli, and Director Alzheimer Centrum Limburg.
BORN 17 August 1975
EDUCATION Mental health sciences and biological psychology at Maastricht University
LIVES in Meerssen
HOME Married to Alard, mother of a son of 13 and a daughter of 10 years old. **BRIGHTLANDS MAASTRICHT HEALTH CAMPUS** Potential facilitator in valorisation plans
VALORISATION (amongst others) Partner in Balance: a support program for people with dementia and their families

Breaking the taboo on dementia is the first step.

INTRODUCTION Let us go back in time to the year 2011: Although the diagnosis of dementia can be made at an increasingly earlier stage, appropriate help for that phase is hardly available. This brought us to the idea of what has become Partner in Balance: a support program for partners/caregivers of patients with dementia in the early phase. After an intake interview, the participants follow four self-chosen modules online. A certified coach - often a case manager for dementia or a practical support counsellor for elderly care – offers them advice and assistance. Nine years of testing, refinement and research were carried out. In the year 2020, Partner in Balance entered the market.

FINALLY "It has been a long road indeed. Together with users, caregivers and experts in the field, the program has been very conscientiously developed. My colleague Lizzy Boots has obtained her PhD at Partner in Balance and is now working as a Postdoc researcher with us. As befits any good scientist, we tested the effects in a randomized control trial. After confirmation that the results of Partner in Balance were indeed as good as we thought they would be, we also knew: we must put this in practice. I do not see science as an end in itself. What matters is that with our scientific knowledge we can make a difference in people's lives. In my case: in the lives of people with dementia and their loved ones."

MUCH EARLIER "We have used the year 2019 to chart 'the market'. Where are the facilitating factors and parties and where are possible barriers? Financing is one such barrier: who is going to pay the bill? Which sources or entrances are there? Do you have to get in contact with the WMO or the health insurer? The patient's health insurer or the partner's health insurer? Healthcare is incredibly complicated. We have spoken to many parties, also in a Euroregional context. Health insurers, local authorities, physicians, case managers and so on. I have learned a lot from this. Especially that as a researcher you should distance yourself of your academic, scientific world way earlier in the process. You have to go into the field to know what is going on and what it is like in practice."


“What matters
is that with
our scientific
knowledge we can
make a difference
in people’s lives”

THE CORRECT WAY? “You can go on collecting information forever, you can keep tossing and turning and comparing, but the moment will come that you have to take a decision and go. You only know afterwards whether it was the right decision or not. In science, it is no different. I always tell my PhD students: it is not about the ultimate choice, it is about making a choice that you can substantiate with good arguments. After all, there is more than one way to skin a cat. Brightlands Maastricht Health Campus has thought along with us, examining possible options and possibilities. The decision has now been made: we are going to bring Partner in Balance to the market. To this end, we have entered into a partnership with the ICT company that made the data program for us and with which we have worked for years. They will take on the technical and commercial side so we can concentrate on content. It is going to be exciting anyway: we will have to wait and see if this partnership is going to be successful for us.”

HARD “As a researcher, I feel responsible to bring good solutions to society. But where does your work and your responsibility as a scientist end? We often lack entrepreneurial skills, we are not qualified for market introductions and everything that comes with it. On the other hand, I have learned a lot from this process of market research. Besides, as a researcher, you want to be and remain involved in your project from a content point of view. There are always new developments and of course, you want to ensure quality. Moreover, we have worked on it for years and invested in it. And don’t forget: even an implementation phase can be extremely interesting from a research point of view.”

EXPECTATIONS "I have difficulty with great promises being made in the field of dementia research, whether appropriate or not. Statements such as 'in ten years time we will have the medicine…' and 'the ultimate solution to dementia' raise great expectations. But the reality is that dementia is an extremely complex disease. Even the most promising studies and trials in recent years have only led to disappointments. However, I am more optimistic about developments in the prevention of dementia: we know more and more about the consequences of lifestyle for example, vascular risk factors that play a role in brain health. We have developed an app for this purpose: My Brain Coach. We are currently exploring how we can continue to develop that app and put it on the market. There is also interest from abroad."

MISSION "We can make great progress in improving the daily lives of people with this disease. Breaking the taboo on dementia is the first step. Let's start talking about it openly so that patients and their loved ones feel more accepted and supported. In my inaugural speech in 2017, I talked about several elements that are very decisive for the extent to which you can improve the lives of people with dementia. It all starts with the right timing in which you offer and deploy those interventions. Partner in Balance is a good example of this. This tool helps you to get along well in the early phase. The next step is to make a good match between the personal needs of the patient and the tools you offer. Technology can play an important role in this tailor-made work. And we need to improve access: if we can think of something that can help, then people should be able to find and use it easily."

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WE ARE LOOKING FOR ENTREPRENEURS

Brightlands Maastricht Health Campus is a valorization campus. Our aim is to translate interesting ideas from science into practice and then bring them to the market - in this case the doctors, patients, and society. There are plenty of good scientists with promising ideas. But those ideas need to be translated into products and services that the market needs. In order to do that and subsequently make a commercial success of it, we are looking for entrepreneurs: men and women with a real feeling for entrepreneurship and a passion for science.

If we had to draw up a job profile, it would read as follows:

Promising scientific ideas are looking for entrepreneurs (m/f) to enter the market together and conquer the world.

Your age is unimportant, but you need to know all the ins and outs of business, have strong affinity with health and life sciences, have access to a good network, and you need to be enthusiastic and ambitious, willing to co-invest, part-time or full-time.

At the same time, we - and the entrepreneurs who read this - know very well that it is mainly about the personal touch. That's not just the click between people, but also a click with the idea - the product. And that requires a tailor-made approach.

If you or someone you know matches this job profile, let us know. We'd love to meet you and anyone else who matches this profile.

A RARITY: A SCIENTIST WHO IS ALSO AN ENTREPRENEUR

As we mentioned earlier, Brightlands Maastricht Health Campus is looking for entrepreneurs who can bring our start-ups to full bloom. In the absence of a suitable entrepreneur, one of our business developers can temporarily fulfil the role of CEO/entrepreneur. After all, not all scientists can and/or want to be entrepreneurs. This was different for Michele Genangeli of Genax. He always knew that one day he would start his own business just like his grandfather and his father did.

ENTREPRENEUR AND SCIENTIST

Michele (1990, Jesi, Italy) is a scientist and an entrepreneur. Actually, this needs to be corrected, as he prefers the order entrepreneur first and scientist second. “I love doing business and I love science,” explains Michele. “It allows me to tell two versions of the same story, so that both parties understand it and find it interesting. Moving from one version to another, sharing my story, and making contacts is not only easy for me, I also enjoy doing it. You can be the best scientist with a fantastic idea, but if you can’t explain to potential clients and financiers what you’re doing, why you’re doing it, what the market can gain from it, and what it can do for them in a language they understand, then you won’t get very far.”

WITH A LITTLE HELP

When he started with Genax he had hardly any experience and certainly not with doing business in the Netherlands. But he was ambitious and had a clear goal in mind. “Brightlands Maastricht Health Campus has the knowledge and the connections and I have gratefully made used of that. One of their driven and skilled business developers helped me through the whole process and I learned a lot from her.”

AMBITION

“By the end of this year I want to have signed the first contracts with clients. That’s why I’m now looking for a partner who can realize this together with me. I want an enthusiastic person with a business background who will make new contacts for Genax. Now we are still a start-up, but with the right people on board we can take real steps forward and grow.”

