Passion and Performance
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Liber Amicorum Sibrand Poppema

Groningen, 2018
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This book was published by friends and colleagues of Sibrand Poppema, on the occasion of his retirement as President of the Board of the University of Groningen, 27 September 2018.
‘Ambition’ not only concerns a desire to achieve a set of great goals, but also the perseverance to strive for their realization. This book – dedicated to Sibrand Poppema – deals with these two faces of the medal of ambition. Colleagues and friends of Sibrand Poppema have contributed their views on his ambition, and from their stories it is most apparent that Sibrand is quite an ambitious person. He is extremely clear in setting goals and in indicating the exact way to achieve the target. For this reason, the book is very interesting, providing a wide variety of angles of observation on the Sibrand Poppema ambition space. Moreover, it is a pleasure to read.

Sibrand Poppema is multitalented. He is an inspiring academic, having worked at the frontier of knowledge in pathology for decades. He is also a passionate and dynamic administrator, having served as Head of Department, Dean of the Faculty of Medical Sciences and Vice-Chair of the University Medical Center Groningen for about a decade and, finally, he became President of the Board of the University of Groningen for another ten years.

This volume mainly focuses on his career as the ‘leader’ of the University from 2008 to 2018. To provide the reader with some background into his university presidency, the editors of this volume have channelled Sibrand’s ambitions into three separate sections: science, administration and society. In our view, these are equally important for a better understanding of Sibrand’s motivation and activities.
First, as President of the Board of the University, Sibrand Poppema has always acted from the perspective of a researcher. And, to be clear, this is what ‘his’ University has valued so much. To manage a comprehensive research-oriented institution such as the University of Groningen, deep academic understanding is an absolute requirement for success. Therefore, it is important to know about Sibrand Poppema’s academic background. How does he think? Which fields does he consider valuable and what indicators are there of his scientific success? We will present contributions by former colleagues on his work in pathology and medical sciences in general.

These chapters deal with his fascination for science and why, in his opinion, pathology (‘the science of disease’) is so important to knowledge in the medical sciences. His scientific work abroad, first in Kiel (Germany), then Boston (US) and later Edmonton (Canada), led him to the strong conviction that, fundamentally, science can only be done as an international endeavour. For an institution such as the University of Groningen, which is not even located at the centre of the Netherlands, Sibrand’s later emphasis on internationalization, both in research and education, stems from this notion, and is key to his activities and success. In the early days of his career, Sibrand also became aware of the fact that science and society need, and can reinforce, each other a lot. Starting a small biotech company in collaboration with colleagues also helped him to see the ‘business’ side of science.

Thinking big started with Sibrand’s administrative career in Medical Sciences. Returning from Edmonton, he became head of a newly formed and very large department called ‘Pathology and Laboratory Medicine’. Interdisciplinary research was fostered in this setting, and a lot of state-of-the-art equipment was installed. This created new momentum, not only for pathology, but for many other medical disciplines at the Academic Hospital Groningen.

After his appointment as Dean of the Faculty of Medical Sciences, he gave an incredible boost to research in the medical sciences in Groningen. He was the instigator of the convergence of the Academic Hospital Groningen (AZG) and the Faculty of Medical Science into the University Medical Center Groningen (UMCG). He initiated large national and international collaborations and two important infrastructural assets, the large biomedical database called the ‘Lifelines’ project, and the fundamental research institute, European Institute for the Biology of Ageing (ERIBA). In medical education, he started a completely English taught medical bachelor curriculum and a collaboration with the University of Oldenburg, known as the ‘European Medical School’. Although administration took an increasing amount of his time, he always managed to keep his scientific work going, resulting in many publications, mainly in the field of Hodgkin disease and transplantation. With numerous PhD students graduating under Sibrand Poppema and a really impressive H-index, he is a great and truly inspiring scientist.

The second part of this volume focuses on Sibrand Poppema’s administrative activities – basically his core job over the last decade. Managing a complex organization such as a university is not an easy job, but having the experience on the Board of the University Medical Center Groningen surely helps. Running a university is not a job done in a vacuum. Interactions with other knowledge-intensive institutions and organizations are also crucial, whether it is the Association of Universities in the Netherlands (VSNU), the national medical centre organization of the NFU or the local connection to the Hanze University of Applied Sciences. Sibrand’s main ambition was to improve the performance of the University in both education and research. Under his leadership, the University of Groningen has increasingly become a global university. Within Europe, its collaboration with the Guild of European Research-Intensive Universities and with the universities of Ghent, Göttingen, Uppsala known as the U4, is noteworthy. Outside Europe, collaboration with many partners has become structural and a natural thing to do. But given its impact and the particular role Sibrand Poppema played, the book will pay special attention to the collaboration with China and, more specifically, the China Agricultural University.

Going global goes hand-in-hand with regional and societal responsibility. The third section of the book addresses the University’s interaction with society. How can a university contribute to society,
for example in solving issues in health, energy and sustainability? How can universities generate societal impact, collaborate with local institutions, think about joint investment and inspire people? Sibrand Poppema initiated this line of thinking in the medical field by defining Healthy Ageing as a key societal field for the University Medical Center Groningen and subsequently also for the University of Groningen. Along with healthy ageing, he created two other strategic societal spearheads: energy transition and sustainable society. Importantly, in relation to all three fields, he firmly anchored the University in the northern region of the Netherlands as a living lab. Sibrand Poppema played an essential and active role in developing this approach by teaming up with northern authorities, his colleagues from northern universities of applied sciences, and with institutions in both the profit and non-profit sector. He was also involved in stimulating active cooperation with the five northern German states, sometimes even Berlin. As such, he was a real supporter of and stimulus to the northern regional cause in both The Hague and Brussels. He has also acknowledged the fact that scientific research without societal imbedding and contributions cannot flourish. And, conversely, society can benefit a lot from science by knowledge-intensive economic growth.

On 1 September 2008, Sibrand Poppema became President of the Board of the University of Groningen. The Board of our University is led by the President and has two other members, the Rector Magnificus and the Vice-President: the Rector Magnificus is concerned with the quality of education and research and with student affairs, while the Vice-President is responsible for finance, operations, IT and infrastructure. This implicitly means that the President not only chairs the Board, but is also in control of all other matters, such as relationships with government ministries, governmental bodies and other financial sources and all internal matters related to human resources, just to name a few tasks. Board decisions are always unanimous, which means intensive interaction and trust both within the Board and with important stakeholders, such as the Supervisory Board. The President is –last but not least - responsible for the administrative organization of the university and takes the lead with respect to interaction between the Board of the University and the University Council.

Between 2008 to 2018, the University of Groningen was extremely successful. In 2017, the University was ranked 59 in the Academic Ranking of World Universities. In 2018 this ranking remains very high (66) and for both years the University of Groningen was second best in the Netherlands. According to a Dutch survey in the Keuzegids Hoger Onderwijs 2018, the University of Groningen is the best classical university in the Netherlands both for Bachelor’s and Master’s education. In 2016, Professor Ben Feringa received the Nobel Prize for Chemistry. In other words, the University of Groningen experienced a ‘golden decade’ under the rule of Sibrand Poppema.

This introduction would not be complete without a short reference to the collaboration with China Agricultural University, which aimed to establish an international joint university in the City of Yantai in China. In March 2015, Sibrand Poppema introduced the idea of establishing a branch campus in China. In his view, transnational education was the logical next step in the internationalization of universities. Having a full-blown campus with a substantial number of programmes and a strong research institute would have contributed to the worldwide power, visibility and reputation of the University of Groningen. Sibrand Poppema’s ambition, drive and intensive input were key, but after three intensive years of discussions, preparations, travel, meetings with all stakeholders, the initial idea of expanding the University of Groningen to the Yantai Campus was not backed by the University Council. Instead, the
project was reconsidered and reduced to a smaller project, mainly in the hands of the Faculty of Science and Engineering, with the involvement of the Faculty of Medical Sciences. Perhaps in the future, the University will return to this vision of transnational education in Yantai. For now, we can only observe that the time is perhaps not yet right or that the spirit of the times changed during the period between 2015-2018, leading up to the recent decision. For many, but especially for Sibrand, it is a disappointment that a full-blown campus of the University of Groningen, Yantai, will not open soon, but knowing that a more modest alternative collaboration will occur should at least provide some solace.

It goes without saying that the responsibility of being a university president is a weighty one. It not only required a lot of effort in Groningen itself, but also in The Hague and – given its importance – abroad. A university can be compared with a medium-sized city, where people experience both success and failure. The president needs to represent the university in all cases and at all times. It is an intensive job, and so it is remarkable that Sibrand Poppema has fulfilled his role as President of the Board of the University of Groningen with so much effort and enthusiasm for more than a decade.

As colleagues and friends, we really recommend you to read this book. We have tried to mingle different styles, topics and views on the life and work of Sibrand Poppema. The book also contains many images and visual memories. After this introduction – and before going into the main parts on science, administration and society – we will present a short biography of Sibrand Poppema, which starts our journey to a better understanding and appreciation of the scientific and administrative achievements of a remarkable individual who became a remarkable president of our University: Sibrand Poppema.

Max van den Berg is former King’s Commissioner of the Province of Groningen, Lou de Leij is Dean of the Groningen Graduate Schools, and Elmer Sterken is Rector Magnificus of the University of Groningen.
A man who always wants to win

Jolly Kerkstra

Sibrand Poppema is an ambitious President of the University, an accomplished medical scientist, a global citizen and a family man. He is on 24/7. Energetic, resolute and always leading the troops. How does he do it? What drives him? What is the secret to his success?

August 2017, early in the morning. Sibrand Poppema and two radio reporters are walking through Mussel, the Groningen village where Poppema was born and grew up. While the landscape gradually wakes, they chat in fluent Gronings about Sibrand’s life. He says he likes to mow the lawn and weed the garden on Saturdays. Does he have time for that? asks the reporter. ‘Of course’, Sibrand answers. ‘People are totally unaware that there are seven days in a week. And 24 hours in a day. If you work 10 hours and sleep seven, you still have seven hours in a day. We have more time than we think.’ That’s Sibrand Poppema for you. He is on 24/7. Energetic, resolute and always leading the troops. How does he do it? What drives him? What is the secret to his success?

Siddharta

In 2018, there it is still holding its own between the encroaching new developments in Mussel: the cute little house on Musselweg where Sibrand grew up. Born in 1949, in a country recovering from the Second World War and a village whose inhabitants are down to earth and dislike frills, Sibrand was born to older parents who were very protective of him. This was not without reason, because they had been through a lot. His father’s first wife died young and an older brother died round the age of one. Sibrand

Sibrand as a young boy
was a self-assured and bright little lad. However, his school career was not an immediate success: his nursery school teacher sent him home after a week. ‘Just let him play’, she said. For a long time Sibrand preferred gazing out of the school window to paying attention. Only in the higher classes of primary school does ‘sense start to develop’, as he puts it himself.

As a child he was often ill. Plenty of time to read therefore. The neighbours ran a small library and Sibrand was a faithful customer: he read all the books at least three times. The children’s bible by the then popular writer W.G. van de Hulst was one of his favourites. The conviction that has stayed with him for the rest of his life is that it is your duty to develop your talents. And that you should make it possible for others to do so too.

At about the age of 11 he fell under the spell of Siddhartha by Hermann Hesse, which introduced him to Buddhism. This confirmed his doubts about the Protestant faith that he had grown up with. The message that he took from this is that you are responsible for your own actions: everything you do has consequences. You can thus help make the world a better place.

Most children from Mussel did not go to secondary school at that time. However, Sibrand was allowed to continue studying, first at the ULO (more advanced primary education, approximately junior high school level), an education that no longer exists. At the kitchen table at home he learned everything by rote, until he discovered that it is not necessary at all.

His illness as a child determined what he chose to study. Happy memories of visits from Dr Onnes with his chic car and lit cigar – ‘while I lay there coughing’ – made Sibrand want to be a doctor too. He successfully completed his first year of Medicine at the University of Groningen, but to his dismay is unsuccessful in the draw for the second year because of cuts. Just as he decided to continue his studies in Brussels, money comes from The Hague and he could continue in Groningen after all.

Sibrand (in the centre) with his brother, sister and parents

A global citizen   Sibrand specialized in pathology and was awarded a PhD in 1979 by the UG for a thesis on the ‘Immunopathology of Hodgkin’s Disease.’ After his PhD, he worked as a postdoc in Kiel in Germany

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Final year at the gymnasium (1968)
and at Harvard Medical School in Boston. Sibrand and Joke feel right at home in the US: the American Dream, that you can achieve your goals through hard work, could be their motto in life. It was no surprise when the Poppemas begin to get itchy feet again after a few years back in Groningen: in 1987 they moved to Canada, where Sibrand became professor at the University of Alberta and director of the Cross Cancer Institute in Edmonton.

The characteristics that defined Sibrand as a child also determine his success as a researcher and scholar: he is clever, driven, focused and articulate. And he never gives up. He remembers from his youth that he wanted to use his talents, that he did not want to live as cautiously as his father, who was a postman but could have been much more in life. Sibrand wants to make waves and bring about change. In his academic work these characteristics took him to the top of his field. That a tumour is named after him (the ‘Poppema Lymphoma’) fills him with pride. He is one of the top 10 specialists in the field of Hodgkin’s Disease in the world.

Anyone who conjures up the classic image of a stuffy introverted nerd with his nose in a book who never leaves his lab is mistaken. Sibrand Poppema is a lively, entertaining man with a glint in his eye. He likes a chat, loves a beer and is someone you can share a joke with. He’s a family man too, who enjoys being with his family. He and Joke have three children: sons Boelo and Sibrand and daughter Young Mi, who they adopted from South Korea. Six grandchildren complete the family.

The little lad from Mussel has become a global citizen. But Groningen beckons. After eight great years as a family in Canada, the Poppemas return to their roots. Sibrand becomes a professor and the head of the pathology department at the UG. Along the way, the emphasis in his career moves from research to management, each time a step higher. In 1999, he is made Dean of the Faculty of Medical Sciences. And he makes his presence known. Sibrand wants to be dean of a faculty but not one that is bumping along the bottom when it comes to research, both national and international. The man who always wants to win and keeps lists of everything saw it as his task to make medical research in Groningen climb the rankings, and fast.

In an interview with Dagblad van het Noorden he roughly shakes what he calls the sleeping researchers awake: a third of research in Groningen is sub-standard he says. There must be a clean sweep. Staff who cut corners had better start looking for another job. He later observed that this was putting it mildly: “It was really two-thirds of the research that was sub-standard.”

He certainly makes waves, and not by accident. “I meant to shock people”, he confirms. But the Poppema method goes further than just shocking people. He has vision, ideas and plans. Above all, he has the ambition and persuasiveness needed to put his plans into action. As Dean of the Faculty of Medicine he managed to bring in more money from The Hague, greatly increase the number of study places and invest in better facilities. He brought top researchers to Groningen, developed an English-taught curriculum and sought to collaborate with Oldenburg in Germany to develop a European Medical School. He implemented talent programmes and tenure track positions, so that staff know exactly what is expected of them if they want to become a professor.
A culture developed in which research flourished and talent was challenged. With resounding results: during Poppema’s deanship, the number of PhDs and publications doubled, the quality of the research improved and the number of citations grew exponentially. Furthermore, Sibrand Poppema was one of the driving forces behind merging the Faculty of Medicine and the teaching hospital in Groningen. In 2005 the merger became a fact and the UMCG was born. The merger means that research, teaching and patient care can continue to improve.

**A global university** The picturesque Reitdiepgebied in the Hogeland area of the province of Groningen is the decor for the medieval Allersmaborg stately home, which lies concealed along a winding path between Aduarderzijl and Ezinge. On a glorious summer’s day in 2007 the Poppemas – and their dog – posed on the lawn in front of the Allersmaborg. The photo appeared in the alumni magazine of the UG. Entrepreneurial as they are, the Poppemas were starting a new project. The UG has lease on Allersmaborg and the Poppemas moved into the first floor. As ‘chatelaine’, Joke receives alumni and other guests, organizes events and provides the catering. Not long after, Sibrand also changed jobs. He exchanged his office at the UMCG for the office of President of the University in the stately administration building of the UG on the Oude Boteringestraat.

As President of the University, Sibrand Poppema is once again not just coming to keep an eye on things. He rolled up his sleeves and started modernizing and improving the University. The UG must shoot from its position of 173rd in the world ranking of universities to a place in the top 50. Groningen must become the Oxford of the Netherlands. Not because it sounds good but because it is necessary. The population in the northern Netherlands is shrinking. Fewer students means a shrinking University, declining budgets for teaching and research and less to attract top researchers with quality dropping as a result.

Sibrand believes that ‘internationalization’ is key to turning the tide: ‘Our future lies in the world’. The UG must become a real ‘global university’. He works systematically to achieve that goal.
He introduced the Binding Study Advice system to significantly increase the success rates. He sought collaboration within and outside the region: with the Hanze University of Applied Sciences and with business and government. They have joined forces in focus areas in which the northern Netherlands and the UG excel and have many opportunities: Healthy Ageing, Energy and Sustainable Society. The European Research Institute for the Biology of Ageing (ERIBA) is one result, as is the Energy Academy Europe on the Zernike Campus.

The President also flies tirelessly around the world looking for international partnerships and possible partners for the UG. From Skolkovo in Russia to South Korea – with which he has a special connection because of his daughter Young Mi – and China. The latter is where he sees particular opportunities: millions of students, funds for research and a competitive and innovative atmosphere à la Poppema. A Groningen campus in Yantai in China was to be the cherry on the cake of internationalization at the UG.

A golden couple  After 10 years Sibrand Poppema can look back with pride on his presidency of the Board of the University of Groningen. He has achieved many of his goals. The University is close to being in the top 50 universities in the world. Keuzegids Universiteiten 2018 calls the UG the best broad university in the Netherlands. About 6,000 international students study here – 17% of the total – and there are more than 120 different nationalities. As a young, ambitious professor Sibrand was a founder of one of the first biotech start-ups on the then almost empty Zernike Science Park in 1986. Now Zernike Campus is a high-tech incubator for knowledge, innovation and entrepreneurship with state-of-the-art labs and research facilities. The UG is a forerunner in everything, like Sibrand himself.

But it will be a big disappointment for the man who never gives up that one thing has eluded him, despite him putting his all into it: starting a branch campus of the UG in Yantai. Insufficient support from the University Council finally scuppered the plans of the Board of the University. He has coped with previous disappointments in his life fairly easily: ‘I never talk about things that failed. I am very good at forgetting them’, he says. But it must have been a bitter pill that he could not take the last big step in his plan to turn Groningen into a leading international research university.