If you are that person, send an e-mail to m.genangeli@genaxbv.com

ABOUT GENAX

Michele holds a European patent for a double-sided wearable fabric that protects the human body against electromagnetic radiation, such as from mobile phones, Wi-Fi and Bluetooth, and also from medical equipment. His company Genax is located on Brightlands Maastricht Health Campus. The idea is to grant licences to parties who want to incorporate his fabric in clothing.

The idea for Genax was put to him in 2014 by his father who ran into an acquaintance at a conference who was working ‘on something’ and that perhaps Michele would be interested in this as he did, after all, have some spare time after completing his Master’s degree in Medicinal Chemistry and Pharmaceutical Technology. To cut a long story short: after thorough research, various improvements to the original idea, various prototypes, several tests, finding a few financial partners, and completing a double PhD (Marie Curie Early Stage Researcher) in both Maastricht and Camerino, Michele applied for the European patent in 2018 and founded his company Genax at Brightlands Maastricht Health Campus.

Medace: faster and easier from patent to patient

Medace

- Pronounced Med-ACE. with the accent on the second syllable. the name stands for Medical Ace: a play on the word "accelerator". It also means you're done in one fell swoop; after all, you'll find everything you need here. under one roof.

Over three and a half years after the presentation of the very first concept, Medace opened its doors at the Brightlands Maastricht Health Campus on January 6, 2020. After only six months of stripping, rebuilding and furnishing, three buildings rose up at Gaetano Martinolaan 63 in Maastricht, offering a total of 2,000 (!) m2 in creating a work-study environment for researchers, startups and established companies. Medace helps them to optimize their medical and biomedical concepts to ensure they actually become available for the patient.

The first time we spoke to the "Medace team" - CEO Daniëlle Curfs and CBO Kurt Gielen - was in mid-August 2019. They were in the middle of the impressive renovation project at the time. During the remodelling, the fourth floor of the building served as a temporary workspace. The long, still relatively dust-free tables are where potential future customers will be welcomed. This is also the work and meeting table for the construction team, who are constantly entering and exiting this space. It's where they discuss their progress, and arrive at quick, on-the-spot solutions for the relentless stream of "challenges" that are a natural part of such a large and complex project. A few floors down, on the ground floor, a small army of builders installs many kilometers of cables and pipes. Partitions rise up and though the contours of the new building are visible, there is still plenty of work to be done.

How it all began

The idea for Medace actually started at the Chemelot Institute for Science and Technology (InSciTe). Even though it is remarkably common for an academic invention to be more or less proven, this doesn't always mean it makes it to the clinical-testing phase. After all, there's a good reason this classic, unfortunately frequent 'gap' in the research world is referred to as 'the valley of death.' This was the reason that InSciTe commissioned the construction of its own biomedical facility at the Brightlands Chemelot Campus in 2015, including four cleanrooms: two for cell therapy and two for medical devices.

How it expanded

Daniëlle was involved in this initiative from the beginning. "We had startups lining up in no time to move in on a temporary basis. It was obvious we'd found a gap in the market. We soon realized that before you can clinically test your cell therapy product or your medical device on patients, you also have to comply with very demanding laws and regulations and strict quality requirements. In addition to the substantive aspects, this presents many researchers with even more huge challenges and pitfalls. This is how the concept for Medace came into being; not only is it a learning and working environment that makes good cleanrooms and state-of-the-art equipment available, it's also a place where we guide our customers through the whole quality and regulations procedure, step-by-step. I presented this plan to the InSciTe board and that got the ball rolling."

Medace today

Kurt draws a nice, clear comparison. "We fulfill the role of the landlord. You move in here temporarily, and we help you get started and to the point where you can stand on your own two feet. You get to choose what you need from us, and although you do it all on your own, we do teach you how everything works and how to go about it all. After all, there's a good reason our full name is 'Medace, biomedical co-workspace."

Excellent example of collaboration

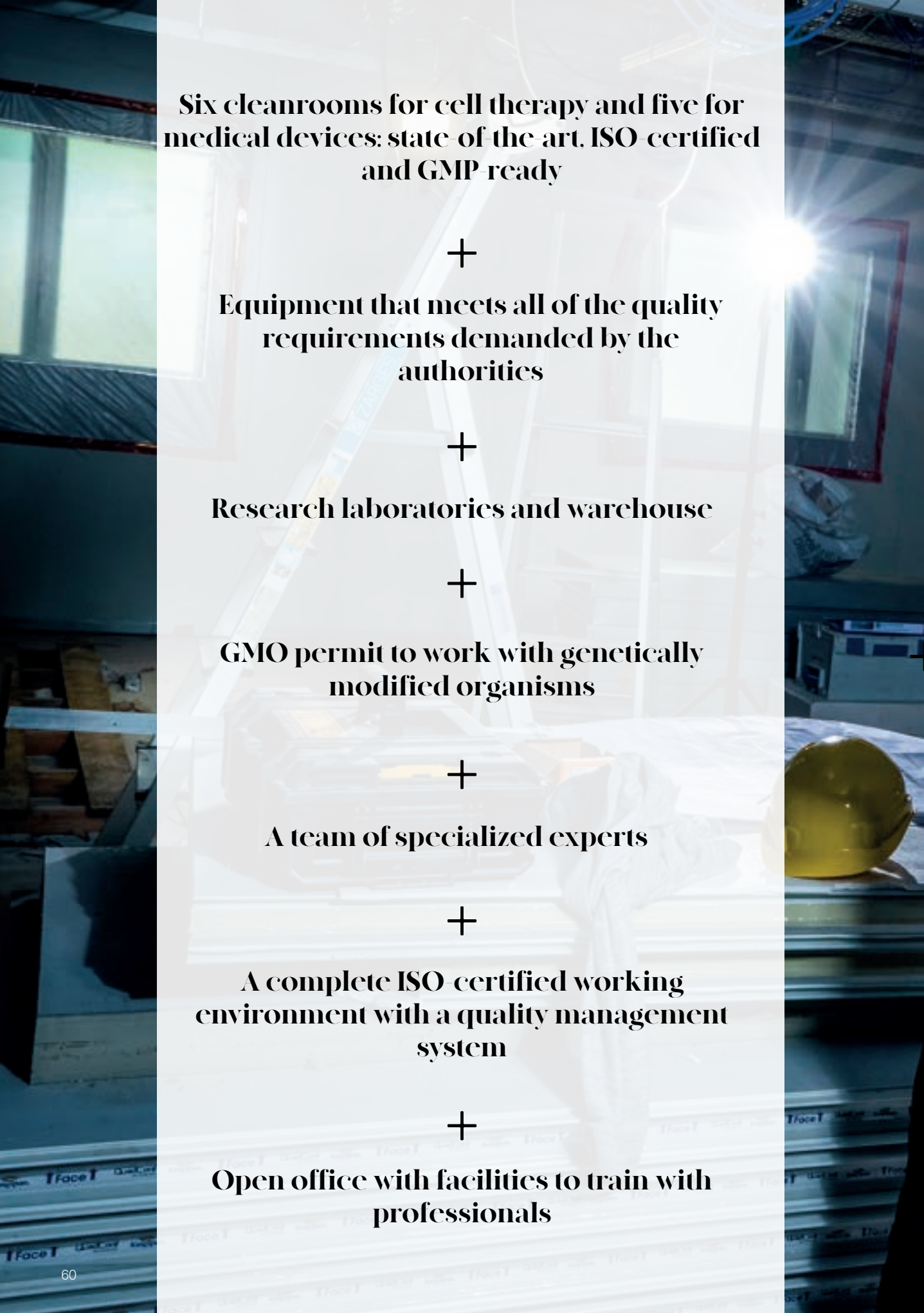
Medace's matrix concept appeals to the targeted investors. Universiteit Maastricht Holding, LIOF, Maastricht UMC+, the Brightlands campuses in Maastricht and Geleen as well as the Province of Limburg are making a total of 7.4 million Euros available. They are very impressed by the added value that Medace offers Limburg entrepreneurs and researchers and the approach of developing your own knowledge within the region. This is Brightlands' mission too, after all. Daniëlle: "Medace is a perfect fit for Limburg. It connects two campuses and helps attract knowledge to this region."

Plenty of interest

After the press release was published announcing the final go-ahead, the phone started ringing off the hook. Kurt explains that the concept is unique in the Netherlands, but that they are also seeing demand from abroad. Investors view Medace primarily as a social investment. Investing in Medace means investing in Brightlands, in Limburg and in the future. Daniëlle: "Medace wants to keep the threshold for researchers and entrepreneurs low in every area, including finance. We do have to be viable, of course."

ISO certificate

One of the major challenges was getting Dekra-accredited for ISO certification. Daniëlle: "Initially, they had their doubts about the fact that there are several projects and companies running at one location simultaneously. We were able to convince them that this isn't a problem, on the condition that you apply a clear and consistent code of conduct together, and closely adhere to the safety requirements and protocols. It took a while, but after a year and a half we finally received the coveted and indispensable ISO certificate. I personally view this as one of the greatest milestones of what is now Medace. The authorities accept the model and the fact that several parties are working together at one location."



Six cleanrooms for cell therapy and five for medical devices: state-of-the-art, ISO-certified and GMP-ready

+

Equipment that meets all of the quality requirements demanded by the authorities

+

Research laboratories and warehouse

+

GMO permit to work with genetically modified organisms

+

A team of specialized experts

+

A complete ISO-certified working environment with a quality management system

+

Open office with facilities to train with professionals

Getting down to business

Medace BV was officially founded in September 2018. All of the plans put down on paper had to be translated in practice and the search for the ideal location began. The fact that this would be the Brightlands Maastricht Health Campus was obvious. When the location at 63 Gaetano Martinolaan became available with the help of the Municipality of Maastricht, the real work could begin. Medace started out as a 'lean and mean' organization, and Kurt and Daniëlle worked hard to refine and optimize the concept. They naturally sought advice and recommendations here and there but did as much as possible themselves. Kurt: "You can definitely say we experienced a very steep learning curve here." Daniëlle: "It might sound a little crazy with such a big facility, but we are actually a startup." As one would expect from a good landlord, they are extremely committed to 'their baby'. This commitment is in fact so serious that the CEO brought her coffeemaker from home to the office and even came to clean the toilets for the builders on the weekend. Kurt: "Yes, it may sound extreme but everyone working on the creation of Medace was very enthusiastic, even the construction workers who had to start all over again a couple times. Put simply, this was because they also saw why we changed course and realized that we want to start in the most optimal way possible."

We met with Kurt and Daniëlle again at the end of January 2020. The building has undergone a true metamorphosis in the meantime.

Seven months ago, this was all one giant construction site. Now it's a brand-new, clean, spacious and open workplace filled with people. Lots of people! On January 2, 2020, the eight-man-strong, proud Medace team, which, in addition to Kurt and Daniëlle, now consists primarily of specialist quality staff and technicians, welcomed their first customers. It was a start many can only dream of. Daniëlle: "Eight projects and two companies are based here now. Our largest client is InSciTe which has placed their seven ongoing projects with us. We have a colorful mix of both young and experienced researchers, starting entrepreneurs, and scientists who have made the conscious decision to further their careers outside of the halls of academia."

Quality

During the tour, Kurt explains again how quality is the guiding principle at Medace. "Anyone interested in taking their products or services to the market must first complete this process of very careful documentation according to strictly defined standards. Those working on the projects that have been running for a few years now say that although the process is far from fun, it is absolutely necessary and useful. Not every researcher is cut out to complete the Medace procedure. And in all honesty, we have also had researchers who couldn't seem to get out fast enough. We can spot the enterprising researchers a mile away; their approach is different from when they are studying something for research's sake. People don't come here to work on getting published. Here, you work on actually finding a solution to help patients."

Working and learning

Daniëlle: "Our people work on our customers' teams on a temporary basis. We teach them how to structure their work according to the quality management system. This ranges from approving or rejecting incoming deliveries to learning how to optimally clean the cleanroom and how to ensure your packaging and labelling are done correctly, and so on. All of this information and expertise is readily available at your workplace. You work in this setting while you learn."

Praise the open office

Kurt has nothing but praise for the open office concept. "It may seem like a contradiction, maintaining strict secrecy and working in an open office. And yet this is exactly this goes at Medace and it works really well. In terms of content, of course, it's every man for himself. This is only logical since the products made in these cleanrooms are potential working capital and therefore a trade secret. The learning and working environment that Medace actually stands for is reinforced when the tenants can learn with and from each other about all of the elements of entrepreneurship."


"Our ideal customer? First and foremost, they have to have an enormous drive to ensure inventions make it to patients. They realize that we are embarking on a major project together, and make the conscious choice for guidance, support and cooperation"

IN THE NEWS

Thursday June 6, 2019

MEDTRONIC 50 YEARS IN THE NETHERLANDS

On June 6, 2019, Medtronic celebrated its golden anniversary with a festive ceremony in Heerlen. Fifty years ago, Medtronic founder Earl Bakken decided to set up the first overseas branch of his med-tech company, Medtronic, in Limburg. Half a century later, 86,000 people worldwide work for this company which operates in 150 countries. Limburg still plays a major role, not the least of which is the Bakken Research Center at the Brightlands Maastricht Health Campus.

Nearly 400 people work here on research and innovation. In Limburg, Medtronic is a true "job engine" with another three branches in Heerlen and Kerkrade. A total of 1,840 people work at Medtronic in Limburg. At the beginning of this month, the Bakken Research Center was also the venue for the European Science & Technology Conference. For the 20th edition of this event, 400 Medtronic scientists and engineers travelled from the company's facility to Maastricht to discuss new medical technologies, share research findings and explore opportunities for collaboration. This is just one of the many ways Medtronic uses collaboration to advance innovation.

Shopp

CRB: 'Green & clean' production of cosmetics'

What's important to you when buying a box of eye make-up? Just the color? Or would you also like to know how that product is made? More and more consumers are consciously opting for organic make-up and care products made from natural raw materials. Such a box of natural eye shadow could have been made at the Brightlands Maastricht Health Campus. The company CRB Benelux BV is specialised in the 'green & clean' production of cosmetics and skin and hair care products. In their laboratory CRB is constantly looking for environmentally friendly ways to process natural raw materials into polymers, liposomes and ceramides. For example, CRB is working on an active molecule that can be used in anti-aging and sun protection products . CRB Benelux BV is led by Pietro Rando, who has almost 35 years of experience in the development of innovative cosmetic products.

ing

If our campus was a store... what would we have on our shelves? Is there a little bit of fun shopping here? Of course there is! Here is a small selection from the wide and impressive assortment of Brightlands Maastricht Health Campus.