In the end ‘realistic optimist’ Poppema has had to concede defeat and look instead at everything that has worked out. ‘You can turn every setback into something positive’, is one of his mottos. Sibrand Poppema: the story of a young football player from Mussel who grew up to be an excellent researcher and top university manager. Born as a Sunday’s child, blessed with exceptional talents and the drive to use these talents and thus make the world a better place. And with the energy to work on this 24/7. The secret of his success lies in this unique combination.

In September 1968 a young student walked into the UG. Exactly 50 years later he bids it farewell as the big boss. The UG opened up his world. And he opened up the world of the UG. Together they formed a golden couple. Or as they put it in Gronings: kon minder.

Jolly Kerkstra is a freelance writer.
Science
‘I want to know why and how!’

Groningen – Edmonton

Lydia Visser and Wim Timens

Very recently I (Lydia) received a link through one of the former Chinese PhD candidates, to a TV programme with Sibrand Poppema pictured very prominently. The video captured Sibrand’s view of research very clearly: ‘I want to find out why and how – basic knowledge. Is it translational? Great. Can you cure patients? Even better. But really, the basis is I want to know why and how. You can work for 30 years to discover one principle’. There was, of course, a lot more from and about Sibrand and the University of Groningen in this video but the message on research very clearly depicts how he generated and approached research questions and how he triggered those he mentored, including Wim and me, in our attitude to research.

Groningen until 1987

Sibrand studied medicine between 1968 to 1974. He says, it was with the intention to help people. He once said that although he liked working and dealing with patients, he thought that in the end he would not have the patience to deal with them, so pathology was a good alternative. However, he became interested in Hodgkin’s disease because of a patient with the disease: ‘Why could we cure some patients and others not?’ He performed the research for his thesis between 1975 and 1979, and defended it, entitled Immunopathology of Hodgkin’s disease, on 5 September 1979. His supervisors were Prof. Elema and Prof. Lennert. His thesis included the published articles: ‘The significance of intracytoplasmic proteins in Reed-Sternberg cells’ (Cancer 42:1793-1803, 1978); ‘Sternberg-Reed cells with intracytoplasmic lymphocytes. Phagocytosis or emperipolesis’ (Virchows Archiv A Path Anat and Histol 380:355-359,
In 1978, he specialized in hematopathology under the famous Prof. Karl Lennert (who developed the ‘Kiel classification’) at the Christian-Albrechts University in Kiel in Germany. Sibrand was the first to discover and prove that the nodular lymphocyte predominant type of Hodgkin’s lymphoma (NLPHL) was a particular type of Hodgkin’s disease originating from B cells, and, later on, more specifically, was demonstrated to be of germinal centre origin. The NLPHL papers originate from this work in Kiel, while in France this resulted in NLPHL being termed ‘Paragranuloma Poppema-Lennert’. After his defence, he did a post-doc at Harvard Medical School in Boston. Several papers resulted from this fellowship with very famous names in the field of hemato- and immunopathology: Atul Bhan, Stuart Schlossman and Nancy Harris, to name a few.

Wim: Just after his return from his postdoc in 1980, I was introduced to Sibrand by Prof. Hoedemaeker, at that time the head of the department. As a medical student, I had some spare time and decided to learn a bit about pathology, but I supposed I would not have that much to do with that specialty (and how differently did that turn out ...). No surprise, he had some research to be done on Hodgkin’s disease and so that was my start in research as a student assistant. At the time, his research was done at the ‘Thea and Tineke lab’ (Thea Rozeboom-Uiterwijk and Tineke Visser); but Sibrand’s idea was that I should work on morphometry, at that time completely new, under the guidance of Jan Koudstaal. You should realize that this was before personal computers were introduced, so I had to work on the mainframe without a hard disk, with all the risks of losing data involved. Many measurements had to be repeated, and although published in 1982, morphometry did not become a priority in our research.

In 1982, Sibrand received a KWF grant for 4 years for a PhD student (myself) and a technician (Lydia Visser), with the immunopathology of Hodgkin’s disease the topic. Sibrand had already produced a NLPHL cell line DEV and we tried very hard to make more cell lines. We performed immunohistochemistry on the tissue of Hodgkin patients: at the time, only on frozen sections, and that was in its early days. That meant: an old microtome under a cooled hood, and then cutting frozen sections with fingerless gloves. Taking that into account, even when looking back, we produced miraculously good morphology.

In addition, Edwin Schwander, the technician for Lou de Leij with whom Sibrand worked a lot, taught Lydia to make monoclonal antibodies. The hybridoma technique was still very new and exciting. We became very good in the screening procedure, sometimes staining 1200 frozen sections in two days, involving all hands, including myself and later on also Harry Hollema. Sibrand would be waiting behind the microscope and pick out all the interesting patterns. And there were a lot of interesting patterns, as there were very few antibodies available at the time. We made antibodies for B-cell markers, against Gravitz renal cell carcinoma and small-cell lung carcinoma, and a series of anti-CD45 antibodies and specific Hodgkin antibodies.
Initially, there was no ‘CD’ (Cluster of Differentiation) system: the lymphoid system antibodies produced were successfully clustered in what were called Leucocyte Typing conferences where they got their cluster designation, and many were initially unique in their cluster. This was particularly the case for the ‘MT’ and ‘MB’ antibodies, which were among the first that worked wonderfully on paraffin sections. Also, the ‘MOC’ antibodies were successful in detecting small cell carcinomas and are still used today for typing of neuroendocrine tumours and for distinguishing between carcinomas and mesotheliomas. We also threw away a lot of hybridomas, partly because of extensive background staining and immunohistochemistry, whereas later on, in studies on integrins and extracellular matrix proteins, I (Wim) realized that we might also have been the first to have found specific antibodies recognizing these structures for many of the antibodies we, at that time, thought were not useful. Based on this hybridoma technology, which was developed and expanded, Sibrand, Lou de Leij and others founded the IQ Corporation, a biotech company in Groningen specialized in this monoclonal antibody technology.

Sibrand was always available to look at the results and discuss new experiments; his door was always open and we usually met several times a day. Our lab was in the attic, where Lydia worked with Adriana Boes, while the culture lab was in the basement. The lab moved to the former neuropathology lab and extra people were added to the group, with Thea Uiterwijk returning, as well as Hans Vos and Marja Brinker joining. Now we were across the hall from Sibrand’s office and it was even easier to go and see him. Immunopathology was Sibrand’s expertise and he was appointed as a J.K. de Cock Professor in Immunopathology in 1985. At that time, we were also partially the immunopathology lab for diagnostics, at least for lymphomas, and we also did diagnostics for the first series of heart transplantation biopsies.

Despite the broad range of activities undertaken by Sibrand, his first love throughout the years remained the unravelling of the pathogenesis of Hodgkin’s disease. We also started to do Western Blots, and I remember Matthijs van de Rijn (long since in Stanford, US) came by to show us how to do immunoprecipitation. Marja was doing molecular techniques and that resulted in finally proving in 1987 that not only the NLPHL derived L&H type but also the classical Reed-Sternberg cells were of B-cell origin. In addition to my PhD, Sibrand was involved in Annette Gouw’s PhD research on HLA and liver transplantation (we both graduated in 1988), and also the supervisor of Harry Hollema (PhD in 1991). As (no surprise ...) Sibrand always looked for new challenges, he applied for the job as Director of Lab Medicine at the Cross Cancer Institute in Edmonton, Alberta.

**DISTRIBUTION OF T CELL SUBSETS IN HUMAN LYMPH NODES**

By SIBRAND POPPEMA, ATUL K. BHANG, ELLIS L. REINHERZ, ROBERT T. MCGUISKEY, AND STUART F. SCHLOSSMAN

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Lydia: To my surprise, he asked me to become his research technician over there. He moved to Edmonton in summer 1987 and I joined the group in January 1988. Sibrand and his family were already established in Edmonton when I first arrived, he came to pick me up and although I lived in a nice hotel/apartment, I sort of became their oldest daughter and spent most of my evenings and weekends with them at first. There is nothing quite like a ‘boterham met een restje opgebakken stamppot boerenkool’ the way Sibrand used to make for me sometimes! Joke is of course a wonderful cook, who also picked up on the local dishes very fast, and the kids were very open and a lot of fun, so it was great to sit around the table sharing meals and being part of a family so far away from home! I remember flying back to Groningen with Sibrand in November 1988 for the PhD defences of Wim and Annette.

Our research lab was in the Red Cross building at first, about 500 metres from the CCI, so in winter it was quite cold to go to see Sibrand or to do immunohistochemistry or flowcytometry, which was at the CCI. There was a great group of people at the CCI: Barry the lab manager, Judy the secretary, Laith the pathology tech, and the techs in haematology and chemistry were excellent and fun. We had research techs, first Eileen and later Jocelyn and Barb, setting up molecular techniques, and Raymond Lai started as an MD PhD. Collaborations with Annette, Wim, Lou and Willem Kamps remained active while he was in Canada.

The hospitality of Joke and Sibrand was also experienced by Wim when he, with Martine and both daughters, came over for a postdoc (minus 45 degrees Celsius on arrival!), and by Harry Hollema, who came over to finalize the last parts of his thesis. New collaborations also started with others, such as Andy Belch and Linda Pilarski’s group, our neighbours in the CCI lab, with Andy Shaw and kidney transplant gurus, Phil Halloran and Kim Solez; in England, with David Catovsky on hairy cell leukaemia; and with the Edmonton-based biotech company Biomira (Mary-beth Yacyshyn and Ann Berg) working on cancer vaccines and immunotherapy.

A second pathologist was appointed at the CCI, Judith Hugh, who specialized in breast cancer, while Laith got help from Mark Gilchrist. We had visiting pathologists in Megan Lim, with whom we still collaborate, and with whom one of our PhD students is doing a post-doc now, and Fernando Soares from Brazil, who later sent us a student, Everton Maggio, to do a PhD in Groningen. Raymond worked on CD45: it was amazing how much energy he had, a little bit of coffee and he was flying high, often we found that he had spent the night in the lab. I had my own project on B-ly7 and got to publish my own papers. The lab moved to the new extension in the CCI and the medicine labs also moved to a new part of the building. When the lab moved, an EM microscope was also brought in, together with an enthusiastic tech: Halyna Marusyk. For Hodgkin lymphoma, we did flowcytometry on blood and immunohistochemistry on tissue for HLA.

The CD45 work evolved when Sibrand met Andy (Andrew) Lazarovits, they really hit it off, with similar ideas and curiosity, and they also got on very well on the personal level and became good friends. Andy worked with Bob Zhong, who employed a group of microsurgeons...
who were very good in performing transplantations in mice. For CD45RB, kidney transplants were performed, in which the anti-CD45RB treatment was very effective. We also performed the immunohistochemistry on the transplants. This became a Nature publication in 1996, and Andy received a Kidney Foundation of Canada medal of excellence for this work in 1997. In addition to therapy in transplantation, it was also employed with good results in auto-immune disease. Sadly, Andy died of a brain tumour in 1999.

For celebrations in the lab, potluck lunches were organized, where everybody brought a dish; there was always great food and way too much. Parties for the whole lab were celebrated at Sibrand’s home, such as his 40th birthday. Sometimes we went out for lunch: Chinese food at Laith’s favourite restaurant, where Laith would call ahead and the owner would feed us wonderful food that was not on the menu, or Vietnamese food that was so spicy I would lose my voice. And then there were Friday night drinks after work to celebrate the weekend.

In 1994, Sibrand started to look for a new challenge, and several interesting institutions were visited. I practised my French and German, but in 1995 he was asked to come back to Groningen. He was invited to become head of the Department of Pathology at the University Hospital, with the prospect that he would be allowed and challenged to merge the Pathology department with Laboratory Medicine and several smaller research labs; the latter resulting in the later division of Medical Biology in the department. This prospect, along with the ‘kroketten’ he had missed, of course, and the Dutch social life he enjoyed, led him and Joke to decide to go back to their roots.

Wim Timens is a Professor of Immunopathology and Lydia Visser is a scientist, at the UMCG and the UG.
Over these 20 years, the research focus expanded significantly, from the role of T cells in Hodgkin lymphoma and defining gene expression profiles of Hodgkin tumour cells, to microRNAs, long non-coding RNAs, genetic susceptibility and translational studies in Hodgkin lymphoma as well as other types of lymphoma.

In the period up to 2010, Sibrand supervised close to 20 PhD students, who focused on a broad spectrum of research topics, with the majority on Hodgkin lymphoma, as this was his main research interest. As well as the lymphoma group, Sibrand also supported multiple other staff members in the department and encouraged them to continue their research lines, initiate new collaborations and explore new topics. He had a positive impact on the whole department and, more specifically, on Annette Gouw in the field of liver pathology; Harry van Goor, exploring new directions in renal diseases; and Harry Hollema in the field of gynaecology. Other activities in which Sibrand was very active within the department include the joint fitness workout with
the pathologists, and the annual bowling event with the Pathology and Medical Biology group.

Anke: My first (very short) meeting with Sibrand occurred when I brought him my PhD thesis on the final weekend before the official approval deadline. One of the members of the reading committee was not eligible to be an official member due to a delay in their appointment as a full professor and, fortunately, Sibrand agreed to read my PhD within a few days. The second meeting was at my defence, although I have to admit that I cannot remember the topic we discussed...

In the week after the defence, I heard that my project application had not been awarded, but that Sibrand might have a job for me. So, in the three months following my defence, I talked to Sibrand almost every other week. We talked about possible directions for postdoc research in the pathology department. This resulted in a two-year job offer, with a clear message that I should be able to support myself after these two years. So, in April 1997, I started as a postdoc. On the first day, Sibrand was out of the office, and only a few people in the department actually knew that I would be starting. No key for my office, no computer on my desk, and a building with atmosphere but one difficult to find your way around, with no proper introduction. Luckily, my office was opposite the coffee room, so I did have enough coffee. I met Lydia in the corridor and she asked me what she should do with the cells she was culturing for me, so at least one person knew I was coming. After moving to the new AZG building in May 1997, the situation totally changed, two main labs, an office with a computer and a good internet connection.

I started on a project focusing on gene expression, profiling Hodgkin lymphoma using the serial analysis of gene expression (SAGE) technique. Actually, this was the first main molecular study initiated by Sibrand. For almost six months, I only met Sibrand in the corridor, he always inquired how things were going, I always said ‘good’ and that was about all the contact we had. One day, when I successfully made my first SAGE library and had a lot of work to do, Lydia decided to call him saying “Sibrand, if you want to be on Anke’s paper, it is
time for you to come and help in picking colonies!”, and that is what he did. Among the first 1,000 SAGE tags identified, we found the chemokine TARC was one of the top hits. Follow-up studies on TARC are still ongoing.

Arjan: I met Sibrand Poppema by chance in the old pathology department building in early 1997 when I was a third-year medical student. In the UK (the University Newspaper) there was a small message about an opening to do research in the pathology department with PhD student Boudewijn Plaat, who later became an ENT specialist at the UMCG. The project was nice, but involved doing lab work for multiple days a week, and it was not possible to combine that with lectures. So Boudewijn asked me if he could introduce me to someone who might have another, more appropriate research task for me. Much to my surprise, I was suddenly standing in front of Sibrand! He was not so famous back then, but I already knew him quite well! Fifteen years earlier, the Poppema family were my neighbours in the village of Oostwold, some 10 km east of Groningen. They lived in a very nice farmhouse with an orchard, at the edge of the village. My sister and I often played with Sibrand’s children and he was always very friendly. I still remember that it was a surprise to me when he became a professor, as he was always very relaxed and not absent-minded, as kids often perceive professors (I was 10 years old then). It really felt like a shame when the Poppema family moved to Canada two years later. Anyway, Sibrand did have a nice research task for me, consisting of counting cells in tissue for Lydia’s CD45 project.
Anke: After the summer of 1997, I had a first meeting with Sibrand to discuss my project. This meeting was very interesting and I realized that I should have initiated regular meetings much earlier. So I proposed to do this on a weekly basis, and this was the start of many fruitful meetings. Later on, I learned that Sibrand’s motto is: “You have to jump into the deep end, if you want to learn how to swim”. Looking back, this is certainly something that he also applied to me.

As a supervisor, Sibrand gives space to people surrounding him, and thereby gives them the opportunity to shine. But he also makes you aware of your own responsibilities. For example, when I handed in the first project application and the first paper about the SAGE experiments describing TARC, he had some general comments and tips but no specific comments on the text. So I realized that I needed to do that myself and that it was my own responsibility. Also, when I went to him for advice, for example about how much time to spend helping other staff members or assisting in setting up techniques in the molecular diagnostics group, we would always have a good discussion and talk about a lot of things. However, when I walked out of his office, I always realized that I had not been given any specific answer or direction. It was always my own decision and never his. He was not the type to give compliments, but he always created a very positive atmosphere and an environment that would allow you to explore new directions.

Around the same time that I started, Sibrand also established a molecular diagnostics lab. I helped out as much as possible to set up B-cell clonality analysis by Southern blot and later also by PCR. When Sibrand moved on to become the dean of the medical faculty in September 1999, he made sure that the molecular diagnostic team further expanded.

Lydia: In the meantime, my work on CD45 took off. I finally decided to actually do my PhD (2nd chance) and I defended it in May 2000. Bob Zhong came over for the defence and invited me to take up a postdoc in London, Ontario. It was the most exhilarating day of my life. Looking back at the pictures, everybody was quite nervous beforehand, Sibrand included, but afterwards big smiles all round. My postdoc was really interesting, Sibrand came to see us, and we also met in Chicago for a conference on transplantation and visited Abgenix afterwards. When I came back, I also got the chance to work at Abgenix for six weeks in the summer; it was interesting to see how things work at a company: the people who talk the loudest keep their jobs, so it seems...

Arjan: After doing a research project with Lydia as a part of the medical curriculum and at the end of the “co-schappen” in 2000, Sibrand asked me if I would be interested in doing research after my graduation. I had never considered becoming a pathologist, but he convinced me to consider a combined pathology residency and a PhD project in an AGIKO construction. Looking back, I am very happy that he convinced me! He left me free to pick from two Dutch Cancer Society projects that were available and I chose the one on genetic susceptibility in Hodgkin lymphoma. This project was the start of multiple follow-up studies on HLA and genome-wide association studies.
Anke: After he left the department to become dean, he was still committed to actively participating in research. He came to the Friday morning meetings and could, in a very positive way, trigger the students to think about their results. He was the initiator of the international character of our research group. This started with medical students from Brazil, Turkey, Malaysia and China, all doing their PhDs under the joint supervision of Sibrand, Lydia and me. Of course, things changed after Sibrand left the department. The frequency with which Sibrand was able to attend the Friday morning meetings dropped, as did our visits to the ninth floor in “de brug”. Different activities were organized to create opportunities for further scientific meetings, such as the beer and pizza meetings and our research meetings at the Allersmaborg. He liked to share his plans for the Faculty and later on for the University and talked about it with much energy and enthusiasm.

Arjan: I did not meet with Sibrand a lot. The most challenging aspect of the project was to organize meetings with everyone involved: Gerard ter Meerman, Gustaaf van Imhoff, Edo Vellenga, Marijke Niens, Anke and, of course, Sibrand. I think I only managed to get all of these important people together twice. It was especially hard for Sibrand to find a suitable time. However, every discussion I had with Sibrand was valuable, and his insights on any issues that arose always resolved or at least better clarified them. A very efficient way of supervising! It took a long time before we could finally publish, but a full paper in The Lancet was a great reward.

Anke: As a group, we benefitted a lot from Sibrand’s international connections in the field of B-cell lymphoma. It is amazing to see that so many people know him, and more importantly appreciate him as a person and a scientist. He has the talent to trigger good things in a person and present new directions. We have good memories of the International Symposium on Hodgkin lymphoma that is held in Cologne once every three years. Sibrand was a constant member of the organizing committee of this authoritative event. During the event, the piano bar in the Maritim Hotel was the favourite place to meet special friends from the scientific community, such as Randy Gascoyne and Ruth Jarret. We would dance and drink until late at
night on Friday, something that most of the PhD students were not used to. On other evenings, we would go to the conference dinner and enjoy the dance party afterwards. On the last evening, we would go out for dinner at one of the pubs, for beer and bratwurst. At the annual ASH meetings, many people would view our posters or attend our presentation, not only because of their scientific interest, but also to inquire whether Sibrand was present at the meeting. Despite his busy agenda as dean, he always tried to find time to join a group dinner, preferably at a sports bar with regular food. Even for lunch appointments with international guests, he preferred to go to a restaurant that served good-quality kroketten.

Anke: In early 2000, we identified high expression of BIC in Hodgkin lymphoma and this was the starting point of an entirely new research line, focusing on the role of small noncoding RNAs, also called microRNAs. This led to new projects and the expansion of our group, with the arrival of Joost Kluiver, who started as a PhD student and later returned as a postdoc. These noncoding RNAs were also the focus of my inaugural lecture, entitled ‘Het zijn de kleine dingen die het doen’. For me, it was a very logical choice to ask Sibrand to introduce me as the new professor in 2010. Despite his busy agenda, he was more than happy to do this.

Anke, Arjan and Lydia: 
Dear Sibrand, thank you for everything you have done for the department and for the lymphoma research group!

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In the period up to 2010, Sibrand supervised close to 20 PhD students.
Pathology is a medical specialism, but also a laboratory discipline. Its key role is to provide prognoses on disease processes in patients, based on the evaluation of cells and tissues from individuals. This was traditionally done by looking through the microscope at cells and tissues after preparing them by a process developed in the early twentieth century. Pathologists were able to make a reliable diagnosis of a patient based on these observations, but there was little understanding of why and how the disease, especially cancer, developed.

**Explosion of knowledge** Experimental work on laboratory animals in the 1970s brought about insights into the normal development of organisms and how diseases arose and could be defended against. This resulted in an explosion of knowledge, especially about the immune system. One of the major figures who used these insights was Dr Karl Lennert, who tried to understand how cancers in lymph nodes were related to the normal cells of the immune system. He did this initially by careful observation of the morphology of normal cells and tissues.

**How Sibrand Poppema transformed Dutch pathology**

Han van Krieken

Today, Dutch pathology is highly respected, especially by colleagues from countries that dominated the field in the past: Germany, the United Kingdom and the United States. Sibrand Poppema was one of the key players who brought this about: not only the respect itself, but also based on achievements that include his own.
and abnormal cells, but in the early 1970s introduced experimental knowledge into his concepts. The wait was for technologies that would prove these new concepts. It was this work that interested Sibrand Poppema, who was given the chance to undertake a fellowship at Kiel: the start of his very successful career in lymphoma research.

It was no coincidence that Sibrand developed this interest. The pathology laboratory at the University Hospital in Groningen consisted of a group of individuals who were interested in more than providing correct diagnoses of patients: they wanted to understand disease by using the rapidly evolving methodologies to look at cells in more detail (electron microscopy) and try to understand the function of normal and abnormal cells (enzyme-histochemistry). But the real move forward was in immunology and in the detection of proteins in and on cells. The place to be was Kiel, in Germany. Over the following decades, many of the leading pathologists in the lymphoma field, like Sibrand, started their career there, including Nancy Harris, David Mason, Peter Isaacson, Konrad Müller Hermelink and Harald Stein, to mention a few. I was lucky enough to be there too, albeit only for three months, and about eight years later. It was then that I realized Sibrand’s impact: he was still talked about with much respect. And his work on understanding a specific form of Hodgkin’s disease had left a lasting impression.

Indeed, in Kiel, Sibrand was exposed to concise morphology, based on superb histological techniques, and to the introduction of the techniques that enabled the determination of proteins on cells and tissues. This proved a major step forward and is still one of the most important technologies today in experimental and clinical pathology. Over his subsequent career, Sibrand always built on the lessons learned here: clinical pathology should be based on experimental work and must use the newest technologies, integrated with existing knowledge and concepts. Lessons he also taught many others. Based on the combination of curiosity and interest in new technologies, he became a leader in evaluating all kinds of features in cells and tissues, leading to important scientific breakthroughs, a topic of other chapters in this Liber Amicorum.

The effect of the fellowship was also crucial at another level. Sibrand understood the importance of international collaboration and bringing great minds together. This had a lasting impact on him as a scientist, administrator and individual. It helped that he was open-minded and liked to travel, without forgetting his Groningen roots. He maintained his collaborative relationships and kept working with several colleagues he had met in Kiel over the subsequent years. In Boston, at Harvard Medical School for almost two years, he continued to discover and use new techniques. This exposure to North American culture also had a lasting effect on him. He realized that the world is the playing field for scientists, a notion that he always maintained, even when he became responsible for science and education as dean of the Medical Faculty in Groningen, and later as President of the Board of the University of Groningen.

After his experiences abroad, he brought new insights and knowledge to the Netherlands with great enthusiasm, not only to Groningen, but also to the rest of the academic pathology community through presentations at national meetings, visiting others and by
welcoming young colleagues from other laboratories. His example inspired many, including myself, to undertake a fellowship abroad. In Kiel, in particular, his previous presence was helpful to me. Many people applied for fellowships there, and being from the same country as Sibrand gave me a decisive advantage. All this resulted in a shift in the Netherlands, a shift in which several young academics decided to create an international profile, using ideas and techniques from across the world. Soon several of them actually started shaping the field of pathology, not only in the Netherlands but also internationally. One key difference from many international laboratories was that Dutch pathology had a strong connection with clinical medicine. Pathologists were involved in the daily management of patients and not only doing work in laboratories independent of patients. This combination of research and caring for patients in one organization resulted in the huge success of the Dutch academic medical centres.

Integrating diagnostic approaches  In the late 1980s, Sibrand Poppema took a bold step, certainly for a Dutch pathologist: he became the chair of the Department of Pathology in Edmonton, at the University of Alberta, Canada. This position gave him the opportunity to develop his administrative and leadership skills, but also made him realize that the North American approach to diagnostics made a lot of sense. He came from a Dutch system, with high walls between disciplines such as pathology, laboratory medicine, microbiology and genetics. Now, he was responsible for all of them and realized that integrating diagnostic approaches was the way to obtain a better understanding of the disease of a patient. This insight was far ahead of the Dutch approach, where pathology was developing fast but in isolation from other diagnostic disciplines.

In Edmonton, he was successful as a department leader and as a scientist and he created a large international network. The openness of North American culture and the international feel of the environment were both really to his taste. Nevertheless, after about eight years he returned to Groningen, after declining several other positions, including others in the Netherlands.

Returning to his beloved city and province came with a few unusual demands. At least, unusual for the Netherlands. He had experienced how important it was to bring the diagnostic disciplines together, and this was also what he wanted to do in the Netherlands. Indeed, he became the chair not only of the pathology laboratory, but also of microbiology and several other diagnostic disciplines. This was not met with great enthusiasm by most colleagues in and outside pathology. There was fear that the boundaries between disciplines might disappear (with, at the same time, the disappearance of positions that many aspired to). There was also a belief that the chair of a department should have expertise in all of the disciplines it encompassed, so how could a pathologist lead a microbiology laboratory? Sibrand was ahead of his time; in fact, the transformation he started is now, more than 25 years later, still slowly evolving.

In Groningen, the new organization model didn’t last for long. In fact, within a few years, Sibrand’s administrative talents were recognized by the boards of the University Hospital and the University and he was appointed dean. Being dean of the Medical Faculty not only involves the responsibility for science and education, as is the case...
for other deans. It also involves a responsibility to the hospital as a whole, including patient care. This position, therefore, demands the combination of a variety of managerial skills and academic leadership: a combination that Sibrand had, thanks to his experience, especially in Edmonton. The downside of his relatively short time as chair of pathology and microbiology was that the reorganization was not complete. The model worked, but due to Sibrand himself. It had not sunk in enough to be maintained without him, and his successor decided that it was better to split the departments again. Nevertheless, the notion that the diagnostic disciplines needed to work together remained.

**Governance** Parallel with the development of Sibrand, from professional to administrator, the University also needed a different kind of governance: more professional, international and scientific. It was therefore no surprise that after his successful period as dean, Sibrand made the move to the presidency of the Board of the University of Groningen. Again, this was an unusual move in the Netherlands, as very few medically trained people become members of university boards and he is the only one who became a president. This is all the more remarkable, when you realize that most presidents of universities are chosen from companies, other large organizations, or politics. However, his background as a scientist, manager and administrator made him the ideal candidate.

During his time as dean and early on in his presidency, he remained active in science. He had created a strong team and many from abroad came to complete fellowships and PhD theses. Of course, and most regrettable, the national and international pathology community saw less and less of him in person, although his scientific contribution continued to be recognized. Some even call the ‘popcorn’ cells – cells that define the disease discovered by Sibrand and Karl Lennert – ‘Poppema’ cells.

With respect to Dutch pathology, his influence is not easy to define but should not be underestimated. Perhaps it is best characterized as being able to look across borders and boundaries; borders between countries, boundaries between disciplines. Borders between countries were non-existent for him, given his collaborations and his love of travel. Whether his vision to remove the boundaries between diagnostic approaches will be successful in the coming years remains unknown. But in his science and clinical pathology, he combined pathology, genetics, immunology and oncology, and this is now normal practice in Dutch pathology. The lack of boundaries between these disciplines now characterizes Dutch pathology and what is so respected worldwide. With an open mind and welcoming approach, Dutch pathologists have become leaders of international organizations; have been involved in producing important textbooks and classifications; and are seen on the podia of large conferences. The scientific work of Dutch pathologists is very much a combination of sound morphology and the use of appropriate techniques. One other very strong characteristic is its linking of new data to clinical features and the introduction of new concepts in a clinical setting.

Obviously, Sibrand Poppema was not the only key figure in the development of Dutch pathology, but he was an example to many; through his work, his vision, but also his stamina and humour. Pathology in the Netherlands would not be what it is now if Sibrand Poppema had not set this example and mark.

Han van Krieken is a Professor of Pathology and Rector Magnificus of the Radboud University Nijmegen since 2016.
He saw this biobank as part of the much broader goal of healthy aging, which has since become an overarching theme of research within the UMCG and the University of Groningen. With his positive attitude, Sibrand Poppema widely communicated his dream and vision and was able to add Healthy Aging to many strategic agendas, both nationally and at the level of the European Union.

It is clear that Sibrand Poppema was ahead of his time. When he first envisioned Lifelines very few tools were available to study the genetic and molecular pathways that predispose us to common chronic diseases such as diabetes, asthma, depression and inflammatory bowel disease. It was not until 2006 that the first technology – albeit extremely expensive at the time – became available to perform large-scale genetic association studies and identify the genetic risk factors and genetic risk profiles that are crucial for assessing risk of disease, particularly those factors that can be indicative even before disease onset.

As Lifelines includes patients before they present with disease, it is a crucial infrastructure for identifying actionable factors that can help
prevent disease. Combined with emerging technologies, Lifelines serves as a living laboratory aimed at empowering and encouraging the citizens of the Northern Netherlands to stay healthier as they age and to stave off disease, even those for which they carry a genetic predisposition.

**The grand challenge** Chronic disease is currently the major leading form of illness in our society. Within Europe, such diseases are responsible for 86% of all deaths. Moreover, the top 10 leading causes of death in the Netherlands include dementia, lung cancer, stroke, heart failure, COPD, colon cancer, coronary artery disease and breast cancer, all of which are chronic diseases or diseases related to chronic health conditions such as obesity, high blood pressure and diabetes. Chronic health conditions increase in an aging population, and our aging society has led to the rising prevalence of chronic disease within the Netherlands. Furthermore, many patients suffer from more than one chronic disease or trait; in other words, they have multi-morbidity. One of the overarching aims of Lifelines was therefore to study universal risk factors contributing to multi-morbidity (Stolk et al., Eur J Epidemiology 2008).

Chronic diseases are multifactorial in nature, being caused by a combination of multiple genetic factors in conjunction with lifestyle and other environmental factors. Although the tools to conduct large-scale genetic studies were not yet available when Lifelines was conceived, this changed rapidly with the introduction of DNA arrays that interrogate the vast majority of genetic variation by conducting genome-wide association studies (GWAS). Over the last 10 years, risk factors have been identified for nearly every disease and trait, and the variants identified now explain between 10% and 50% of the total genetic risk for a given disease. Based on these genetic risk factors, we can now start to predict an individual’s risk of developing a wide range of diseases with reasonable accuracy, these measures of risk are called polygenic risk profiles. For example, for type 2 diabetes, Lall et al. (Genetics in Medicine 2017) showed that the risk of developing incident type 2 diabetes was 3.45 times higher in individuals carrying the highest genetic risk. Diabetes, in general, is diagnosed too late, often at the point when patients are already suffering from complications, such as damage to blood vessels due to consistently high levels of blood glucose. It is thus important to be able to recognize individuals at risk before disease onset and to have ways to prevent or delay disease. Lifelines was envisioned to be ideal for this because its participants would be followed for long enough to characterize their health before, during and after disease onset.

Prevention of chronic diseases is partially expected to come from non-genetic factors (which can also modify the effect of genetic risk). However, non-genetic factors might be hard to identify because this requires very systematic longitudinal assessment of a broad repertoire of risk factors, ranging from lifestyle to socioeconomic circumstances to environmental exposures. Although Lifelines collects a broad range of data on non-genetic factors, new technological developments are needed that allow us to continuously monitor the physiology of an individual, either directly from the body (e.g. with the aid of wearable technologies) or, in the near future, even in homes (smart homes).

**Thinking big** The initial plan for Lifelines was ambitious and aimed to include 165,000 individuals who would be followed for 30 years through regular physical examination, alternating with detailed questionnaires to collect additional information. A pilot of 2,000 participants started in 2006 in the first recruitment centre in Sneek, Friesland. With additional financial support from the northern provinces and the EU 11 programme, recruitment centres were also opened in Friesland, Drenthe and Groningen.

By May 2011, there were 50,000 participants, reaching 100,000 in September 2012 and 167,000 by November 2013. The final dataset represents a reasonable cross-section of the population: at baseline some 15,000 participants suffered from depression, 84,000 were overweight (24,000 of whom were obese), 13,000 had asthma and 4,000 had diabetes. Based on the design of the biobank, probands aged 25-50 years were initially approached. They were then asked to invite their parents and children. Thus, while the vast majority of participants were between 19 and 64 years of age at baseline...
Thousands of participants of different ages were also enrolled, including 12,000 participants who were 65 and older and 15,000 participants under the age of 18.

During the physical examinations, extensive data is collected on lung, heart, brain, kidney and liver function and blood is taken for the collection of serum, plasma and DNA, together with 24 hr urine and spot urine (morning) samples. Altogether, each participant donated 53 test tubes of biological materials to the biobank for future research on biomarkers and other studies. The biobank also collected DNA for genetic studies, although such a large-scale genetic study was not feasible at the time. A large warehouse was built (the Lifestore) to store the three million plasma and serum samples, two million urine samples, 54,000 hair samples, 11,000 stool samples and 10,000 nose and throat samples. It has the capacity to store eight million samples at minus 80 degrees. The collection of stool samples started much later in the project, when it became evident that gut flora could play an important role in the treatment of chronic disease, either as a diagnostic biomarker or as a potential preventive or treatment target. Even with this delayed start, Lifelines now holds the largest collection of stool samples from a population biobank currently in existence.

To date, Lifelines has initiated three important add-on studies:

- **Lifelines-DEEP** (n = 1500) has profiled many different layers of molecular parameters, from DNA to RNA to proteins and metabolites and the bacteria that live in our gut (the microbiome) (Tigchelaar et al., *BMJ Open* 2015).
- **Lifelines-DAG3** (n = 10,000) has collected material from the nose, throat and gut to profile the microbiome and allow for culturing of live bacteria in future studies.
- **Lifelines-NEXT** (n = 1500) is an ongoing cohort that is adding a fourth generation to Lifelines by including newborns from pregnant Lifelines participants. It is both this breadth and depth that make the Lifelines cohort study unique (Wijmenga & Zhernakova, *Nat Genet* 2018).
Despite the fact that Lifelines lacks the funding to generate genetic data for all participants, it has a number of unique features that distinguish it from the UK biobank and other large-scale biobanks.

- **Family-based design.** Lifelines strove to collect data over three generations of families, and now includes 4,505 families with at least six participants. With the help of the municipal archives, which contain data on four million people who lived in the north until 1960, even larger families can be identified that potentially link up many of the smaller families represented in Lifelines. In contrast, while larger, the UK biobank still only collects data from single individuals.