Maastricht Instruments: The Respiration Chamber: insight into energy management
Lifestyle advice is becoming an increasingly important part of the fight against diseases of affluence. The Respiration Chamber helps researchers to gain more insight into the energy management of specific patient groups. For example, specific advice can be given in the areas of nutrition, exercise and sleep. A Respiration Room consists of a completely closed circuit connected to an innovative analysis system. This system continuously measures the amount of O2 and CO2 in the exhaled air. All nutrients and waste products are also accurately measured. This is done 24 hours a day, with a maximum of seven days. After this period, researchers have a very accurate picture of the subject's metabolism and energy management. The Respiration Room was conceived, developed and built by a consortium of scientists and technicians from the MUMC+ under the leadership of Dr. Paul Schoffelen. Maastricht Instruments launched this special chamber in 2011 and received a large order from China in 2019. In 2020, the two advanced Respiration Rooms and its measuring systems will be installed at Fudan University in Shanghai. A simpler basic module was already installed in 2019. In this way, the Brightlands Health Campus Maastricht contributes to tackling emerging diseases of affluence in China.

www.maastrichtinstruments.nl

SuperOma Box: the healthy meal that keeps grandma's (and grandpa's) fit
With a bit of luck we'll soon find a special package in the supermarket, meant for people over 65 who want to stay fit, vital and resilient. The package contains ingredients with extra protein, vitamins and other nutrients that seniors need just a little bit more than younger generations. With this package they cook a healthy meal quickly and easily. In addition to the recipe and the ingredients, the box also contains some extras, such as a hand out that explains why protein-rich food and exercise are important to maintain muscle strength and condition. Furthermore it contains a fun activity that stimulates seniors to keep moving plus a game to stimulate the brain. The idea for the SuperOma meal box was conceived during the Dutch Hacking Health. The team of Valéry Hawinkels-Hellwig (QA manager at Clinical Trial Center Maastricht), and Michelle Verheijden (doctor in training to become a GP researcher), together with market parties are examining the possibilities of actually launching the box to the market or using it in healthcare.

www.dutchhackinghealth.nl

CryoSol: In 2020 the company CryoSol World brings the new VitroJet to the market. This device is the successor to the famous Vitrobot that was developed by the engineering department of Maastricht University some twenty years ago. Thanks to the preparatory work of the Vitrobot, biological structures in cells and proteins could be clarified much better. Diseases such as Alzheimer's and cancer are still being investigated using this method. However, researchers encountered the problem that only 10% of the frozen samples ultimately provided a good picture. The new VitroJet solves this problem by optimising the sample preparation. It is expected that 80-90% of the frozen samples are of good enough quality to be sharply imaged under a microscope. This allows researchers to use their expensive microscopes much more efficiently and significantly reduces the turnaround time of a study. There is interest in the VitroJet from all over the world.

www.cryosol-world.com

HERMAN AND

"I believe that you should always follow your passion"

CRISTIANNE

"My motto in life is work hard, but also to enjoy the good things in life"

CRISTIANNE RIJCKEN, FOUNDER AND CSO OF CRISTAL THERAPEUTICS AND HERMAN KINGMA, PROFESSOR EMERITUS OF VESTIBULOGY, SEARCH FOR THE DIFFERENCES. YET THEY ALSO DISCOVER MANY SIMILARITIES.

“And there I was in conservative Leiden, with my long hair and floral blouse. It wasn’t a good match”

- Herman

Herman: So, I understand that you are educated as a pharmacist and that you now run a company on the Maastricht campus? **Cristianne:** That's right. I specialized in industrial pharmacy and in 2007 I got my PhD in biopharmacy: bringing medicines to where they need to work via advanced dispensing systems. A number of patents came out of that PhD and that is the basis of what is now Cristal Therapeutics. We started in 2011 and I am now the scientific director of a company that employs fifteen people.

Herman: Do you see yourself more as an entrepreneur or as a scientist? **Cristianne:** I think just a little bit more as an entrepreneur. But the best is when science and entrepreneurship come together, when you discover something substantive, to apply for a patent on that, and to get another company to take out a licence for that technology through an exploratory collaboration. In this way, we work together to ensure that we literally make the translation into creating an impact that benefits patients. For me, that is the ultimate moment of happiness in the field of work. **Herman:** It makes you smile, that's great to see. **Cristianne:** Yes, I'm also very proud of our team that took so many steps so that we were able to translate this concept into reality. It is really a case of 'from bench to bedside'.

Herman: What exactly is your concept? **Cristianne:** We encapsulate a medicine - currently mainly anti-cancer medicines - in a nanoparticle. In contrast to the free medicine, this nanoparticle can circulate in the bloodstream much longer and accumulate in the tumour due to local anomalies. The nanoparticle only falls apart in the tumour, exactly where the medicine has to do its work. This means more action in the diseased tissue and fewer side-effects along the way in the healthy tissue.

Herman: In which phase are you currently? **Cristianne:** We have now clinically tested our 'carrier system' in more than 80 patients. There is indeed four to five times more of the medicine in the tumour and the most common side effect of the regular method - a reduction in the number of white blood cells - we have reduced by more than 70%. We are not there yet, but we are learning a lot from this process, including from the mistakes of others. **Herman:** Yes, you do tend to learn from mistakes. How are you moving forward now? **Cristianne:** Now a larger Phase III study has to follow; for implementation and financing we are in discussion with several external partners. In addition, we are working with other pharmaceutical companies worldwide, as well as with another company in Maastricht. Their medicine is still in the early stages of development. And what about you? Professor Emeritus of vestibulogy... I had to look up what that was.

Herman: Don't worry, you're not the only one. You know, when I applied for a job in Maastricht in 1983, I hardly knew anything about the vestibular system. When I was seventeen, I actually wanted to become a professional oboist, but I knew I wasn't good enough. At my father's insistence, I went to study medicine. I studied in Leiden, the most conservative city in the Netherlands, and there I was with my long hair and floral blouse. It wasn't a good match. **Cristianne:** What happened next? **Herman:** I went to study art history in Paris! I graduated but I didn't want to work in a museum. So, I went to study again. This time I chose biology because my best friend was studying that. Later, I added physics to the programme, with the main subject being Medical Physics in Amsterdam. After that I did Biophysics and got my PhD in Leiden ironically enough.

Cristianne: It seems that you could have gone in any direction. So, why did you choose to coordinate scientific research and set up a vestibular department at ENT in Maastricht? **Herman:** I really wanted that job because it was a niche with basic sciences and research on the one hand, but also very much focused on application. And, of course, it involved a brand-new department, which meant playing a pioneering role those days. **Cristianne:** Did you also have direct contact with patients? **Herman:** Of course, I became a clinical physicist. That was a new study programme at the time. Together with two other physicists, I was closely involved in setting up that new specialism. It was our vision to really bring physics into the field of patient care. And that is how I became the first vestibulologist/clinical physicist in the Netherlands. The doctors I worked with knew that if a patient experienced dizziness, they could send them to Herman. Even though I wasn’t an ENT doctor or neurologist, I was in surgery under the title of professor. It was precisely this contact with the patients, together with my background in physics, that made it possible to come up with solutions.