- **Genetic homogeneity.** Lifelines has focused on individuals living in the Northern Netherlands, a geographically confined area. The population of this area has long been isolated due to geographical constraints, recurrent flooding and shifts in sea level, which changed once habitable land into dunes and marshes or put entire regions underwater. Previous genetic studies have shown that this isolation has led to genetic homogeneity within the population from this area compared to the rest of the Netherlands. In contrast, the UK biobank consists of large proportions of samples of different ethnicity.

- **Prospective design.** Lifelines has a prospective design, with five-year follow-up planned over 30 years. There are two datasets already available for every participant. In contrast, in the UK Biobank, longitudinal follow-up is planned for a subset of about 25,000 participants.

- **Recruitment of volunteers of any age.** With the addition of Lifelines-NEXT, the current age range of participants is 0-93 years. This is in sharp contrast to the UK biobank, which only recruited individuals between 40 and 69 years old.

- **Detailed medication history.** Medication history, as well as self-reported medication use, is available for each participant. Information on drug use is not available in the UK biobank.

- **Special phenotypes assessed.** Lifelines has an extensive collection of directly measured phenotypes and information. It includes, for example, measurements of thyroid function (TSH, fT3, fT4), liver health (AST, ALT, ALP and GGT), immune function (anti-CCP, anti-dsDNA) and kidney function (creatinine and albumin in blood and from 24 hr urine collection). This richness of data is not present in the UK biobank.

**Research potential and prospects for population health**

Over the past 10 years, Lifelines has been used to address a wide range of research questions. Results that stand out include:

- Lifelines contributed to the first genetic study of Dupuytren’s disease, a condition in which one or more fingers become permanently bent in a flexed position. The results of this study were published in the most prestigious medical journal, the *New England Journal of Medicine* (Dolmans et al., 2011)

- Lifelines contributed data from 60 trio families (father, mother, child) to the Genome of the Netherlands (GoNL) and showed that the inhabitants of Groningen and Friesland are genetically rather diverse. This verified, through genetic analysis, that Queen Maxima was correct back in 2007 when she said that ‘the Dutchman does not exist’.

- Lifelines contributed to the largest microbiome study in the world and showed that non-genetic factors predominate over genetic factors in shaping gut flora, in particular lifestyle factors such as diet and the use of proton-pump inhibitors. Yoghurt, buttermilk and coffee were shown to have a beneficial effect by increasing diversity of gut microbes. This research provides opportunities for microbiome-based prevention of disease, as a more diverse microbiome is associated with better health.

- Lifelines research showed that the number of times people defecate is partly determined by our genes and that the norm is not once a day. This answers an important question about ‘what is normal’ and helps medical doctors advise their patients.

- Some 10% of the Lifelines participants use inhalation corticosteroids and research showed that use of these is associated with an increased BMI and, in women, with an increased risk of developing metabolic syndrome.

- By comparing Lifelines participants with the highest levels of LDL cholesterol (the ‘bad’ cholesterol) to those with the lowest levels, it was shown that 17% of apparently healthy young women with high LDL cholesterol levels carried a gene defect for familial hypercholesterolemia.
In general, Lifelines has already identified or is able to identify carriers of diseases who have gone unnoticed thus far but who may need clinical attention. For example, the healthy young females with familial hypercholesterolemia, mentioned above, may now benefit from early treatment. Research among some 52,000 Lifelines participants showed that approximately 1% of participants have a thyroid problem without knowing it, and treatment has already helped some of them. Even more troublesome is that two-thirds of those with an increased risk of stroke or coronary artery disease – based on known risk factors such as high blood pressure, high blood cholesterol and lifestyle factors – were not being treated because they and their doctors were not aware of this risk.

Having genetic data on Lifelines participants will truly contribute to population health. Currently, risk estimates for diseases are often based on traditional risk factors such as smoking, weight, blood pressure and cholesterol levels. However, risk assessment based on genetic profiles can be done at any stage of life, regardless of age or presence of established risk factors, and will remain a valid reference for the rest of an individual’s life. Consequently, action can be taken before a disease starts to manifest. For example, a four-fold increased risk of developing familial hypercholesterolemia can be detected by screening the general population for genetic risk variants associated with coronary artery disease through GWAS studies. This risk is comparable to the risk in patients carrying a DNA mutation that is connected to familial hypercholesterolemia.
The IkDus health portal. Using genetic testing, the risk of coronary artery disease can be estimated and the effect of lifestyle factors on its manifestation can be calculated. This information can be provided to participants, including actionable lifestyle options.

Cardiovascular risk

Pharmacogenetics

In addition, the response to different types of medication can be provided if individuals are prescribed drugs.

Lifelines is also an ideal cohort for understanding why some individuals do not develop disease despite carrying a disease risk mutation. For example, up to 15% of Dutch patients with dilated cardiomyopathy or arrhythmogenic cardiomyopathy have a mutation in the PLN gene (PLN-p.Arg14del mutation). For these mutation carriers, around 70% of whom are expected to develop disease, an implantable cardioverter defibrillator is advised early to prevent sudden cardiac death and heart failure. In Lifelines alone there should be 120 to 380 PLN-p.Arg14del mutation carriers, and 10 have already been identified through abnormal ECGs taken in one of the recruitment centres. In the future, actionable factors for disease prevention can be identified by comparing the 30% non-manifesting gene carriers to the 70% who do develop overt disease. Non-manifesting carriers will normally not see a doctor and are therefore not identified in clinical research settings, yet understanding how these individuals avoid disease can be crucial for understanding the disease and how to treat or prevent it.

The future is bright

It is becoming evident that healthcare is changing and will continue to change, moving from a focus on cure to one of prevention. As a living lab, Lifelines can play a front-runner position in delivering opportunities for better health to people living in Friesland, Groningen and Drenthe, especially in conjunction with regional activities such as the Regiegroep Personalized and Customized Health. This will only happen if citizens have access to self-monitoring devices for exercise, diet and blood pressure, for example. As the same time, citizens must take more responsibility for their own health. This should all centre around the 4Ps: Prediction, Prevention, Personalization and Participation. An integrated health portal will be crucial for storing the personal information, but it can also help with behavioural changes. IkDus (http://ikdus.nl), for example, is a platform that will soon be implemented in Lifelines. It can store genetic risk profiles of participants, profiles of their gut flora, and a pharmacogenetic passport. While it is inevitable that people may need to take medication, it is also known that for the great majority of cases the prescribed medication will not actually be effective, an effect partially due to genetic background. A
pharmacogenetic passport will thus help to prescribe the best drug or adjust the dosage for each individual.

Lifelines will become an innovative test environment for self-monitoring devices, used on the body and at home. The Newborn project financed by the EU, for example, will test the use of smart toothbrushes, scales and health watches, baby monitors, sensors in diapers, or meters to measure the environment. Participants will play an important role in gathering information and be active in learning and adapting, depending on the results.

A more active role for participants is beneficial for multiple reasons: for participants to commit for 30 years requires that there is something in it for them. At the same time, the way data can be collected now compared to only 10 years ago also opens up new opportunities to make the biobank much more data rich and to include new types of data not previously foreseen.

**Worth the risk** Although Lifelines has secured more than EUR 100 million in funding over the years, running a biobank on the scope of Lifelines remains expensive. That said, doing the maths, EUR 600 is relative inexpensive per participant for two full physical examinations, including a battery of laboratory tests and the storage of the biomaterials. Lifelines has already saved lives through the early detection of cancer and heart disease. It has also put Groningen on the map as a place where top research is being conducted in the field of genetic epidemiology and genomics. It makes Groningen an attractive place to work and has helped young researchers to secure prestigious Vidi and ERC grants, among other successes.

More recently, there have been critical discussions in the press about the worth of the investment. I believe, however, that we should all be grateful to Sibrand Poppema, who dared to take the risk to initiate Lifelines. It shows a truly visionary mind. Lifelines has been important for the region and the population in the Northern Netherlands. The 10% of the local people who take part in the biobank are proud to do so and extremely willing to provide biomaterials, even when that process is invasive, such as collecting faecal samples or urine samples over a 24 hour period.

The fact that the scientific findings coming from Lifelines are often communicated through newspapers and radio or television, shows participants that their investment is of national and international importance. At the same time, it is important that the biobank allows participants to maximally benefit from the information collected. In a recent example of how we can do this, Lifelines has played an important role in assessing the impact that the Groningen earthquakes have had on the psycho-social well-being and health of people living in the affected region. With developments such as IkDus, participants may also receive more personalized advice to better promote their health.

Lifelines will be crucial in changing the future of healthcare because it is an utterly unique and effective resource for translational research that bridges population research and clinical research.

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Most costs related to healthcare occur in the last few years of life. This should worry us all because of the predicted change in the age distribution of the Dutch population. To maintain the same level of healthcare, and assuming the same costs, expenditures are predicted to double, from roughly 12% of Gross National Product in 2010 to around 24% in 2050. A very conservative, no growth estimate of the cost difference is EUR 70,000 million per year! Given this enormous sum, it would be a prudent investment to set aside a small fraction of the extra expenditure for basic research that will allow us to better understand what aging is. Unfortunately, increasing healthcare costs appear to have the opposite effect as, in general, less rather than more funding is being set aside for basic science research. It is therefore of great relevance to keep reminding people of our maxim: Only if we understand what causes aging can we start thinking about rational ways to intervene in the aging process and improve the quality and length of life.

‘There are risks and costs to a program of action. But they are far less than the long-range risks and costs of comfortable inaction.’

John F. Kennedy

**ERIBA**

Sibrand Poppema was instrumental in founding the European Research Institute for the Biology of Ageing (ERIBA) in 2011. Peter Lansdorp was the first Scientific Director of ERIBA, until 2016. The current Scientific Director is Gerald de Haan. Both men reflect on Sibrand’s role in its creation.
The baby boomers are getting old! Note the predicted increase in women and men over 70 years of age by 2050 (Source: Statistics Netherlands)

The rationale behind ERIBA What drives the functional decline of cells and tissues with age? Aging is by far the biggest risk factor for many diseases, including cancer, cardiovascular diseases and Alzheimer’s. Yet, the processes that underpin aging are not fully understood and often seen as being less important or ‘natural’. For many years, aging has been perceived as an inevitable process that cannot be modified. As a result, questions about the biology of aging were not seen as a research priority. Instead, medical research funding has focused almost exclusively on specific diseases. To illustrate the point: in 2015, we went to The Hague to make the case to government officials that, given the economic impact of aging on the healthcare system, a better understanding of what aging is should be a national research priority. The comments we received ranged from ‘Do we really want more old people?’ to ‘If aging research is so important, why are not more researchers knocking on our doors?’ The first comment can perhaps be dismissed, as economists cannot seem to agree on the economic value of a life, let alone the value of productive years gained or lost. However, the second point reflects human nature: most scientists will seek funds where funds are available. Clearly, creating budgets and setting research priorities is not something governments can do without assistance!

Fortunately, Poppema and other leaders in Groningen, including Frans Jaspers and Lou de Leij, did not wait for others to make up their minds. Around 2005, it was decided that to support the strategic plan for healthy aging, an entirely new research institute with a mandate to explore the basic principles that underpin the aging process would be appropriate and necessary. Poppema being Poppema decided on the name for the institute: the European Research Institute for the Biology of Ageing, or ERIBA for short. A minor problem with the name was that when people searched for ERIBA on Google, the first hits were typically a small caravan made in Germany. A colleague from Leiden University once asked Lansdorp how ‘Groningen’ had managed put ‘European’ in front of the new research institute. He was disappointed to hear that the name was not the result of a large international lobbying effort with dinners in Brussels, etc. Instead, the name found its origin in the spirit of the President of the Board of the UG, who, like most successful entrepreneurs no doubt lives by the old adage that ‘It is better to beg for forgiveness than to ask for permission’.

Oddly enough, whereas worldwide there are hundreds of research institutes that focus on cancer and stem cells, less than a dozen institutes currently work on the biology of aging. In 2007, when the initial idea to launch ERIBA emerged, there were only three institutes in the world where research on aging took centre stage. The decision to create ERIBA is therefore testimony to the visionary ability of Poppema and the UMCG leadership.

Assembling the team While Gerald de Haan took it upon himself to coordinate the first steps in establishing ERIBA, it was deemed important that the founding director would be a renowned scientist recruited from elsewhere, preferably abroad. Both De Haan and Poppema knew Peter Lansdorp from scientific interactions at meetings, and De Haan reached out to Lansdorp to gauge his interest in leading ERIBA. At the time, Lansdorp was enjoying a sabbatical in Edinburgh, and a first encounter between De Haan and Lansdorp...
was scheduled over dinner and beer in rainy Scotland. De Haan was able to spark some interest by promising ‘a small group, just focusing on research’, so Lansdorp and his wife decided to pay a visit to Groningen. Soon after, in 2009, Poppema hosted a meeting in the Allersmaborg, the picturesque alumni house of the University in the village of Ezinge, north of Groningen city. In this former fifteenth-century castle, Poppema explained his vision for ERIBA and gained Lansdorp’s interest in helping to build it.

Poppema and Lansdorp had both launched their careers in the late 1970s and early 1980s in the field of monoclonal antibodies. Of note, monoclonal antibodies, reagents that were first described in 1975 by Cesar Milstein and George Kohler (Nobel Prize 1983), are now among the most effective and best-selling drugs to combat cancer. Lansdorp had become involved in aging research as he developed an interest in telomeres, the ends of chromosomes, when his laboratory found that telomeres shorten with each cell division, even in adult blood-forming stem cells. Does the loss of telomeres play a role in normal aging? Telomere shortening is very obvious in long-lived species, but not so much in short-lived animals. Current thinking is that the loss of telomeres limits the ability of individual cells to divide and thereby acts as a tumour suppressor mechanism. It is a sobering thought that, given enough time, the accumulation of genetic changes in individual cells can result in cancer and that the ‘senescence’ of cells via telomere attrition was selected primarily to prevent the onset of cancer prior to reproduction. Most likely, short-lived animals such as mice reproduce too fast to need the extra protection against cancer that is provided by progressive telomere shortening. This illustrates an important principle in biological sciences: ‘Nothing in biology makes sense except in the light of evolution’.

The notion that even a well-known model organism such as the mouse does not allow studies of all aspects of the human aging process underscores a research dilemma: how can evidence-based knowledge about aging in humans be developed? Clearly, studies of humans alongside studies of model organisms are essential. The Lifelines project, described in another contribution to this book, will therefore be key to complement knowledge about aging gathered from studies with model organisms. Indeed, the presence of the Lifelines project was one of the deciding factors in Lansdorp accepting the position as founding director of ERIBA. His contract was signed during the 2010 Winter Olympics, when Gerald de Haan – who has a keen interest in speed skating – stayed at the Lansdorp home in Vancouver. So, while the entire Dutch nation was in shock after the most dramatic ‘verkeerde wissel’ that speed-skating has ever witnessed by the best 10 km skater who never won an Olympic gold medal for that distance, Groningen celebrated the recruitment of Peter Lansdorp as ERIBA director. From 2010 onward, De Haan and Lansdorp worked jointly on the development of ERIBA.

ERIBA’s mission We formulated it as follows: ‘The mission of ERIBA is to understand the mechanisms that result in aberrant functioning of old cells and tissues in order to develop evidence-based recommendations for healthy aging.’
Studies undertaken by ERIBA should be specifically focused on the mechanism that triggers the age-related decline in function in non-dividing cells and the regulation of self-renewal and (epi-) genetic stability in cells from tissues with continuous turnover. Many studies have documented diminished control of gene expression and protein activity in old cells compared to young cells. The resulting loss of cells and tissue function is a major component of normal aging. Key factors are likely to differ between cells that do not divide much after childhood (such as most cells in the heart or the brain) and cells that continue to divide over a life time (such as stem cells of renewing tissues such as skin, gut and lymphocytes). Research activities at ERIBA are aimed to understand the age-related decline in function in both types of cells and tissues. ERIBA investigators address basic research questions using collaborative, multidisciplinary, technology-oriented approaches, which include next-generation sequencing, live cell imaging and studies of suitable genetic model systems.

Building for the future  The UG and UMCG leadership in the meantime had secured funding for a total sum of EUR 50 million to construct and equip a 4,500 m² research institute on the UMCG campus. This funding was derived from multiple sources, including the UG, UMCG, the province of Groningen, the European Fund for Regional Development, the Dutch Ministry of Economic Affairs, and several private foundations, including the Stichting Kinderoncologie Groningen and the Noaber Foundation. Gerald de Haan assembled a team of researchers and technicians which, under the guidance of a consulting architect, developed a plan for the building requirements in June 2009, and architectural firms were requested to use these requirements in their bid. After a public competition, the winning architect and builder were selected from a short-list of five proposals. The project was awarded to the FRISO/Uytenhaak combination in February 2010, and the building was under construction in 2010 and 2011 when Lansdorp arrived from Vancouver.

We decided to recruit openly, and called upon scientists with an interest and strong track record in the mechanisms of aging to apply for one of the research positions in ERIBA. We also decided not to focus on specific diseases, but rather on common molecular events that would or could be associated with age-dependent disorders. We were very pleased that many excellent scientists applied, which allowed us to assemble a highly energetic group of ERIBA founding scientists, originating from around the world.

ERIBA grew gradually but steadily, from two group leaders in 2011 to thirteen group leaders in 2017. The official opening took place on 7 November 2013. As of December 2017, ERIBA accommodates more than 100 employees, including 44 PhD students. Both students and PIs are evenly distributed over both sexes and half of the students originate from abroad. Collectively, ERIBA scientists have published 239 papers and generated EUR 30 million in external funds. These funds include prestigious grants from the European Research Council and the Veni/Vidi/Vici scheme of the Netherlands Organization for Scientific Research. Moreover, ERIBA’s first spin off company will be launched in 2018, and there are currently numerous collaborations with various clinical departments within the UMCG.
ERIBA has also engaged in a large number of outreach activities, featuring appearances in the Science Festival Noorderzon, coverage of scientific discoveries in newspapers such as de Volkskrant and national TV programmes such as Klokhuis.

So, what started as a vision some 10 years ago has solidified into reality: ERIBA is now a blossoming basic research institute that is fully up and running, highly visible nationally and internationally, and attracting scientists and prospective students from across the world to Groningen. Poppema’s role in the establishment of ERIBA was essential. He had the vision to establish it, the drive to convince funders to contribute to its foundation, and he trusted the scientists who were recruited to build the institute. It remains remarkable, especially these days, in which biomedical scientists are almost forced to deliver something of value to patients within a limited time frame, that ERIBA was founded as a basic research institute within the UMCG. This decision is a testimony not only to Poppema’s vision but also to the long-term vision of the UG and UMCG leadership.