Cristianne: I am more the pharmacist who wants to understand the biological behaviour of a medicine and how to optimize this further. Didn’t you develop something that is now being used by patients? **Herman:** That’s right. I developed an artificial vestibular system - the Vestibular Implant - and the BalanceBelt. It’s actually a funny story... All the publications were about vertigo: dizziness, nausea, vomiting, and poor vision. But what was forgotten is that the vestibular system also has a function. I have focused on the two key aspects of the vestibular system: being able to walk better, stand better, and maintain balance, and the second is making sure that you have dynamic vision. That has become my passion. When a patient with vestibular system problems threatens to become unbalanced, the BalanceBelt emits vibrations. The wearer of the belt then automatically corrects the body posture and feels balanced again.

Cristianne: Are you going to market the BalanceBelt yourself? **Herman:** No, I'm certainly not going to do that myself. We have licensed the further development. Did you know that almost a quarter of people over the age of 65 have problems with their balance?

Cristianne: That's a lot of people! That means that the BalanceBelt could become quite big? **Herman:** We had come a long way with a company from Denmark, but it was taken over by an American company. They immediately asked if they could make a profit with this in the short term. But this is not the case, the proof of the effect still needs to be expanded and studied more closely. So, now we went ahead with that company's biggest competitor. I am convinced that we have a good product and I want to get it to the patient whatever the cost. I'm not at all interested in how, as long as it gets there.

Cristianne: I actually find it fascinating that so many aspects come together in doing business: the product development, following fundamental science, building the internal organization including the motivation and growth of employees, consulting with investors and external partners... There are so many different elements. **Herman:** That's exactly what I hate. I don't want to get involved in all that fuss around it. Just let me do what I'm good at: inventing, being creative, motivating people.

Cristianne: Do you have someone who can do that kind of operational stuff for you? **Herman:** I quickly get people and budgets together. I was lucky to get my ideas across clearly and that a lot of people from the industry were interested. They just asked, 'Herman, how much do you need?' For many industries I am a kind of unpaid consultant. We help each other. That is how it worked back then, you deliver a service and get one in return. I didn't do it in my own interest or for commercial reasons, but because I wanted to achieve something for my patients. Once, when I had to set up an entire department and there was hardly any budget for good equipment, we were able to arrange it that way.


"SAYING NO IS
ONE OF THE
MOST DIFFICULT
THINGS IN LIFE"
- Herman


“We work together to ensure that we literally make the translation into creating an impact that benefits patients. For me, that is the ultimate moment of happiness in the field of work”
- Cristianne
- Cristianne

Cristianne: I know that you're a professor emeritus. Is there something else you'd still love to do? **Herman:** My wife just laughs when I tell her I've officially retired from academia. She doesn't see any difference. I still regularly travel all over the world to transfer knowledge, to give lectures and workshops. I just returned from a trip to Russia, Jordan, and Lebanon. Next week I'm flying to Seoul, then I continue to Bangkok for a lecture, and then I'm off to Denmark. I will be home for a week before I leave for Bosnia-Herzegovina and Brazil. No, I absolutely do not feel like I am retired. For the last three years, I have been in part-time employment at ENT, I am a professor at Aalborg University in Denmark, and director of the Tomsk International Science Programme. I'm a really happy and fulfilled person.

Cristianne: In Tomsk in Siberia? **Herman:** Yes, in West Siberia. It has always been my dream to build the educational capacity in Russia and to create something that offers a future for the young people there. The programme is similar to the Maastricht Science Programme. You train people to a very high level of specialization, but they also learn to communicate and collaborate with people from other disciplines. Not in a multidisciplinary way, but more transdisciplinary. Over the past decades I have often been involved in setting up new multidisciplinary programmes, such as technical medicine, clinical technology, and biomedical technology. But I've gradually learned that that's not the right way to go. You just become a jack of all trades, master of none.

Cristianne: That's fascinating. How do you get it all done? You have to say no once in a while? **Herman:** Saying no is one of the most difficult things in life.

Cristianne: I'm often asked for interviews or lectures and no matter how much I enjoy doing all these things, I want to retain my focus and that sometimes means making difficult choices. I have my work, I provide informal care, I prioritize my friends, and of course I also want a little time for myself now and then. It doesn't have to be a lot, but a few hours per week is always great. It's just a very tricky balancing act.

Herman: I certainly recognize that. I'm one of those people who always wants to help others, which gets me into trouble myself. You make all kinds of promises that you can't keep simply because you don't have enough time. **Cristianne:** Do you feel stressed? **Herman:** It's become part of who I am. I can deal with it, but that doesn't mean that I think I'm doing it all that well.

Cristianne: You've achieved so many great things, also on an international scale. What would be your lesson for me? What is the most important tip that you could give me? **Herman:** It's more a type of philosophy for life. I believe that you should always follow your passion. If I look at my own life, nothing was planned. It just happened that way. I've never been able to discover for myself what the exact common thread was. You often make the most important choices based purely on emotion. I chose biology because my best friend was studying that...

Cristianne: Unfortunately, my mother started showing the first symptoms of Alzheimer's disease around the age of 60. That really got me thinking. I come from a family of intellectuals and the idea of losing your memory is incredibly painful. My motto in life is work hard, but also to enjoy the good things in life to the full. I try to make sure that I always live up to that motto.
Herman: Most young people think differently about that. My wife and five children are the most important thing to me, but I'm gone half of the time. That's the reality of the situation and it's the way it has always been. I enjoy everything, and I really mean everything. I love strolling through cities, taking a look around, meeting people, talking to people, sharing my knowledge, and discovering new things. At no moment did I ever think that I couldn't or could no longer do something. Carl Gustav Jung said at the age of 85: 'just keep on living as if you'll never die.' I think that's a good plan.

"I'VE NEVER BEEN ABLE TO DISCOVER FOR MYSELF WHAT THE EXACT COMMON THREAD WAS. YOU OFTEN MAKE THE MOST IMPORTANT CHOICES BASED PURELY ON EMOTION"

- Herman

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MAASTRICHT

Meet & Greet at Bandito

Don't we all go to Bandito Espresso? To work, for an appointment or to relax and catch up. There' s almost always someone you know. And if not, no problem: with a cup of coffee or tea - with or without something sweet - or with a freshly made soup, it is easy to meet new people.

Erik Driessen: "I've got a lifetime membership here"

At first we think Erik - professor of Medical Education at the Department of Educational Development and Research at FHML - is joking, but he's dead serious: "Between all the certificates on the wall in my office is my personal 'white goldcard' from Bandito. Sometimes I even shorten an appointment to get my coffee. But I also meet here on a regular basis. It's very practical. In the morning I drink cappuccino, but in the afternoon, I switch to espressos. A life without Bandito? Impossible! In that case I'll need to find another job. Two years ago, they were closed during the summer holidays, so I decided to extend my holiday."

Anemoon Jeeninga: "Taking a short break from work"

"I work on the third floor of this building, so I come here regularly. Usually for the cappuccino or a freshly baked chocolate chip cookie. For my Master's in Cognitive Neuroscience, I study the effect of the small brain - the cerebellum - with patients suffering from the rare metabolic disease Galactosemia. They have to deal with all kinds of cognitive problems, including language problems. On Wednesday afternoons I work as a research assistant on an MRI study of children with dyslexia."

Jaïr is also a 'regular' at Bandito. Mostly with classmates, a coffee and a 'hummus de luxe' sandwich. He is from Aruba, but for his studies he moved to Maastricht: "Limburgers are warm, friendly people. I'm having a great time here." He is now doing a research master's degree in Cognitive and Clinical Neuroscience: "You know, it feels so good to be here among all these researchers! They do a fantastic job and it's very easy to get in touch with them and have a little chat. I hope to become a researcher myself someday. But maybe I'll also specialise in the clinical direction. All options are still open."