ERIBA has not yet taken its final form, science never does. ERIBA will continue to develop and evolve, and no doubt it will be very different 10 or even 50 years from now. However, it will always remain the long-lasting legacy of Poppema’s vision and ambition to support research that will help us grow older in a more healthy way.

Peter M. Lansdorp is Professor of the Biology of Ageing and Gerald de Haan is Professor of Cell Biology, both at the UMCG and the UG.

Our paths at the UG became closely intertwined when it came to consolidating the UG’s reputation, both at home and abroad, as well as cooperation with industry. Sibrand played a crucial role in establishing our labs in Shanghai and Guangzhou, as well as the Advanced Research Center CBCC for sustainable chemistry. Above all, we share a passion for fundamental research and the drive to hammer the importance of fundamental research home to political leaders and society at large.

The desire to conduct applied research that delivers fast results has put pressure on fundamental research in the Netherlands. The Netherlands is good in fundamental research. My discipline – chemistry – does it very well, for instance. We come high in international ranking lists and achieve important results. But at the same time the Netherlands spends relatively little on research in comparison with several of our neighbours and finds it difficult to follow the same policy for a longer period of time. And this is despite fundamental research needing 20 or even 50 years of stability to really get anywhere.

Sibrand Poppema and I have much in common. We were both born in the Municipality of Emmen – he in 1949 and I in 1951 – and both grew up in a small peat village on what was once the Boertange Moor. He spent his childhood in Mussel (in the Province of Groningen), whereas I spent mine in Bargercompascuum (Drenthe). We both studied at the University of Groningen and pursued careers in academia.
Need for investment  Investment in fundamental research is essential to driving real innovation. It asks questions we did not even know needed asking, let alone knowing whether these are the right questions. And we are going to need this if we are to solve the big challenges that we will face. I mean challenges such as the impending energy and raw materials crises. Not only is our oil and gas running out but raw materials for electronic components, for instance, will be exhausted in a few decades’ time. To maintain our current standard of living we will need to discover completely new chemical processes. Much applied research improves and optimizes existing processes. That is important, but that alone is not enough. With fundamental research we increase our range and come up with new ideas and principles that should help us use raw materials in a more sustainable manner. We must look for chemical processes and new materials that we hardly knew existed.

Such quests require space and time for creativity. Academics who work on fundamental research at the University flourish if they are not forced into a mould, if they do not have the feeling that they have to deliver results in the short term. They must have time to explore surprising and unexpected observations. It is good to lose your way in science every now and then. Once such an environment has been created, it then attracts the best new creative minds, thus making it possible to continue to lead in science. Free and uninhibited research is the key to real innovation.

Hard to deliver  Fundamental research has become more difficult in the last decade. The low-hanging fruit has already been picked more or less. Chemistry has become big science. You need gigantic investments to work at the boundaries of knowledge. Look at our lab. We have an NMR facility, several mass spectrometers, various extremely precise microscopes, X-ray equipment and much more. Without this expensive equipment it is impossible to achieve groundbreaking results. And if you stop buying the latest devices you are soon playing catch-up and can no longer really work on groundbreaking research.

Although much has been discovered in the last decades, many areas of chemistry are still in the starting blocks. My team, for instance, is currently working in a large consortium that is trying to understand complex molecular systems that function out of chemical equilibrium. These are systems in which molecules are generally not attached with stable bonds but are instead kept together with weak interactions (such as hydrogen bonds). Little is known about this. We are very good in the chemistry of systems that are in equilibrium. Our chemical industry is based on this. But living systems are continuously out of equilibrium. It is the basis of our respiration and movement, for instance. If these were in equilibrium, everything would stop and we would die. But how do systems that are out of equilibrium work? How can they be controlled? We know almost nothing about this. Understanding this would pave the way not only to new applications but also to insight into the functioning of living organisms and, ultimately, to new possibilities in the field of medicine. We are now building moving molecular motors, inspired inter alia by the flagella that enable bacteria to move. It is still fundamental at the moment but could lead in the end to nanorobots, for instance, that seek out and destroy tumours in the body. We could thus discover and treat cancer at a much earlier stage than with our present techniques.
What is unique about fundamental research is that things are discovered that we did not even know we needed. Many people think: we’ve got good PCs, good cars and good materials; how much better does it need to get? But imagine if we had the same attitude at the beginning of the last century. If everyone had accepted that large numbers of children would die at a very young age from infectious diseases. No one could predict the discovery of antibiotics, but it happened through fundamental research. With antibiotic resistance in bacteria becoming a big problem, the hope is that something similar will be found.

We must move away from the idea that fundamental research must have direct economic value. Who in heaven’s name could predict what an effect the development of the transistor in the 1950s would have? We can now no longer imagine a world without computer chips and smartphones. If we scientists are given the freedom to go where our curiosity takes us, we will end up finding solutions to the most urgent problems. Then we in the Netherlands really can lead when it comes to innovation, at a university with a playing field extending far beyond our current horizon, where Sibrand and I are reminded of Francis Bacon, who said: ‘They are ill, discoverers that think there is no land when they can see nothing but sea.’

Ben Feringa is Jacobus van’t Hoff Distinguished Professor of Molecular Sciences at the UG.

This text is based on an article by Hidde Boersma in Experiment NL: www.quest.gjstatic.nl/uploads/media/pdf/NWO_2013.pdf
Administration
When Sibrand informed the former dean of the Faculty of Medicine, Henk Huisjes, that he wanted to return from Canada to Groningen to continue his career here, Henk and I quickly invited him for a chat. Afterwards, Henk and I both agree – noteworthy in itself – that Sibrand should come to Groningen as head of the Department of Pathology. Our reasons may have differed, which, incidentally, was not unusual. The dean saw a good opportunity to broaden the profile of the faculty – very teaching-focused – with a good researcher. He was also impressed by Sibrand’s enthusiasm for the new curriculum of the medical degree programme. I, too, regarded Sibrand as a good researcher, who could also help solve a few problems in the Department of Pathology. But more important for me was that he hinted that his ambitions went further than just becoming head of the Department of Pathology, and that he was a fervent advocate of a University Medical Centre (UMCG). The discussion about creating a UMCG had dragged on since 1984 and had been blocked in turn by the board of the university and the dean, or vice versa.

In 1995, a blue Mazda MX6 with the registration plates SIBRAND brightened the streets of Groningen. It was obvious that its owner was not a resident of Mussel- or Stadskanaal who had come to the big city, but a world citizen who had come from Edmonton to the village of Groningen. Admittedly, a village that he loves and is proud of. A world citizen who knows what it is all about in the world: quantifiable accomplishments.

Jan Hamel

Mazda MX6
Upon his return from Edmonton, Sibrand quickly assumed the role of head of the Department and managed to make peace within the Department of Pathology and significantly improve its results. Completely new ideas were implemented at a rapid rate, such as considerably faster results for patients. Another tricky point, the merging of the Department of Pathology with the medical laboratory, was soon overcome. In short, the Department of Pathology was on the map again in no time. Sibrand clearly expressed his dissatisfaction with the research at the Faculty of Medicine. With his impressive track record, it was not easy to contradict him, and acceptance for what needed to be done began to grow. He did not neglect his contacts around the world. When you attended a meeting with him on Thursday afternoon and saw him again on Monday, it was no surprise to hear that he had flown to Edmonton and back in the meantime.

Now Sibrand had shown that he was a capable administrator as head of the Department, he was ready to progress in his management career. His role as head of the Department was good preparation for working with the board of the university and suited everyone involved. No one was surprised when Sibrand put himself forward as candidate dean in 1999 with an important election theme: creating an UMCG. After his election and appointment, the cooperation between the faculty and hospital management intensified, and in effect an UMCG was soon off the ground. Although you could not say that out loud, of course.

The prince and the frog As the dean had so clearly expressed his preference for an UMCG, the president of the board of the university, Professor Bleumink, could not avoid the discussion any longer. He and the chair of the board of the university hospital agreed to consult on the matter. The dean would attend these exploratory meetings. The discussions were, however, laborious. It appeared to be a case of waiting until Bleumink retired. He himself indicated that he wished to leave the matter to his successor. After Eric Bleumink was succeeded as president of the board of the university by Simon Kuipers on 24 May 2000, the creation of the UMCG was once again on the agenda. Simon Kuipers had said that he was not against an UMCG but...

To deal with this “but”, it was agreed that the consultation between the chairs and the dean would continue and that two secretaries would attend the meetings, one for the university, Bert Snippe, and one for the hospital, Annette Hoeksema. As unlikely as it may seem sometimes, everyone was certain that there would be an UMCG in the end. All the familiar aspects were discussed in painstaking detail during these meetings. For instance, the notion that patient care should take priority over everything else in an UMCG. For some reason there seemed to be no fear that patient care would be pushed to the background by teaching and research. Who would be in charge of the buildings? Who would appoint whom? Which administrative responsibility would the university maintain and the UMCG gain? Etc. etc.

The meetings generally followed a similar pattern. A problem was usually introduced by the university. The two secretaries held a preparatory meeting in which they refined the points of view as much as possible. Before the actual consultation, Sibrand and I had a meeting that was overshadowed by our failure to comprehend the latest problem. But Sibrand always ended the preliminary meetings with the words: “We’ll get there in the end.” Which was not always the case by far.

In addition, as dean, Sibrand had regular meetings about the Faculty with the president of the board of the University of Groningen (UG).
This was not only about faculty matters. They also discussed the consultation about the UMCG. The dean was told what he should think about certain topics. In the consultation itself, each problem was solved step by step, or rather, meeting by meeting. Sibrand usually did not say much in these meetings. The situation did not suit him. He felt extremely unhappy. His position was an extremely difficult one. Hierarchically, Simon Kuipers was his boss. But at the same time, it was two gentlemen negotiating, each the chair of his own club. Although Sibrand knew that there had to be an UMCG, he also wanted to get on with the Faculty. After the meetings, Sibrand and I, generally accompanied by Annette Hoeksema, let off steam in the establishment across the road, Het Land van Kokanje. Then Sibrand did most of the talking. Between the meetings the two secretaries did exceptional work, trying all they could to align the expectations and problems.

This consultation process took four years. Finally, success was there and, as Sibrand put it, “The prince kissed the frog after all.” However complicated the consultation may have been at times, no one gave up. From the very beginning of the consultations with the university, the long-established management meeting between the hospital and the Faculty of Medicine was used informally to coordinate the decision-making. You could say that there was joint decision-making. This worked well because everyone focused on the results, with Sibrand in the lead. On 13 January 2005 the time had come: the UMCG was established. Sibrand formally joined the board, which included both the hospital and the Faculty. Not much changed after that.

Administrator

The assignment for me is to say something about Sibrand as an administrator. The problem with answering that question is whether Sibrand really is an “administrator”. Is not a real administrator someone who is neutral to a certain extent and who ensures that processes run smoothly? That is the goal of a real administrator. Drive and content are not characteristics of this type of administrator. He or she is instead the authority who takes decisions in such a way that everyone can accept them. In short, someone who keeps the peace.

Then there are administrators who rather deserve the name “politician”. They have chosen their job because they want to have influence and they enjoy holding power. They do not want to be a bit player. Their goal is not so much that of the organization itself or the nature of the work, but rather to maintain their managerial role. Their strength lies in pushing through decisions despite many opposing interests. Content does not play a big role here, either. This type can often be found among politicians.

There are also administrators who could better be called entrepreneurs. They choose the role of administrator because they have their own goal that they want to achieve. That does not mean that their goal differs greatly from the goals of the organization. It is more that it elaborates, refines or specializes the formal organizational goal. This form of administration is more controlling and has both drive and content. You can ask yourself whether this really is an administrator.

The first type is the only one that really deserves the name administrator. However, it is out of the question that one type results
in a better type of administration than the other. The question is rather which type of administrator an organization needs. This question tends to be neglected when administrator profiles and expectations are defined. A well-run organization should probably not choose the political type. It is the right place for an “administrator”.

Now to answer the question: what kind of administrator is Sibrand. First, Sibrand is, of course, the prototype of the professional who, in his job, comes upon impossibilities of which he does not understand that they are impossibilities. He thinks that these impossibilities are the consequences of, for instance, bungling administrators, and that he could do it better himself, that he can solve these problems. He is one of the few who actually practise problem-solving. In that practice, experience is an advantage and a disadvantage. The advantage is that he knows all too well why he wants to achieve something and thus does not abandon his chosen principles at the first setback. No, on the contrary. His understanding of people who think differently, is not great. This incomprehension is the disadvantage. As an administrator, Sibrand is not very political in his actions, even when he seems to be, because he is so friendly and charming.

His conduct can best be summed up with the by himself invented variant of the Dutch word focussen, to focus: ‘focusseren’. His conduct is a focus on chosen goals. In meetings he takes good note of topics that are of interest. If not: on to the next topic. If plans do not fit Sibrand’s ideas, or worse still, are counterproductive, you can count on stubborn attention and resistance. Expect a host of arguments that make it clear that you are at the very least a bit odd if you do not see the advantages. The debris left behind after the decision-making does not get much attention.

He is enthusiastic about his students, particularly if they are really interested in the profession. Meetings about the profession with students make him really “happy”. Meetings with researchers, particularly if they have real results, he loves. All are ingredients that will bring an organization such as the Faculty of Medicine further and prepare it for the future. To get a faculty, whose research was a bit neglected and whose teaching needs to remain at a high level, back on track.

The only question that remains is what kind of administrator is Sibrand. I believe he is an administrator that fits the picture of type three. Did Groningen need this type of administrator? If you ask me, the answer can only be an heartfelt yes.
As a member of the U4 Network, I have had the good fortune to work closely with Sibrand for several years. The U4 Network is a strong and vital partnership between the universities of Groningen, Ghent, Uppsala and Göttingen, with collaboration in research, education, university management and governance. It offers student exchanges and scientific cooperation in many research areas, and also supports special joint administrative efforts, for example leadership courses, peer reviews, career services and a shared sustainability mission.

Most importantly, however, the network lives through the annual U4 Rectors’ conference, during which the four rectors define the latest common strategy for the network, exchange ideas and make key decisions concerning the future of the network. This exchange of ideas among the rectors has been extremely valuable, as it has allowed – in addition to influencing the quality of the network – the development of trust among the rectors and thus the opportunity to learn from each other.

Sibrand, as the most experienced rector amongst the four, was an important advisor. His activities in Groningen, as well as on the
international stage, furthered our exchange of insights, best practices and the development of solutions to institutional challenges. As U4 partners, we recognize that a solid and sound understanding of the functioning of one’s own and other university systems is necessary to develop effective and sustainable cooperation in all fields. Sibrand fostered mutual understanding by actively participating in the U4 Rectors’ meetings, listening intently and initiating insightful proposals. He especially endorsed the trans-regional and cross-disciplinary approach of the network and as such was a highly valued partner in all of our endeavours.

Internationalization Sibrand embodies the aim of the U4 Network to educate and inspire our students and staff to take a global perspective and develop critical thinking in the international realm. He not only advocated for the increased internationalization of all of our curricula but also supported significant improvements in digitalization, which facilitates the development of an international orientation. With Sibrand as President of the Board, the University of Groningen developed into a truly international university, with one fifth of undergraduate and Master’s students and half the PhD students currently international students. Sibrand’s own international background has afforded him the ability not just to steer the entire U4 Network towards internationalization but to do so with the care and skills of a good listener, who has himself successfully navigated many boundaries.

We established the U4 Network to promote internationalization, to exchange research, and to solve institutional challenges. Furthermore, we seek to foster an exchange of experiences among students and to include student initiatives in the development of our respective institutional strategies. Sibrand has supported student and administrative staff mobilities as much as the scientific exchanges, and made continuous efforts to strengthen and broaden opportunities for student exchanges. He always had an ear for students and their needs, working closely with the U4 student network. Sibrand also firmly supported double-degree education and the joint supervision of PhD students. His efforts mean it is possible for us today to offer nine joint Master’s degree programmes in the Humanities, Social and Political Sciences, Economics, Biomedical Engineering, and Biology.

Indeed, even joint PhD programmes are no longer an idea in the distant future.

The success of Sibrand’s own ground-breaking medical research and his impressive career in the field was also the basis for the ‘Medicine and Pharmacy’ cluster in the U4 Network, which is hosted by the University of Groningen. Sibrand’s extensive scientific background has also fostered the high quality and diversity of the U4 Summer Schools, conferences and scientific workshops. His research experiences were very helpful in developing a joint approach to research within the Network, aiming for international cooperation on projects as well as focusing on joint publications across our universities. As a result of Sibrand’s leadership we have also engaged in research which tackles current challenges for a sustainable future.

Sibrand promoted the idea of sustainability in Groningen, and with the ambitious Energy Academy Europe building, he initiated a green campus, which greatly influenced and empowered our efforts to find a joint approach to sustainability in our four universities. Sustainability in all areas – research, education and administration – is one of the main goals of the Network. Sibrand’s green campus efforts have been the foundation of our shared vision of universities as one of the driving forces of sustainability.

Sibrand’s continuous suggestions, experience and efforts on behalf of students and staff have enabled the U4 Network to steadily improve. It is due to Sibrand’s leadership in internationalization and cooperation that the U4 Network has been able to grow into what it is today: a leading European academic network, well positioned to serve as a best practice case for other European networks.

I can’t thank him enough for his leadership, camaraderie and assistance over the last few years. With my best wishes for Sibrand’s future endeavours, I hope to keep in touch with him and to continue our fruitful discussions.

Ulrike Beisiegel is President of the Board of the University of Göttingen, Germany.
Agreement on Establishing the University of Groningen Yantai, witnessed by President Xi Jinping and King Willem-Alexander in October 2015

Although thousands of miles apart and with different historical backgrounds and cultural traditions, China and the Netherlands enjoy a time-honoured history of friendly exchanges. Today, when speaking of the Netherlands, the very first images that spring to the minds of the Chinese are windmills and tulips, while China’s blue and white porcelain gave birth to the development of Delft Blue pottery. In recent years, closer ties between the people and the governments of both countries have been built, with a wide range of social sectors benefitting from exchanges in trade, education, culture, science and technology. Profound and lasting friendships have taken root in the hearts of the people of the two countries.

As the first Dutch person to open a branch campus in China, President Sibrand Poppema will make a valuable contribution to the internationalization of education in both countries.

A trustworthy friend

On 27–28 February 2015, Sibrand came to China to visit the China Agricultural University (CAU) and Yantai for the cooperative establishment of the University of Groningen Yantai (UGY). King Willem-Alexander of the Netherlands and President Xi Jinping of the People’s Republic of China attended the ceremony. © ANP photo

Strategic and practical

A great educator and administrator

Fu Zetian

In my eyes, Sibrand is a trustworthy friend, a great educator and administrator with a global vision and, moreover, a doer who remains realistic and pragmatic.

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A trustworthy friend

On 27–28 February 2015, Sibrand came to China to visit the China Agricultural University (CAU) and Yantai for the first time, for the cooperative establishment of the University of Groningen Yantai (UGY). He made an on-the-spot assessment of
the infrastructure of Yantai campus, the development plan of the university and the socioeconomic development of Yantai. Deeply attracted by the pleasing climate and beautiful landscape along the coast, together with the magnificent buildings and vast space of the campus, Sibrand couldn’t help exclaiming that it was, ‘So beautiful!’ From his excited eyes, I saw his affection for Yantai and his aspiration to open the branch campus. Over the following three years, he travelled between Groningen, Beijing and Yantai more than a dozen times, vigorously promoting the establishment of UGY. Numerous discussions, endless consultations and even occasional arguments made us good friends, who would talk about everything honestly, with the common goal of the new university.

He strikes me as a well-spoken man of great knowledge, personifying wisdom and grace. He consistently cares about education and always has in mind the future prospects of higher education at the University of Groningen (UG) and the Netherlands. He respects friends with openness and inclusiveness, trying to seek win-win cooperation. He shows great foresight, with a pragmatic attitude, and presses forward in the face of difficulties. I can see in him the passion of an educator, the determination of a doer and the presence of a great administrator dedicated to internationalizing education.

In my colleagues’ eyes, he is a charismatic man with infinite vigour and vitality, and a real gentleman, with a refined way of speaking and good manners. He is never afraid of meeting challenges, especially in a country whose cultural background is entirely different. He is willing to learn and identify himself with the local people and culture. Every now and then when my colleagues spoke of him, their eyes sparkled with great admiration. He probably never realized how much he inspired and enriched the lives of others. He is an inspiration to us all, a perfect role model.

A global vision

As the President of the Board of the UG, with a rich academic tradition dating back to 1614, Sibrand has worked painstakingly and conscientiously during his ten year term in office. Due to his unremitting efforts, the University is proud to be among the global elite, with a classification in the top 100 on the Shanghai ARWU and The World University Rankings, and increasing global influence. However, as Confucius once said, those who do not plan for the future will find trouble at their doorstep. Sibrand was not content with the fame and reputation the UG enjoys at the moment. Instead, he cast his eyes towards the future and the larger world.

He was keenly aware of the fact that the number of students enrolled at the UG had begun to decline in recent years as a result of the low birth rate in Europe, and that this phenomenon would continue. A reduction in student enrolment numbers would restrict the development of the University and curb the elevation of its global influence. Thereafter, a series of ripple effects might be triggered. As an educator employing strategic thinking, he couldn’t just turn a blind eye and ignore this. Therefore, he actively explored various ways to find a solution to break the bottleneck: internationalization was the way out.

In his view, the internationalization of education, close cooperation between universities and businesses, and the deep exchange between Eastern and Western cultures and economies would provide unlimited possibilities for maintaining the vitality and marketability of high-level universities. China is now the most important partner, with the rest of the world competing to cooperate with the country in transnational education. The University of Nottingham and the University of Liverpool in the UK, and New York University and Duke University in the US, to name just a few, have all beaten a path to China, one after the other, to become the first to establish international joint universities in China. Those Chinese-foreign cooperatively run universities have produced a multitude of proficient interdisciplinary talent, with a global vision and a good command of professional knowledge and international rules, serving global and regional economic and social development. Their mutual goal of internationalizing education has been successfully realized in such a
vibrant, supportive and attractive academic environment in China and so have their ambitions to enhance their own global influence and reputation.

Sibrand, with his acute perception, captured the multiple opportunities brought about by China’s Belt and Road Initiative. His decision to establish UGY in cooperation with CAU was, as the old Chinese saying goes, a case of ‘good timing, good location and good human relationships’. Surrounded by the sea and mountains, Yantai has produced a wealth of outstanding talent and is ranked among the most powerful economies in China. As one of China’s first coastal cities opening up to the outside world, Yantai is not only a central city in the Bohai Sea Economic Rim and a traffic hub in northeast Asia, but also a national historical and cultural city. Blessed with a picturesque ecological environment, Yantai has been awarded many honours, including ‘The Most Liveable City’, in numerous city-ranking competitions, and is hailed as one of the most beautiful cities in China. Founded in 1905, CAU is designated as part of Project 211, Project 985 and the latest Double First-class University Project, related to key national universities in China. It ranked third in the 2017 US News’ Best Global Universities for Agricultural Sciences.

UGY was established with the full support of Shandong province and Yantai city in terms of policy and funds. In 2015, about 250,000 m² of educational facilities and 467,000 m² of green land were developed on Yantai campus. Within two years, an additional 1.655 billion yuan (about EUR 212.4 million) will be invested to further upgrade and develop the campus. UGY will incorporate the fundamental elements of both Chinese and European cultures and combine the wisdom of both East and West. It will be a world-class international university with advanced ideas, integrating education, research and innovation through close cooperation with enterprises in both China and the Netherlands.

Sibrand is firmly of the belief that the internationalization of higher education not only attracts funds and talent, but also contributes to a humanistic environment for international learning and research. This is of paramount importance for Dutch students to be trained in the manner that internationalization and globalization demand. Students with different origins will accelerate and promote mutual understanding between people with diverse backgrounds. International students will create a diversified learning community, where students have abundant opportunities to discuss different cases in diverse contexts so that students from different countries have a realistic and comprehensive understanding of the outside world. It’s the keen awareness of the huge impact that internationalization has upon students, universities and countries that brought Sibrand and me together. That’s also the reason why Sibrand and his team have been so determined to open a branch campus in China. As the Chinese proverb he once quoted in an interview on a famous Chinese TV programme says, ‘Foreign stones may polish domestic jades’.

Remarkable achievements have been made through our joint efforts. On 25 March 2015, Sibrand, the President of CAU and the Mayor of Yantai signed the Tripartite Memorandum of Agreement on Establishing the University of Groningen Yantai, witnessed by Dutch Prime Minister, Mark Rutte, which symbolized the official start of the preparatory establishment of the University of Groningen Yantai. On 26 October, witnessed by President Xi Jinping and King Willem-Alexander, the three parties signed the Agreement on Establishing the University of Groningen Yantai. Since then, Chinese-foreign cooperative education has advanced to a new phase. After official approval by the Chinese Ministry of Education, UGY will be the first Chinese-foreign cooperatively run university in the north of China and the first of its kind set up by a member of the European Union. Sibrand is also going to be the first Dutch person to have initiated, promoted and witnessed this historic event.

Realistic and pragmatic  Sibrand is more than a scientist. He’s a doer rather than a thinker who talks too much and does little. Cooperation between the China Agricultural University and the University of Groningen has not been all plain sailing, as a great many unpredictable obstacles related to distance, language, culture and modes of thinking have had to be surmounted through ceaseless
effort. Sometimes even conflict is inevitable. However, rather than being overcome by misgivings and fears, or worried about personal gains and losses, he has had a clear and profound understanding of today’s trend in educational internationalization. At present, worldwide competition for comprehensive national strength is naturally driving the competition for innovative talent. The internationalization of education is beneficial to both China and the Netherlands. As a famous Chinese sociologist put it, ‘Cherish your own culture, respect the cultures of others, share the cultures and the world will be in great harmony’. Moreover, as UNESCO pointed out in a report in 2015, education in the twenty-first century should be geared towards a global common good.

We live in a global village with increasing interdependence on each other for the common destiny of humankind. No country alone can deal with the challenges that human beings will face, and no country can return to the isolated island of self-sufficiency. All countries in the world need to work together with a responsible attitude to safeguard and promote world peace and development. The fundamental way to communicate and deepen understanding between countries is to cooperate. China and Europe make up approximately one quarter of the world’s population and a third of the world’s economy. The power of economic globalization, peace, development, cooperation and a continuing win-win situation links the two regions closely. As King Willem-Alexander said in a speech during his visit to China in 2015, the Belt and Road Initiative is a great opportunity for the whole world to cooperate with China and will also have a substantial influence on both China and the Netherlands.

Sibrand and I not only attached great importance to the quality of education but were also particularly concerned about the role of scientific research in education, as well as students’ scientific exploration and future career planning, when we drew up the blueprint for the future development of the new university. The UG is among the top academic research universities in Europe. It distinguishes itself in the international market through its fostering of a close link between education and research and by focusing on the three key themes of Energy, Healthy Ageing and Sustainable Society. The UG has been committed to making a significant and active contribution to solving societal issues by addressing the most pressing challenges facing humankind.

The UGY will adhere to the positioning of the UG and the CAU as research-driven universities, and aims to become a world-class international research university with exclusive features by adopting the fundamental elements of both universities. Innovative integration of education and research and close cooperation with industry are the soul of a dynamic university such as the UGY. Based on the successful experiences of the UG and the development needs of Shandong province and Yantai, five research centres will be built at an early stage. They will be the centres for Advanced Materials; Molecular Life Sciences and Human Health Research; Data Science and Systems Complexity; Catalysis and Bio-based Economy; and Adaptive Life. These five research centres will be supported by high-level research teams from both the UG and the CAU and become the main sites for conducting research-driven education for undergraduates and postgraduates. Meanwhile, the scientific research capacity and development of enterprises around the Yantai Hi-tech Zone will bring plenty of research opportunities to the new university and opportunities for internships and employment for students as well. The UGY will cooperate with hi-tech enterprises in Yantai and Shandong, applying the latest research results in industry. Cooperation agreements have been signed with Luye Pharma Group, Wanhua Chemical Group, and the Yantai Institute of Coastal Zone Research of the Chinese Academy of Sciences. Many other famous enterprises in China and the Netherlands have shown an interest in investment and cooperation with the new university.

**Strategic cooperation** Aligned with the need for the innovative development of the UG and the CAU, the establishment of the UGY
also meets the needs of strategic cooperation between China and the Netherlands. It is in complete accordance with local economic growth, industrial development and ecological sustainability in Yantai, supported by the excellent educational resources of the two universities. Sibrand, with his scientific qualities and pragmatic spirit, seized every possible opportunity to promote the establishment of the new university. Sibrand and I have negotiated with the Chinese Ministry of Education, Shandong Province, Yantai and industry in both countries, in pursuit of support and cooperation from all parties, and finally were able to gather the funds required for the campus construction. The Yantai government set a budget of CNY 0.8 billion (about EUR 102.7 million) for campus renovation projects in 2017 and no less than CNY 0.5 billion (about EUR 64.2 million) in 2018. Moreover, special funds from education and research sources, and investment from enterprises will be injected into the new university. After official approval, Shandong Province will also provide financial support to the new university. The CAU and the UG have discussed the admission criteria, the first-year curriculum, quality assurance systems, the construction of research teams and platforms, governance, modes of operation and cooperative plans with the local government and industry many times and formulated specific policies and implementation plans. We expect the related work to be completed soon in the Netherlands so that the new university will open as early as possible.

The Netherlands, once the final destination of the ancient Silk Road and Maritime Silk Road, is now the terminal point of a new Eurasian Land Bridge. The strong bond between China and the Netherlands will continue to be strengthened, promoting mutual development. The University of Groningen Yantai will open a door allowing the Dutch to better understand China. Looking back over more than one thousand days and nights of hard work on designing and building this new university, colleagues from the CAU and the UG have made painstaking efforts, prevailed against all odds and eventually got to where we are today. We can proudly say we’ve done our utmost for a great cause and it’s a great honour to cooperate sincerely with you all. The journey ahead to the successful establishment of UGY is still long and tough, but I stand side by side with Sibrand and will never give up hope. Whatever the result, because of the ideals that we hold so dear to our hearts, we will not regret our efforts for the rest of our lives.

Honouring our past while envisioning our future, we sincerely welcome everyone to join us on this inspirational journey to make the world a better place through education. I look forward, with all of you, to seizing every opportunity and confronting every challenge in the years ahead.

Sibrand, an outstanding representative of Dutch educational administrators, has helped to spread ideas, cultures and friendship between China and the Netherlands. His endeavours to carry out educational internationalization will benefit both countries and have a far-reaching influence worldwide. It has been a privilege beyond words to work with Sibrand. On the occasion of his upcoming retirement, let me express sincere well wishes to him on behalf of all my colleagues in Beijing and Yantai. Congratulations on his well-deserved retirement! We wish him happiness, success and good health as he begins his new adventure! Happy retirement!

Fu Zetian is Vice Chairman of the China Agricultural University Council and Director General of Yantai Institute of CAU.
We worked together closely for a good many years until you moved to the University. That was first in the VSNU (the Association of Universities in the Netherlands), consistently mispronounced VNSU (it’s easier to say). This we found was also closer to the reality (Vereniging van Niet Samenwerkende Universiteiten – Association of Non-Collaborating Universities).

Later, as the Board for Research and Teaching, we were brought under the newly formed NFU, Netherlands Federation of UMCs. The eight UMCs were relatively new entities formed in ‘mergers’ between the teaching hospitals and the medical faculties. The UMCs thus became responsible for patient care, teaching, research, training and continuing education. A collegial board, of which the Dean was one of the members and generally vice-chair, was in charge of the above.

I have fond memories of that time. We were chair and vice-chair of the eight UMC deans and that set us apart as a pair. I succeeded you as chair after your term of office and you had already decided who would be my vice chair. You are an enthusiastic, open and honest administrator, with whom it is a pleasure to do business and, more importantly, with whom you can have a lot of fun. Your smile or
perhaps grin with your characteristic wink always makes one feel at ease. That can lull one into a false sense of security, however. You are a clever negotiator. You have proven that many times, for instance in negotiations with the Ministry of Education, Culture and Science.

Wink  The issues at play then were manifold. The fixed quota for the Medical degree, for instance, with the lovely discussion point of how to distribute the available places between us. Or, in other words, who is going to be biggest... and indeed it ended up being Groningen. This was mainly because you and your colleague from Maastricht chose to leave the trodden path, managing to attract a further 50 Arab students who would pay the full tuition fee, thus circumnavigating the fixed quota. Not everyone was overjoyed, but what can you do? It was all signed and sealed. I personally thought it was fine because we in Leiden didn’t want to grow anymore anyway.

And then there was the discussion about what is known as zij-instroom: admitting students from other disciplines to the Medical programme. This was all made very complicated. The way we were doing it wasn’t really allowed. The Ministry agreed to discuss it with you and I as representatives of the NFU. Did I say, ‘you and I’? We went for it together, but you elegantly and forcefully set the tone and my role was to fully agree with you at certain points. And thus you (with a bit of help from me) managed to bring the above to a good conclusion for the NFU: i.e. what we wanted to happen, happened.

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You are a person who is unimpressed by official recalcitrance. That is one of the things that we have always had in common. We probably both think that civil servants at ministries tend to see things differently from how we see them. They think they see what they see, but what they see is not what they think they see. What they see is different from what they think they see. And as we regularly inform them of this, they turn things around out of sheer bloody-mindedness, so we see things differently from how they see them. Something like that Sibrand.

Internationalization was always high on your agenda. You really are a global citizen. You missed the odd meeting because you were in China or Canada or Ouagadougou. You brought those Arab students to Groningen, and you believed they would return home after they had completed the programme. Our colleagues had somewhat different expectations, but you made short shrift of those.

And you also thought it important to have English as the language of instruction in the Medical programme. Luckily, that did not happen, save for the odd part of the curriculum or the odd separate programme for foreign students. The discussion about the university-wide use of English is rearing its head once more. I spoke to you at the time about this hobby horse of yours, ‘Sibrand we shouldn’t go too far,’ I insisted. ‘If we do what you want, you should be concerned that in ten years’ time we will no longer be training doctors who can communicate in Dutch with their patients. We might even end up in a situation in which we select our patients. That we only grant the most motivated patients access to our care institutions. That the top sponsor and top clinical patient in 2025 is someone who speaks fluent English, is highly motivated and is very proficient in communicating at a high level with our young doctors so that they can put in a top performance. Patients who value the UMCG’s ranking.’ A bit over the top of course, but all it earned me was a smile or grin with that characteristic wink.

Ranking  And then there is measuring research quality, which leads to what are known as ‘rankings’, which the odd administrator persistently terms oliebollenlijstjes, after the list published each year of the top oliebollen bakers in the Netherlands. You were preoccupied with this, dissatisfied with the way in which we at the NFU wanted to determine quality. Much too quantitative in your opinion. The UMCG was not that high in the rankings then, so it was understandable that you were preoccupied with it. And here, too, you proved an extremely skilful and resolute administrator. You even managed to produce a Groningen ranking list, in which the UMCG,
as they would say in Groningen, did not do badly at all. Incidentally, the UMCG is now in a decent and stable position in the rankings.

And we mustn’t forget the quality of teaching. To the frustration of many, Maastricht always came first with flying colours. ‘Only because they do it differently from the rest,’ was what you had to say about that. But you also knew that something could be done. And you energetically made a start on it. Your successors continued to do excellent work on this, and the UMCG is now held in permanent high regard for its teaching.

To conclude, I would like to mention the endless discussions today, but then too, about training places for junior specialists. You held these with Frans Jaspers and showed fantastic commitment. The words ‘regional correction’ are firmly etched in my memory.

Dear Sibrand, there was never a dull moment with you around. But your perpetual drive, your permanent sense of humour and your even more persistent optimism were what characterized you most and made you a fantastic colleague. The Board of the University will miss you, but other organizations are sure to find you.

All the best!

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Eduard Klasen is a former member of the Executive Board and a former dean of the Leiden University Medical Center.
In December 2014, Sibrand Poppema and I were in Xiamen, a city in southeast China, with a population of more than 3.5 million people. We had travelled there to attend the ninth Global Confucius Institute Conference, along with 2,000 other delegates from 126 different countries. Sibrand and I were there to represent the Groningen Confucius Institute (GCI), a collaborative venture between the Communication University of China in Beijing, the City of Groningen, the University of Groningen and the Hanze University of Applied Sciences Groningen, with the objective of strengthening ties between China and the Netherlands.