Jaïr van Nes: "I'm having a great time in Maastricht"

More than 21 years ago, Jenny ten Haaf and Astrid Brouwers were direct colleagues at the hospital's finance department. Today they are former colleagues, but they both still work at the Maastricht UMC+. Jenny as staff consultant at RVE Operative Medicine and Astrid as staff consultant Quality and Safety. Jenny: "We meet a few times a year to catch up. This time we chose Bandito." Astrid: "It's good to be here. It's nice and quiet and they serve excellent coffee."

Jenny ten Haaf and Astrid Brouwers: "We've come to catch up"

Josep sits alone at a table as we can hear him chuckle. "A podcast of a Spanish comedian," he explains, taking off his headphone and introducing himself. "I was born and raised in Mallorca. After my studies in Seville I worked in Newcastle for a year and recently I started working as a QC associate for Lonza Netherlands. I check that all products meet the quality standards and protocols. I don't know many people here yet, but I see myself as a social person and a lot of internationals work here, so it's pretty easy to get in touch. I am still looking for a place to live. Don't you guys happen to know something?"

Josep Amengual: "Good environment, good people, good food"

KIM VAN DER HEUL OF TRIAS:

"IF WE DO OUR WORK WELL, WE MAKE A PROFIT"

WHAT ABOUT THE MONEY? This question is constantly being asked in every company, large or small, world-famous or just starting out, operating locally or internationally. For CFOs of well-functioning multinationals with sound business plans, the financial doors will undoubtedly open just a little more easily than for the small starter with a potentially good idea that may one day result in a marketable product. But there's no need to panic! Appropriate financing is also possible for the start-ups and spin-offs at Brightlands Maastricht Health Campus as is smart assistance with looking for and applying for subsidies. And that brings us to Trias.

Kim van der Heul is businesses and innovation manager at Trias. "We have been working as subsidy advisers for the public sector and the business community for more than twenty years. Although the word subsidy doesn't quite address the complete picture as subsidies never cover the entire costs. That's why we always start from the overall plan: what stage is your company in and where do you want to go? What steps do you need to take to get there? Together with the client, we then work out a tailor-made financial strategy by considering the best approach to further develop and finance the idea. And finally we look at what is needed to get the product on the shelves."

WHY DID YOU CHOOSE THE CAMPUS IN MAASTRICHT?

"We have two branches, one in Venlo and the second we opened at the start of 2019 on Brightlands Maastricht Health Campus. We focus on companies with growth plans and international potential and on this campus we can really cater to that. Here you will often find highly innovative companies with a scientific basis and there are almost always long-term, complex, and costly research and development processes. We are well-versed in the world of health and life sciences. The medical sector is a unique world involving high sums of money, long processes, high knowledge-intensiveness, and a lot of regulations. For a client it is, of course, very pleasant if your consultant knows what is involved in certification or how an ethics committee works."

THERE ARE MANY START-UPS ON THIS CAMPUS. IS THIS AN INTERESTING MARKET FOR YOU?

"Most competitors will say that this is a difficult market, as there are a lot of ideas that are not always very concrete and there is little money. This, indeed, makes working with start-ups more time intensive. But we find it very interesting that we can help them develop their business from the very beginning. We grow along with the company, you get to know each other well, and mutual trust is created. That combination is an excellent basis for an enjoyable and successful collaboration."

WHY ARE SUBSIDIES SO IMPORTANT FOR START-UPS?

"As a start-up, you are often not yet of interest to investors or you don't yet have the connections to get in touch with these parties. Whether or not a subsidy is obtained is therefore sometimes literally of vital importance. Although a subsidy probably won't finance the entire process, every step you take helps to make your idea become more mature, which in turn strengthens your proposition for the next financing phase."

HOW DO YOU FIND THE RIGHT SUBSIDY?

"Subsidies come in all shapes and sizes. Not every subsidy is interesting and relevant to everyone. Each subsidy is created with a specific purpose in mind and your application must fit in with that purpose. But the subsidy also has to match your needs. In the world of subsidies 'technology pulled' is the current standard: there is a clear need from the market and your invention must offer the solution. A brilliant, technically innovative and complex invention alone is not enough. An important part of our work is to translate the content into input that fits the subsidy in question."

SO YOU ALSO HAVE TO BE ABLE TO 'SELL' YOUR PRODUCT/INVENTION?

"Exactly. It's often the people who are focused on technology or science who no longer see that some things are really innovative or special or they aren't able

to properly put it into words. I always look into the case and read as much about it as possible. Of course, you never reach the level of knowledge of these experts, but you are able to ask the right questions. Subsidy providers and other financiers may also not understand the things I don't understand. Yet, it is precisely these parties who need to understand exactly what makes this idea, that plan, or this invention so unique."

YOU ARRANGE EVERYTHING FOR THESE SUBSIDIES? THE CLIENT DOESN'T HAVE TO DO ANYTHING?

"We take charge and take care of part of the execution, but anyone who thinks 'I'll just hire Trias and they'll take care of the whole subsidy story for me' is in for a surprise. After all, the substantive input of the client is essential. It really is a joint effort and that takes time and energy on both sides. A good partnership ensures the best possible results."

TIPS VAN TRIAS

Kim: "Come and talk to us at the earliest possible stage,' advises Kim. 'We can already make a good estimate of relevant subsidy opportunities on the basis of an initial meeting. This first meeting is, of course, completely free of charge and without obligation."

A few other things to think about:

Tips for selecting the right subsidy opportunities:

- Start with the end in mind! A subsidy is a tool, not the goal.
- Make sure there is a good match between the ambitions and phase of development of your company and the goals of the subsidy in question.
- It's not just European subsidies that are of interest. Interesting options regularly come along in the Netherlands and Limburg too. The amounts involved with these subsidies may sometimes be lower, but they have a higher success rate.
- Take a good look at the financial conditions! Both a good example and common pitfall is that sometimes you have to advance the costs yourself first.

CASE: CORPORIS & TRIAS

Corporis was first called Health Value Creation. The company was founded in Amsterdam in 2015 by Alexander Veenhof, a surgeon at Antoni van Leeuwenhoek, the leading hospital and research institute specializing in cancer. The first prototypes were built with seed funding. Corporis develops medical devices that prevent and reduce the risk of certain post-surgical complications. In 2017, Corporis was looking for investment capital and knowledge and experience to bring their products to the market. John Marugg, business developer at Brightlands Maastricht Health Campus, became CEO and outlined the strategy and secured the necessary financing.

JOHN MARUGG, CEO CORPORIS: "MY ASSIGNMENT WAS CLEAR: MAKE SURE OUR PRODUCTS AND THEIR DEVELOPMENT ARE FINANCED AND BRING THEM TO THE MARKET."

John and Corporis are a satisfied Trias client: "Trias helps us to choose the right subsidies and to write the subsidy application. They ask critical questions, help to write the application, they guide us, and they supervise the process. They also help us with the subsidy administration and reporting, which is quite important. We worked together for the first time in 2017 and we have become well-attuned to one another since then. That has taken time and energy, but we have built up a good working relationship. Mutual trust is essential: after all, as a company, you expose yourself completely. I am very much in favour of co-creation, preferably with parties in the immediate vicinity. If necessary, you need to be able to sit around the table with each other quickly and easily. Trias and Corporis are in the same building, so that's no problem at all and, what's more, it's an absolute pleasure."