During this conference, I saw Sibrand work in a way so typical of him that the memory has come to represent what I think of as being ‘typically Sibrand’. It started with his arrival. While an average person might need some time to recover from the disorientation of jetlag, Sibrand didn’t seem the least bit tired after his long journey – although he’d come to China straight from a working visit to Canada, without any real downtime in between. Sibrand arrived in China as if he’d commuted to the university on his bicycle, rather than having...
just flown halfway across the world. He was bright-eyed and bushy-tailed and ready to get down to business.

And that’s exactly what he did at the conference. In a meeting with a representative of the Communication University, he spoke with warm enthusiasm about the Groningen Confucius Institute, which he described as the best institute in Europe. Irrespective of whether this was in fact the case, Sibrand demonstrated his keen sense of marketing and timing. Once he’s hit his stride, it can be hard to get a word in edgewise – but his unbridled enthusiasm does tend to get people on board.

Another element of the conference was an award ceremony to honour the best Confucius Institute. Sibrand observed the proceedings with great interest. Afterwards, he asked the organization what you needed to do to get onto the list of nominees. He took note of the requirements, swung into action as soon as we were back in Groningen, and barely two years later, the Groningen Confucius Institute bagged the award! Not only did Sibrand defy convention by accepting the prize himself – this is normally the mayor’s role – but he also managed to wangle a position for himself on the global Council of the Confucius Institute Headquarters.

If you didn’t know better, you might think that the Groningen Confucius Institute was the brainchild of Sibrand Poppema. Without wanting to diminish his significant contribution to the Institute, it does fall to me to add a small historical footnote: the idea of establishing a Confucius Institute in Groningen was actually first conceived by the International Business School, part of Hanze University of Applied Sciences Groningen.

After the conference, I also saw another side of Sibrand. He took me to Gulangyu, a small island, less than two square kilometres in size, off the coast of Xiamen. The island is a UNESCO World Heritage Site and is one of China’s most popular tourist attractions. Gulangyu is nicknamed ‘Piano Island’ because it is home to more than 5,000 pianos, despite a population of less than 25,000. It is also famous for its many colonial buildings, relics from the twentieth century, during which the island was essentially a European enclave and various countries set up consulates there. The narrow streets and Victorian architecture give the island an almost Mediterranean feel to this very day.

Sibrand showed me around the island in his usual energetic style, eager to share his knowledge of the history and customs of this complicated country. It was apparent that he had spent a lot of time studying Chinese culture, and I realized that this was what enabled him to operate strategically, even in circumstances very different from our own.

For me, this time at the conference and our trip to Gulangyu were Sibrand through and through: not afraid to show ambition, willing to invest a lot of time and energy to turn his goals into reality, and quick to seize on opportunities to raise our profile on the international stage.

The University of Groningen

When Sibrand took up the post of President of the Board in 2008, the University of Groningen was known as a place where you could obtain a solid, satisfactory education – an institution that was essentially regional in its scope. From day one, Sibrand’s goal was for the University of Groningen to earn international acclaim and develop into an educational institute offering broad educational opportunities and peak areas of excellence.

At the same time, he was aware that it would not be easy for the University of Groningen to compete with other, more cosmopolitan cities and to attract international students and staff. Sibrand also knew, however, that international rankings are an important weapon in the battle for academic talent. He wanted to establish a reputation for the University as an educational institute that, despite being situated in a fairly quiet provincial town, had been among the very best for centuries. To cultivate this image, a prominent position in the international rankings was essential.

It was for this reason that he personally set about undertaking an extensive study of the most important rankings. He analysed
the methodologies used, worked out how the rankings were to be approached and how you could influence your own position in them. The admirable thing is that Sibrand not only managed to grasp the specific criteria for each of the various rankings, but also made changes to his own organization in such a way that the University’s position rose. For example, the University of Groningen became the ‘best broad-based traditional university’ in the Netherlands in student satisfaction surveys. Furthermore, under Sibrand’s leadership, the University rose from 112th to 59th in the Academic Ranking of World Universities, better known as the Shanghai ranking – a truly impressive achievement.

And although internationalization was an important leitmotif during Sibrand’s presidency – perhaps even the most important – he also kept sight of the regional context. Sometimes, in this regard, it’s the little things that make the difference. For example, thanks to Sibrand, six different flags are now flown in front of the University’s Academy Building: the University’s flag, the Dutch flag and the European flag, but also those of the provinces of Groningen, Friesland and Drenthe. The bigger things make a difference as well, of course. For example, Sibrand found a solution to an issue that had long frustrated the population of Franeker: the closure of the University of Franeker. Using substantial funding from the provincial government, he established the University Campus Fryslân in Leeuwarden.

During Sibrand’s tenure as president, the academic world was increasingly asked to focus on its responsibility to society and seek solutions to societal problems. People wanted universities to be imaginative and to join forces with the business world in order to contribute to innovation and economic growth. While this definitely became a priority during Sibrand’s presidency, it never took precedence over the University of Groningen’s international ambitions.

**Collaboration** In working alongside Hanze UAS, Sibrand Poppema was always open and clear about what he did and did not want. Of course, the University of Groningen’s positioning was always a key priority for him, but he never let that get in the way of collaboration.

Sibrand was of the commendable view that the success of Hanze UAS was important to the University of Groningen, and vice versa. This approach paved the way for a collaboration that brought significant benefits to both parties.

In the partnership established under the 2005 Groningen Agreement, in which the City of Groningen, the Province of Groningen, the University Medical Center Groningen, the University of Groningen and the Hanze University of Applied Sciences Groningen all joined forces to strengthen Groningen’s role and reputation as a ‘knowledge city’, Sibrand kept emphasizing the importance of one topic in particular: youth housing. He realized that accommodation for young people in a university town like Groningen had to be first-rate for the city to remain firmly on the national and international map. Adequate housing for the young was also a prerequisite for the University of Groningen’s international ambitions. Other topics would often fail to hold Sibrand’s attention for long. If you asked him to name the top three priorities that the Groningen Agreement partnership should be focused on, he’d reply, without skipping a beat: ‘1. Youth housing. 2. Youth housing. 3. Youth housing.’ Everything else was much lower down the list.

**China** Sibrand’s approach to the Confucius Institute was the first step towards what should have been his crowning achievement: a foreign campus for the University of Groningen in Yantai, China. The plans for Yantai revealed the extent of Sibrand’s international ambitions, but also how adept he was at exploring opportunities for the University of Groningen across Dutch borders. This is also evident in another memory I have of Sibrand. Several years ago, I was on a working visit to Incheon National University in South Korea, one of the partners of Hanze UAS. The South Korean government had commissioned a huge campus where universities from various countries could establish a base. I was given a tour of the premises, in the course of which I was asked whether Hanze UAS might be interested in setting up shop there.

Not much later, I asked Sibrand, who is also an honorary consul of the Republic of Korea, whether he knew of this campus, and how
he viewed the opportunities that potentially lay there. He replied decisively that he’d already been to visit, but that the place wasn’t very interesting. He said that the nature of the demographic situation in South Korea meant that we’d be wise not to invest. In saying this, he demonstrated his strategic international ambitions and his habitual diligence in making a thorough study of the opportunities and obstacles involved in expanding the University of Groningen’s international reach.

Yantai, then, could have been his crowning achievement. However, although the University Council twice gave his plans the go-ahead, it ultimately withdrew its support for various reasons. Perhaps Sibrand was too far ahead of the pack; perhaps some of the staff had trouble seeing sufficiently significant benefits to education in Groningen; for others, perhaps there were decisive ideological objections – in the end, it doesn’t matter. The fact that the University Council ultimately pulled the plug on the project after Sibrand had gone to extraordinary lengths to make Yantai a reality, came as a huge blow to him. In the end, it turned out that not everyone was able or willing to fall into step with Sibrand’s pace and drive. This means that the University of Groningen’s international strategy will need to be revised.

**Conclusion** Sibrand Poppema’s long and impressive career reveals him to be a driven, visionary leader who has brought many good things to the University of Groningen. He transformed the organization into the best broad-based university in the Netherlands, and he put it on the map internationally. Sibrand was able to achieve this by operating in a bold and strategic way, and by completely immersing himself in the knowledge he considered necessary for achieving his goals. Whether it was an understanding of Chinese culture or the ins and outs of the international rankings, Sibrand always knew what he was talking about, and always found a way to turn that into concrete action within his own organization.

As the presidents of the city of Groningen’s two major educational institutes, Sibrand and I have spent a lot of time together. I always enjoyed our collaboration, all the more because we worked constantly on strengthening both of our institutions and, by extension, the city and province of Groningen. In doing this, perhaps without even being aware of it, Sibrand embodied the motto of Hanze UAS: ‘Share your talent. Move the world.’

Sibrand, thank you for the great collaboration over all these years. We wish you the very best.

Henk Pijlman is President of the Executive Board of the Hanze University of Applied Sciences Groningen.

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Allowing ideas to germinate

Jan Kuks

If you wanted to meet Sibrand Poppema in the late 1980s, you went to his room on the first floor of the Department of Pathology, opposite the conference room. If I as a budding PhD candidate had known then how Sibrand’s career would take off, I would undoubtedly have knocked more respectfully, but you never know what the future will hold. The reception was warm, because a new project beckoned. The reason for the visit was the study of germinal centres, a topic that suited Sibrand down to the ground and a model from pathology that he would apply in his management career.

As the new PhD candidate from a neurological clinic I immediately felt at home with the enthusiastic pathologist who was yet to turn 40, and was allowed to look through the microscope like a colleague. Sibrand’s enthusiasm made it seem like there was nothing simpler and even made you feel that pathology as a whole might just about be doable. In fact, you soon thought of yourself as a bit of a pathologist. Enthusiasm can make you overconfident, but is that such a bad thing? And what more could a good lecturer wish for?

Germinal centres The PhD on germinal centres was written, but not with Sibrand, who had ventured to a distant continental clime. Our next meeting was in his office as Dean of the Faculty of Medicine and Health Sciences. Here his firm decisions nurtured the germinating careers of core lecturers, because that was what the PhD candidate had become.
Sibrand, leading academic turned Dean, what would that mean for the programme and teaching? This is what many thought, despite him seeming so sure of himself. It had to be something positive, because his son (now a doctor in heart and soul) was one of the students, after all. People would often say later: ‘It’s not how we would have done it, but he definitely has vision.’ In the field of teaching too, like at the microscope, there was not a trace of uncertainty in his announcements. When he moved his office from the Hanzeplein to the Broerstraat in 2009, this was not with the unconditional support of the UMCG.

Here and there Sibrand fostered the development of germinal centres. Some flourished and grew into permanent institutions, others were less viable, but you cannot always foresee what will happen, and he who dares wins – and selection already takes place early on in the thymus. Internationalization was a high priority and healthy competition with Anglo-Saxon colleagues became an important focus. Ranking lists became challenges and Groningen’s reputation grew. Students from Arab countries were invited to the Netherlands and partnerships with royal universities in the Middle East and state institutions in the Far East established. Success and disappointment went hand in hand, but we all know this cannot be avoided.

University of Oldenburg Our neighbours to the east also received attention. Collaboration with the University of Oldenburg was established. There were already historical ties between the municipalities, and the Faculty of Law was already in contact with Oldenburg. After a start-up period of about six years with much to-ing and fro-ing, more decisive steps were taken to establish links between the Faculty of Medicine and the University of Oldenburg. The university systems in the Netherlands and Germany were solid and the level of scholarship was high on both sides of the border. This made it all the more surprising that the agreement was not sealed beyond East-Groningen and East-Friesland, and one felt (and still feels) somewhat ashamed that as direct neighbours we have to use a third language. This must change!

There was a lack of Landärzte in Lower Saxony and the young University of Oldenburg needed a school of medicine. There was some disagreement on whether the emphasis of the programme should lie on doctors as general practitioners or as researchers. The loose ends were not all tied up, but the policymakers could explain this, as those in power can, and in the Netherlands in particular we like things that are a bit of a risk.

The time came in 2009. The big German neighbour was open to a bit of Dutch influence in its medical programmes, and the Groningen Faculty of Medicine thus received a visit from the Wissenschaftsrat, with Sibrand acting as the spokesman for Groningen. The green light was given and plans were made for a ‘you scratch my back and I’ll scratch yours’ partnership agreement. Research would be exchanged, joint professors would be appointed, the Groningen medical curriculum would be offered in Oldenburg, a Master’s programme in Medicine would be developed, Dutch clerks would be able to spend a year in Oldenburg, students from the new School of Medicine in Oldenburg would be welcome for a year at the University of Groningen and would even be able do a Dutch Master’s degree under certain conditions, thus avoiding the German Staatsexamen. We Dutch thought that that would particularly appeal to the students from over the border.
Various celebrations were held in Oldenburg with impressive formal photos in which ‘die Behörden’ were given prime position. We attended one of these celebrations together. With a Faculty car and chauffeur, Oldenburg was only a short distance away, and we even got to work online during the journey. Just over the border, a call was made to announce we were on our way. Duly warned, they rolled out the red carpet for our arrival. The Präsidentin knew who she was meeting, that was very clear. In the car a few quick bouts of ‘Bescheidenheit ist eine Zier, doch weiter kommt man ohne ihr’ to warm up, before the Dutch Dean took to the stage in front of a full house and gave an impressive speech in German. Afterwards you said: ‘I wasn’t sure about one word. How do you say “intricate” again in German?’ That was ‘kompliziert’, but for someone who rarely used that word in Dutch, it was to be expected that he would not have it at the tip of his tongue.

Oldenburg gradually loosened up, and new projects emerged. Sibrand was not always easy to reach for immediate answers to questions, but he was all ears if the press threatened to intervene – then his answer from Ulaanbaatar Airport arrived faster than that of the others on the mailing list who were meeting a few rooms down the corridor. Has the Oldenburg project worked out well? Would we do it differently if we could do it all again? Yes, to the latter of course, even if it is only because if you do the same thing twice in life it always leads to disappointment, and we always need to apply what we have learned. But has it all worked out? ‘Jein’ is how they put it in German: yes and no.

We now know that a one-year exchange is not enough time to earn a Dutch Master’s degree at the UG. German students also prefer to sit their own Staatsexamen anyway. The exchange between research projects could be improved. The joint Master’s programme has not happened and the curricula as a whole have – somewhat to my disappointment – begun to diverge. This was because they also use a lot from their own country in Oldenburg, which is understandable because the German education system also has much to offer. Furthermore, it became apparent that some things were not possible by law in Germany. On balance: if you want enthusiastic lecturers, you hire people who want to give shape to their own teaching and that is what has happened in Oldenburg. It has become more of a German medical curriculum.

Beauty
But a lot has been achieved. A bridge over the EMS has been built, and if we continue to do our best, the next generations of students stand to benefit. That is just one of the many projects that has succeeded beyond East Groningen.

Sibrand, you like to tell people that you come from a line of East Groningen painter-decorators. Although there is a difference between painting doors, window frames and tissue preparations, beauty is the same anywhere. Beauty is not a goal in itself, however; it’s about how you set something in motion, make it grow and then reveal it in all its splendour. And in that respect, you have succeeded. You have germinated various centres, and this has led to a widespread process of dispersal that is not easy to reverse.

Jan Kuks is a Professor of Teaching in the Medical Sciences at the UG and UMCG.
Literally and figuratively

A true architect

Peter den Oudsten

The University of Groningen has been a lifeline for the city of Groningen since its foundation in 1614. It has been the bedrock upon which the city and its surroundings have grown and flourished. The municipal council is very aware of this, and enjoys a warm and close relationship with the University.

With its huge student population, the University – alongside Hanze University of Applied Sciences – is responsible for the city’s atmosphere, vibrancy, multilingualism and vitality, for the start-up culture in the city, for the international connections of the city and the surrounding area and for Groningen’s title of number-one student city in the Netherlands. In a sense, the University also helps ensure that we have a top-notch municipal council, because most members of the council and its executive board studied at the University. To lead such a vibrant organization – an organization that is in all aspects of great significance to the north – to steer it into the future, to position it as a leading institution with a high position in the international rankings, is both challenging and inspiring.

Sibrand Poppema has achieved something very remarkable. Everyone who knows him knows that he knows what he wants, leads with a firm hand, gives his all and has a clear vision of the University’s long-term development. That not everyone always follows him and the rank and file of the University sometimes resist his chosen course is fitting for the open academic climate in the Netherlands and does not
diminish what Sibrand Poppema has achieved for the University. The good thing about Groningen is that the lines of communication are very short between the executive bodies. We know how to find each other at the University, University of Applied Sciences, Province and city council. This executive collaboration leads to fantastic results. If I had to discuss the University’s development from the perspective of the city council – and thus the unmistakable achievements of Sibrand Poppema – I would pinpoint three highlights.

**Internationalization** The first highlight is the University’s international standing. Of course, its international reputation is for a large part determined by the academic achievements of the faculties. But you have to consolidate the sum of these, and in that sense it is a reciprocal relationship. If there are no academic achievements, the University has little significance in the international arena. But if the University as a whole does not decide what it stands for, does not provide facilities for international students, does not establish partnerships with other universities and does not position itself firmly as an institution in the international academic world, it is unable to promote and support academic achievements. One of Sibrand Poppema’s achievements is managing to win the faculties’ support for a strategy that has led to such a high international ranking.

Groningen’s internationalization is visible in all sorts of ways. To begin with, the city streets have become more cosmopolitan, and students from all corners of the globe can be seen at the University and University of Applied Sciences. There are thousands of them, with new ones arriving every year, often as guest students. The two universities also attract thousands of international staff members and visitors. These people tell their families and friends in their home countries about our beautiful city, and point it out on the map. As a consequence, they all know where Groningen is, and there’s no better city promotion than that.

This international positioning as an institution is primarily Sibrand Poppema’s turf. A good example is the University’s links with Germany. Aware that the University needs international connections, he has pursued a two-pronged strategy. First, to seek partnerships with the University’s neighbours, the universities of Oldenburg, Bremen and Hamburg. The foundation of the European Medical School in partnership with the University of Oldenburg is the fantastic result of this international collaboration. The second is the University’s links with the world, China in particular. It would be doing Sibrand a disservice to allow the developments relating to a Yantai branch to dominate the evaluation of his strategy of raising the University’s profile abroad. The relationship with China is and always will be a meaningful one. The Groningen Confucius Institute is now spreading its wings with a branch in Amsterdam, and the University is further expanding its contacts in China. Sibrand has also meant a lot for the University’s international contacts with South Korea, and he was quite rightly made Honorary Consul to the Republic of South Korea. The relationship with Skolkovo in Russia was a strategic masterstroke too. Sibrand thus possess two exceptional talents: great strategic instinct and above all, the courage to see it through.
Fifty-ninth place in the 2017 Shanghai Ranking – a climb of an impressive 13 places – is an admirable place for the University, and this logically and rightfully also reflects on Poppema’s term. Let’s be honest: the University of Groningen is not a big player on the international scene, and Groningen is not a major city in terms of size. To realize such a leading international position is a major achievement.