Corporis Medical

TRIAS
Subsidies | Projecten | Management

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Further, Together

Joost van den Akker

is member of the Provincial Executive of Limburg, responsible for economy, education, and sport.

You know that feeling you get, when something works out exactly as you planned? That's the feeling I get when I see Brightlands Maastricht Health Campus develop. As a province and as a region we have a clear mission: we want to become the most innovative, the most attractive, and the healthiest region in the Netherlands. Our plans link up remarkably well with the mission-driven innovation policy of the Ministry of Economic Affairs in which they opt for four current social themes, including health and healthcare. In Europe, we also see a clear focus on sustainability, health, and healthcare.

For the continuation and succession of Kennis-As (a strategic ten-year programme to strengthen the social and economic structure in Limburg), we logically opt mainly for projects that fit in perfectly with our own ambitions. But we also make grateful use of the extra opportunities and possibilities that are now offered nationally and internationally. One of Limburg's strong assets is regenerative medicine, simply because we excel in it! We can and should be proud of that, and we must seize every opportunity to showcase who we are, what we want, and what we are good at. A Top Sector Life Sciences meeting in Maastricht was attended by representatives of various universities and ministries. These are the places and moments when you show your best side. With the upgrade and expansion of the MECC, the Maastricht Health Campus area development will also be given a new meeting place. This is the perfect location to continue to grow.

The opportunities are there for the taking at Brightlands Maastricht Health Campus. It is up to us to seize them.

Hans de Munter, CEO Neuroplast

We've moved! and are partly living together

It is a given that Brightlands Maastricht Health Campus loves seeing new initiatives and entrepreneurs. But it is also a reality that some businesses leave again. Sometimes, that means they've left for good, but at other times fate takes a different turn. For example, in 2019 CiMaas and Neuroplast built a joint facility for their production on the Brightlands campus in Geleen. Neuroplast moved in its entirety and CiMaas maintains its head office in Maastricht. Not only do they now live and work partly together, they also stay 'part of the family'.

Both Neuroplast and CiMaas are entering the clinical phase with their therapies, CiMaas with a treatment for cancer via an active immune system, Neuroplast with a therapy with optimized stem cells against paraplegia and against the motor neurone disease ALS. Until recently they hired the necessary facilities, such as laboratories and clean rooms with GMP qualifications, from InSciTe in Geleen. However, the contracts came to an end and both companies were ready to take the next step forward. When 'building 6' - DSM's former laboratories - became available on the Brightlands Chemelot Campus in the spring of 2019, both companies decided to move to Geleen and to work together intensively. For the sake of clarity, they are and will remain two separate companies, but they will share as much stuff, services, and equipment as possible. Working together smartly is the motto, and saving costs is the goal. Hans de Munter, CEO of Neuroplast and Wilfred Germeraad, CSO and COO of CiMaas look back on a hectic year. "This is an enormous operation for a GMP company. Yet, we managed to realize our own facility within nine months. We had to postpone our clinical trials, but we are now fully operational. That means that we can really get started now."

Wilfred Germeraad, CSO CiMaas

Lodewijk van Rhijn

Osteoarthritis is becoming more common and occurs at an increasingly younger age. The number of patients with neck and back problems is rising explosively. Pediatricians no longer screen for scoliosis and consultation hours as the clinic are overcrowded. Smart solutions are needed more than ever.


“As an academical hospital we should look for solutions for social problems”

INTRODUCTION Lodewijk van Rhijn is professor and head of Orthopaedics at Maastricht UMC+. He is specialised in paediatric orthopaedics, focusing in particular on complex spine operations. His team consists of twelve orthopedists and four permanent researchers. "That's extensive in orthopaedics, certainly by Dutch standards. In his study are portraits of his predecessors as well as many drawings, cards and photographs. "Of the young patients. This is my little heart."

ARTROSE "Our department is active in the field of osteoarthritis treatments. Osteoarthritis is a huge social problem. In 2015, there were approximately 1.2 million people diagnosed with osteo-arthritis in the Netherlands. In 2040 there will be 2.5 million! The most common reasons for incapacity for work and complaints seen at the GP's are psychological in nature. Immediately followed by problems with the musculoskeletal system. For now, little can be done about osteoarthritis. Only when there are no other options, we place a new knee or hip. However, before this decision there has been a considerable suffering for a long time. Osteoarthritis was once prevalent with people over the age of sixty. Nowadays, we see a large group of people in their forties and fifties with problems."

"In our lab, my colleague Tim Welting is onto something promising. A few years ago, we discovered that a certain growth factor - BMP7 - has a positive effect on arthritic cartilage cells. But after an injection into the knee the BMP7 disappears very quickly. In the coming years, we will be investigating whether we can cure the sick cartilage cells with small pieces of protein from that BMP7, alled peptides. A solution that reduces the symptoms of osteoarthritis and postpones an operation as long as possible, that could be something very big."

ENTERING THE MARKET "The discovery of that peptide, even though we're only in the early stages, has been placed in a start-up company at Brightlands Maastricht Health Campus: Chondropeptix. That's how we focus. After all, if it actually works the way we expect, then this invention must enter the market. One of my ambitions with working in an academic hospital is that we should look for solutions to social problems. In daily practice, you often come across situations which make you think: "there's got to be another way". I've noticed that you have to look elsewhere if you want to change something. You will have to work in an environment where you are free to move around. A university hospital is constantly on the move, which I find a great advantage. By the time I retire, I want us to have introduced several treatments, medicines, solutions that make people's lives different/better."

BEWEEGHUIS "Our consulting hours were overloaded with patients who didn't necessarily need to be treated in a hospital. These people could be helped at a city clinic, on the condition that was smartly organised. That is how the Beweeghuis was created. The specialist sees the patients at the city clinic after a GP's referral. X-rays or MRI-scans are made in the hospital. After the diagnosis, the specialist delegates the follow-up treatment to the general practitioner and the remedial therapist. The patient does not have to pay for the visit to the specialist in the city clinic at his policy excess. And we have far less patients in a relatively expensive hospital. In 2019, we had reduced the number of patients at our hospital consultation hours by more than 2000. In other words, win/win. Such excellent initiatives often fail due to their (lack of) funding. Luckily, as an academic hospital, we have taken care of this financial aspect very well. But when a general hospital receives 2000 fewer patients a year, it will soon face big financial problems and will not start such an initiative itself. This is, of course, a very crooked and highly undesirable situation. We are going to study our results. We will of course look at patient satisfaction, but we would also like to know whether the patient is really following the recommended route after his or her consultation

CV

NAME Lodewijk van Rhijn
WORK Orthopaedic surgeon and Head of Department of Orthopaedics
BORN Hollandia, former Papua New Guinea
EDUCATION Amsterdam, Onze Lieve Vrouwe Gasthuis
LIVES in Maastricht
HOME gehuwd, twee kinderen
BRIGHTLANDS MAASTRICHT HEALTH CAMPUS is inn

Just so we're clear...

Lodewijk: "Everything that happens here, we do together. I want people around me who are good at what I am not good at. I am especially looking for diversity, that is how you form a strong team. This story is about 'the smart guy', but I have so many people around me who are much smarter than I am. I give people the opportunity to develop and grow, that's exactly what I've been looking for and found here myself. It's my job to ensure they can realize their ideas. I am a passionate person. If something needs to be arranged, I have the capacity to get things done.

but the smartness, the real smartness, that might well be with others."

at the city clinic. Or will he go to another hospital? Or even go to Belgium? Ultimately, we also have to see it in a decrease in the number of operations. And now I think about it like that, I actually want to know what this means for labour participation."

PROUD "Look, I also wanted to show you this: the Maastricht brace for children with scoliosis (a lateral fusion of the spine). I started using it about twenty years ago, together with my predecessor Andre van Ooy and orthopedic instrument maker Jos Krul. The success of a brace depends on consistent wearing. And since most patients are adolescent girls, that's quite a challenge. We have therefore paid close attention to the wearing comfort and being able to put it on and off independently. The braces/corsets are custom made in Ireland and right now we are also investigating the possibility for printing these braces; for this project we are working together with startup company Fited at Brightlands Maastricht Health Campus."

ALTERNATIVE "And there is something else. The pediatricians at the GGD have stopped screening for scoliosis. Since then, we have seen a significant increase of children who have a large curve in their spine. Often the deformity is so severe that a brace is no longer effective, and a major operation is the only treatment option. As a result, by no longer screening for scoliosis we are depriving children of a non-surgical treatment. Together with the physiotherapists and general practitioners in the region, we are now introducing an alternative: 'Scoliosis, find out for yourself'. It is actually a very simple idea. Parents, if you measure your child's height, take the bend test. Pay attention to any height differences between the left and right side of the back. If you think you see an abnormality or if you have any doubts, have the doctor check it again. Measuring and doing the bend test at the same time, that should become one of those standard things."

OPPORTUNITY "What I would like to say is: we live and work in a region that offers many opportunities. We have Brightlands, we have InSciTe, Chemelot, a province with a strong vision, a city with great initiatives, an ambitious hospital, a beautiful university... Let's continue to seize the opportunities and take a good look at what's going on in society."


“If you want something to change, you have to look elsewhere, you have to work in an environment where you are free to move around”

Arno Nierich of ResQure:

“Those who want to innovate in healthcare will meet many obstacles”

Arno Nierich is an anaesthesiologist/intensivist working in the field of heart surgery at Isala Hospital in Zwolle. At the University Medical Center Utrecht (UMC Utrecht) he first came into contact with the enormous impact that a simple medical innovation can have. Since then he has been constantly searching for ways to improve healthcare. It started with an idea that became a concept, that was developed into a prototype, after which a company was started. That company is ResQure, located on Brightlands Maastricht Health Campus.

THE IDEA

"Every day I see the dramatic effects of cardiac arrest in - often - young people. Only 13% of them leave the hospital alive. We know from heart surgery that cooling the patient before the blood circulation is stopped gives good results in some vascular operations on the aorta. This creates, as it were, extra time to restore the damaged vascular connections with the brain - the weakest organ in the whole when it comes to oxygen deficiency. Currently we only cool patients after resuscitation via the bloodstream in the ICU. But that is often only four hours after the circulation has restarted and then a lot of irreparable damage, reperfusion injury, has already occurred. Our idea is to cool patients' brains indirectly immediately after resuscitation, meaning as early as in the ambulance. For this purpose, we have developed a balloon catheter filled with ice-cold water, which we use as a kind of heat exchanger. Think of it as an ice-cold lollipop that we insert into the oesophagus, as close to the aorta as possible. This creates a cold front where the cooled blood circulation reaches the brain, reperfusion injury is reduced, and the chances of survival increase."

WHY START A COMPANY?

"As doctors we run into the limitations of our profession every single day. I see it as my duty to find the best possible solutions to remove these barriers. And that is exactly how ResQure came into being. We had a problem for which we needed to find a solution. We want to develop that concept further, we want to build prototypes, and eventually take it to the market. It turns out that the best way to grow that further is to set up a small company. This application has to be applied in practice. And that is an absolute must, which is why we founded ResQure in 2019."

WHY MAASTRICHT?

"That is actually the result of an amalgamation of factors. I had already been working extensively with Arno van 't Hof, professor of cardiology in Maastricht, who specialized in interventional surgery. Through my contacts at the Institute for Technology-Inspired Regenerative Medicine (MERLN) I was introduced to Jan Cobbenhagen. We philosophized a couple of times about the enormous challenges you face when you want to bring a healthcare innovation to the patient. I also knew one of the business developers at Brightlands Maastricht Health Campus. And all that led to it becoming a business based in Maastricht."

WHAT'S THE CURRENT STATE OF AFFAIRS?

"We have a patent, a concept, basic prototypes, a business plan, and a small team that has been expanded to include an interventional cardiologist. We submitted a subsidy application to the Limburg Development and Investment Company (LIOF) because we would like to appoint a PhD student, which of course has to be paid for. We also want to continue working on the prototype and apply for a follow-up patent. The idea is to get the CE registration for our product within two to three years. As everyone knows, that is a lengthy and complex process. But it's worth the effort, as this can really take off. With the knowledge and business relations at Brightlands we really want to take this further."

OTHER APPLICATIONS

"The focus for us now is on the resuscitation patient, but for an innovation you always look for the largest possible market. We will soon also see potential applications for heart attacks, cerebral infarctions, and in the case of sepsis. After all, these patient groups also benefit from cooling in order to ultimately limit the damage as much as possible."

STEFANIA'S PLAYLIST

What a wonderful world	-	Louis Armstrong
How would you feel	-	Ed Sheeran
Blauwe dag	-	Suzan & Freek
Memories	-	Maroon 5
Old town road	-	Lil Nas X

"Music in the OR calms patients"

NEW OWN BREAST

You might know Stefania Tuinder from her TED talk in which she dances the tango as a metaphor for the importance of working together harmoniously in the OR. Together with surgical oncologist Esther Heuts she talks about their unique collaboration in breast reconstruction on the stage at the MECC convention centre in Maastricht. Stefania and her team have succeeded in giving breast cancer patients back their 'own' breast after an amputation by conducting prize-winning scientific research and refining her own microsurgical procedures.

ANAESTHETIZED LIP

"In the past, we often saw that the patient had a new breast after a reconstruction that looked great but that felt like your lip does after an injection at the dentist,' Stefania explains. 'As long as that lip feels strange, you are constantly reminded that you've just been to the dentist. This is the same thing that my patients experience. Only once their breast feels normal again can they start to forget what happened and continue living their lives. By using tissue from their own abdomen or thigh for reconstruction and leaving as many nerves intact as possible, we can give a woman back a very valuable piece of her body and, therefore, of her life."

A BEAUTIFUL SMILE

"My day is made when a patient tells me during the check-up at the outpatient clinic that her breast feels part of her again. But I get just as happy about a patient with facial paralysis who, after my reconstruction, can smile again for the first time in a long time. These are the beautiful moments that inspire me to continue to search for ways in which we can do things even better. This perfectionism is part of my character and my drive to always give my all."

MUSIC CREATES CALM

Music plays an important role in Stefania's work. "I always operate with music playing in the background, as it creates a sense of calm not just for myself but also for the team. Scientific research has shown that this even helps the patient to calm down. An operation is teamwork and the patient is part of that team. So, if the patient is calm and the body responds well to our actions, we can do our work even better."

ALL THE PIECES OF THE PUZZLE

"The members of our OR team are on the same wavelength. That becomes especially clear when I have to operate in a different hospital with a team I don't know. That's when I realize how important it is that all the pieces of the puzzle in that team fit together perfectly, as is the case in our team. Everyone is equally important, so everyone can add something to the playlist for the operation. It has everything, from hip-hop to classical music. What gets played depends on the operation and our mood."


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