Energy
A second highlight is the research theme of energy. This is one of the UG’s societal themes. For its energy research, the UG has joined forces with various institutions to create the New Energy Coalition (formerly the Energy Academy Europe). Gas extraction is in its twilight years, but the knowledge that has been accumulated and the current research and development in this field have enabled Groningen to carve out a position in energy transition that will be of great significance to the task that our whole country will face in the coming years. The University’s embedding in the regional economy and society is also reflected here. In the economy, by conducting research and giving young entrepreneurs the opportunity to start a business, and in society, by working with partners to make knowledge available for experiments with gas-free neighbourhood heating.

Sibrand Poppema has created a sustainable knowledge infrastructure. Take ERIBA, the Faculty of Science & Engineering. This knowledge infrastructure is apparent from the many unique buildings on the grounds of Campus Groningen. This makes Sibrand one of the most productive University presidents when it comes to new buildings. Literally and figuratively a real architect.

Healthy Ageing
A third highlight is healthy ageing. Sibrand Poppema has been particularly pioneering here. At a time in which healthy ageing was certainly not considered important, Sibrand had the vision to realize that this should be the University’s focus for the future. In itself, a logical idea because the University had a great deal of specialized knowledge about many health topics, concentrated in particular in and around the UMCG. The healthy ageing strategy has since proven successful. A business and research environment has developed around the UMCG that can be termed unique in Europe. Above all, direct links have been made with society with the launch of the Lifelines longitudinal study with a northern cohort of an unprecedented size. Researchers from all around the world can use the biobank data for research on health developments over time, also in relation to participants’ personal development and socio-economic factors. In addition, the city of Groningen has its own healthy ageing policy, which can also serve as a living lab for further research. Academic knowledge is thus immediately put into practice and tested.

These are just three highlights. A large, broad university like the UG puts in a fantastic performance and achieves great results in many areas, but these are the three that stand out for me and the city. Of course, Sibrand Poppema’s success is also the success of the University’s partners, its organization and its staff. But Sibrand was the one with the drive and energy to set things in motion and push the University, as only few can. For this alone the University and city owe him their deepest thanks.

Peter den Oudsten is Mayor of Groningen.
Sibrand Poppema receiving the honour of Knight of the Order of the Netherlands Lion in 2007

King’s Day 2018

The Board of the University in 2008: Frans Zwarts, Sibrand Poppema and Koos Duppen

Sibrand Poppema with the 30,000th student at the UG in 2014
King Willem-Alexander’s visit in 2014

The Board of the University in 2018: Elmer Sterken, Jan de Jeu and Sibrand Poppema
Society
With this background, combined with his innate academic interests and skills, he could well have become a leading researcher in the field of energy. But he became a doctor instead. Good for medical science but a pity for the energy world. However, with his vision, ambition and drive, he has played a significant role in the transition to sustainable energy in the last decade. A massive global issue, in which Groningen can play a crucial role – with compliments to Sibrand Poppema.

Energy dependency  Until around the turn of the millennium, energy was mainly the territory of engineers who ensured that electricity continuously flowed from our sockets and that gas made our homes cozy and warm. Only incidentally was there a wider public debate, generally after an incident. Nuclear power has been the most controversial topic of debate over the years. Thirty years ago, a nuclear power station exploded in Chernobyl in the former Soviet Union. Many still remember the explosion as the most shocking event in the history of energy. Already in the 1970s, the world had become aware of its dependence on oil, drawing people’s attention to how to save energy.

From peat to sustainable energy

Gertjan Lankhorst

Energy transition is nothing new, and Sibrand Poppema knows this like no other. He grew up in Mussel, in the Groningen Veenkoloniën or peat colonies. Peat was harvested there for a long time. It was used to heat our country when there was a shortage of wood before the large-scale production of coal, oil and gas took off. Born and bred in the area, he witnessed the transition from peat to coal and from coal to natural gas at close quarters.
However, once the oil supply proved sufficiently resilient, attention for this topic soon dwindled. This is strange, if we realize how dependent we are on energy. Alongside food and water, energy is one of the biggest issues facing humanity this century. Every day, the global population uses the equivalent of about 270 million barrels of oil. That is an average of six litres of crude oil per person per day. It is shared very unfairly: for OECD countries an average of 15 litres but for the rest of the world only three litres per person. And those three litres again are shared very unfairly. Over a billion people do not have access to electricity. They must make do with wood fires, candles and ignitable torches.

Energy use is expected to increase by a third over the next 25 years. Obviously not all energy is consumed in the form of oil. The dominant sources of energy are coal, oil and gas, which together amount to over 80% of the energy supply in the world. Using these sources of energy releases CO2. The amount of energy generated from CO2-free sources is growing fast, but globally it still amounts to less than 20%.

Energy policy is usually based on the trilemma of reliable, affordable and clean. It is an enormous challenge to achieve all three of these goals simultaneously. People expect energy to be available at all times and any interruptions can totally disrupt society. Affordability is expressed in various ways. For households, the energy bill often absorbs a significant part of their disposable income. The same is true for businesses. For energy-intensive industry, energy prices are an important factor when choosing where to situate factories. The fluctuating energy price is also an important risk factor when deciding on investments with a long payback period. The third part of the trilemma is ‘clean’. Our understanding of this has evolved over time. In the 20th century, the main emphasis was on the local environment. It was a blessing for the inhabitants of big cities when the much-cleaner natural gas replaced coal. In the 1970s, attention shifted from local smog to acid rain. This problem was successfully addressed with the use of cleaner technology and alternative fuels.

Energy and climate Since the Brundtland Report (Our Common Future, 1987) and the Kyoto Climate Conference in 1990, the focus has shifted to the effect of energy use on the climate. The CO2 that is released when fossil fuels are burned leads to an increased concentration of greenhouse gases in the atmosphere. This causes the temperature on earth to rise. This has far-reaching effects on the climate. Polar ice melts causing sea levels to rise. Some areas dry out, whereas others become much wetter. Attention for this issue has grown, partly because of the scientific evidence provided by the Intergovernmental Panel on Climate Change. In December 2015, nearly all countries in the world signed an agreement in Paris pledging to limit temperature increases to no more than two degrees. To achieve this, CO2 emissions will have to decrease by 80 to 95% of 1990 levels by 2020.

We are almost halfway through the period 1990–2050. Since 1990, global CO2 emissions have increased by over 50%. This makes it clear that the task for the coming decades is inordinately huge. Nevertheless, the Paris Agreement is very firm. How can we bring about this immense change?

We need more than just words. We need solutions that will have a drastic effect on the way in which we have been used to dealing with energy. It is now also clear that technological progress alone will not suffice. A wider approach will be needed. As is often said: the energy issue is too important to leave to the techies. There may have always been energy transition, but the term only really caught on about 10 years ago. This transition means that not only is change needed but the way in which we achieve this change will have to be fundamentally different. Energy is not just a technological question but a wide-ranging task for society with economic, political, geopolitical, legal, sociological and psychological aspects. The challenge is therefore to bring about this change from a broad interdisciplinary perspective.

In the last 10 years, public interest in energy has grown significantly. Although this is good news, this interest is, unfortunately, not usually accompanied by much knowledge of the energy problem. Most
people are under the impression that everything will fall into place. To begin with, the climate problem is extremely incomprehensible. Global warming doesn’t sound that unappealing to a country like the Netherlands. The consequences are, in contrast to those of other big problems such as hunger and disease, fairly invisible. A flood now and then in the United States or Bangladesh – they could have been prevented with better dikes, couldn’t they? And we’ll get solar panels if that’s what’s needed.

Surveys show that people grossly overestimate how far the Netherlands is on the way to a sustainable energy supply. Many think that about 30% of our energy is already sustainable. The reality is that after over 25 years of ambitions, about 6% of our energy is sustainable. People often also confuse the terms energy and electricity. In the Dutch energy supply, electricity amounts to between 15 and 20%. Oil and gas play a much bigger role. Sustainable energy is for a large part electricity, so that means that we need not only to replace our current electricity power stations with sustainable sources, but also to achieve a large additional generation capacity.

Unfamiliarity with the scale and nature of the energy problem is not the only reason why the transition has been difficult until now. As already mentioned, multiple transitions have already taken place in the past. From peat to coal, from coal to oil, from oil to gas. All these transitions happened more or less of their own accord. That was possible because the new form of energy scored better than its predecessor on three C’s: it was Cheaper, Cleaner and more Convenient. These conditions have not yet been met in the transition that we are now attempting to achieve. Sustainable electricity from wind turbines or solar panels is still more expensive than electricity from coal- or gas-powered power stations. Many consider wind turbines to be a blot on the landscape. The introduction of natural gas in the 1960s, and the central heating that it made possible, was an enormous improvement for society. Suddenly all the rooms in the home were cosy and warm. They are now working on a zero-energy home with fully sustainable heating. However, this concept does not as yet offer the flexibility and comfort of a gas-heated home. In short, there is much work to be done.

**Need for change**  Sibrand Poppema calls himself a ‘man of change.’ But people generally do not like change. You sometimes have to help out a bit. The classic government recipe for effecting change in human behaviour consists of regulations and tax or subsidies. This recipe is insufficient, however. Many more factors have been found to influence consumer behaviour. A typical example is the purchase of solar panels. The first pioneers were mainly governed by ideals. Their commitment to climate problems was so great that they were prepared to pay much more for these panels than for electricity from the public net. Then the payback period of solar panels became an important factor. Campaigns explained that it was better to invest your savings in solar panels than to leave them in the bank. Aided by government subsidies, this approach was definitely successful. But we have now reached a stage in which the numbers appear to count a lot less. Once a street has a number of roofs with solar panels,
the question soon crops up of why the remaining houses do not yet have any. Keeping up with the Joneses appears to have become the main factor. To help us decide on the best government policy, we need a better understanding of these types of mechanisms. The energy system is, as already explained, much more than the technical production of energy. To convert this system into a more or less carbon-free one is a very extensive and complex operation. Such a huge challenge for humanity requires and deserves scientific evidence. Strangely enough, academic interest in this issue appears to be in inverse proportion to its importance. However, a foundation has been laid in Groningen that will help change this.

‘Where else?’ we might almost say. Groningen has played an important role in the energy supply in the Netherlands for decades already. When, in the 16th century, wood became scarce, the Netherlands switched to peat. In the peat colonies in Drenthe and Groningen around Sibrand Poppema’s village of birth, peat was harvested and distributed by barge throughout the country. The discovery of oil at Schoonebeek and natural gas at Slochteren in the 1950s and 1960s heralded a new era. The gas field under the Province of Groningen was, with an extractable volume of over 3000 billion m$^3$, the largest known gas field in the world at the time. In a short time, Groningen became the centre of gas extraction in North-West Europe. With NAM coming to Assen and Gasunie to Groningen, this generated a lot of economic activity. Energy-intensive industry was drawn to Delfzijl. Businesses such as aluminium foundry Aldel came for the cheap natural gas. The construction of a large gas transport and distribution network also boosted industry in the north. By making clever use of the great flexibility of the gas production in Groningen, it was also possible to make a significant amount of gas extractable from ‘small’ fields, on the mainland and in the Dutch part of the North Sea. Not only could our ‘own’ natural gas provide the entire gas supply for the Netherlands for decades, but an almost equal volume could be exported.

**New Energy Coalition** Around the turn of the millennium, the realization grew that this gas supply was finite. The expectation was that around 2030/2040 a great need would arise for gas imports. Long-term contracts were consequently signed for the import of Russian and Norwegian gas. But opinions began to be voiced on how to make our energy supply less dependent on gas. Although the effect of the earthquakes in Groningen was still totally underestimated, it was understood that the ‘gas industry’ would at some point have to make way for other forms of energy. The decision was therefore made to set up a number of organizations that would focus on retaining Groningen’s leading position in the field of energy.

This is how Energy Valley saw the light of day, as both a regional brand and an organization that helps businesses that are active in the energy sector. Government, business and knowledge institutions (UG, Hanze University of Applied Sciences) work together in Energy Valley. It was in part thanks to this partnership that Eemshaven could develop over the last decades into an energy port of some standing.

The Energy Delta Institute, a joint venture of the UG and Gasunie, would focus on organizing courses for employees of energy businesses. To mark the departure of George Verberg as CEO of Gasunie, four chairs were established at the UG in diverse aspects of the energy problem: technology, law, economics, politics and geopolitics. This emphasized that energy is a broad issue for society.

The Energy Academy Europe was established in 2012. A unique initiative of the UG, Hanze University of Applied Sciences and industry that would give the energy transition the knowledge boost it needed. Sibrand Poppema was already involved in Energy Valley and the Energy Delta Institute in a supervisory role. He was also one of the first to appreciate the importance of this initiative and thus did his utmost to bring together the right people and resources. What is unique about the Energy Academy Europe is the interdisciplinary approach, for which a good basis had already been laid in Groningen. The necessity of approaching the energy issue as a system issue, as already explained, is put into practice here. Not just by having the UG, the Hanze UAS and secondary vocational education and training centres (MBO) work together, but above all through the collaboration of a large number of faculties at the UG and the Energy Knowledge Centre of Hanze UAS.
The three aforementioned organizations have now been brought together under the umbrella of the New Energy Coalition. Sibrand Poppema also championed this merger. The UG has built a prestigious building to house the New Energy Coalition and many researchers from the UG and Hanze UAS. As one would expect, this is the most energy-efficient teaching building in the Netherlands. The foundation has thus been laid for an organization that will have to put into practice what the coalition agreement of the third Rutte Cabinet announced: Groningen will become the knowledge centre in the field of energy transition, of regional significance and with international ambitions. The New Energy Coalition will venture into different new territories. It will have to because scientific breakthroughs are desperately needed. We must develop new knowledge for the sustainable generation, storage and distribution of energy, and for the application of these in processes and products.

Breakthroughs in industrial applications, processes and products will be needed to make the cost price of sustainable energy (and applications) competitive. We must train a new generation of young people who have integral understanding of the energy system transition and can explain this to others (‘T-shaped professionals’). This will help us make breakthroughs in changing how people think and behave. And we need a breakthrough in how we innovate. The transitions from wood to peat and from peat to gas happened naturally. The transition to a fully sustainable energy supply will not happen by itself. A system transformation is needed for this, which requires intensive collaboration between knowledge institutions, industry and government. Open innovation is essential here. And Groningen leads here, in part thanks to Sibrand Poppema.

**Leading the troops** To conclude. Sunday 15 May 2011. I’m sitting next to Sibrand in the stands in a buzzing Groene Kathedraal (‘Green Cathedral’), Groningen’s football stadium. We are watching FC Groningen play PSV Eindhoven. An exciting game, which unfortunately ends in 0-0. At a certain point the PSV keeper drops to the ground. ‘He’s faking’, Sibrand concludes drily.

‘How can you see from this distance?’ I ask. ‘I’m a doctor, aren’t I?’ Sibrand replies.

He’s right. The clever, young Sibrand who was born on the peat soil grew up to be a doctor, and a good one at that. But he’s not just a doctor. The same characteristics that made him such a good physician have also made him a very significant player in Groningen’s role in energy transition. To achieve this, we need people who see opportunities rather than problems. Who are enthusiastic instead of just pointing out the risks. Who dare to lead the troops. Who are ambitious and are not afraid to venture into new territory. People like Sibrand Poppema. Thanks to him Groningen can play an important role in solving the global problem of energy transition. Sibrand: thank you!

Gertjan Lankhorst is General Director of the New Energy Coalition.
Healthy Ageing is currently (2018) fully incorporated into our daily activities at the University Medical Center Groningen (UMCG) and the University of Groningen (UG), as well as in the Northern Netherlands in general. A search of the phrase ‘Healthy Ageing Groningen’ yields approximately 248,000 hits on Google – from ‘Healthy Ageing in het UMCG’, ‘Healthy Ageing Network Northern Netherlands’, ‘Healthy Ageing-Rijksuniversiteit Groningen’, ‘HBO Master Healthy Ageing Professional’ to ‘Healthy Ageing Visie-hoe zie je stad’, and from ‘Healthy Ageing Campus Netherlands’, ‘Healthy Ageing Summerschool’, ‘Centre of Expertise Healthy Ageing’, ‘Healthy Ageing Business Borrel’, all the way to the ‘Healthy Ageing Tour’, a six-stage UCI accredited race for world-class female cyclists.

It seems that Healthy Ageing is everywhere and has been around forever. But this is not the case. It all started in the first years of the twenty-first century, when it was decided that something had to happen: a merger of the Academisch Ziekenhuis Groningen (AZG) and the Faculty of Medical Sciences of the University of Groningen into the University Medical Center Groningen (UMCG).

Since its foundation in 2006, the mission and vision of the UMCG have focused on the topic of Healthy Ageing (always use UK spelling!).

‘Vaak moet er iets gebeuren voordat er iets gebeurt’
(Often something has to happen before something happens)
J. Cruyff – famous Dutch philosopher, 1947-2016
This bold decision by the leadership at the time, with Sibrand Poppema – Dean and Vice-Chairman of the Board – driving the process, was made to ensure a common theme for the newly founded organization. Undisclosed sources have revealed to the author that Frans Jaspers (member of the Board at the time) and Lou de Leij (then Dean of Research) significantly contributed to the conceptualization of the theme based on a number of important considerations:

- Building on existing expertise and renowned excellence in fundamental, epidemiological and clinical research on chronic, age-related diseases, such as type 2 diabetes, COPD, cancer and cardiovascular diseases at the UMCG.
- The specific demographics of the Northern Netherlands, the main catchment area of the UMCG, with specific areas characterized by low socioeconomic status, high incidence of chronic disorders and relatively low life expectancy.
- The foresight of the global Grand Societal Challenges approach, which is associated with ageing populations, with respect to both excessively rising healthcare costs and also social structures, the economy, the built environment, etc.: being a frontrunner in this regard would allow the UMCG/Northern Netherlands to become a leader in innovative solutions with potentially major societal impact.

Obviously, it has taken and still takes considerable effort to inject Healthy Ageing into the veins of the UMCG organization, for example to involve professionals who are active in care, education and/or research, to define specific goals that are based on the Healthy Ageing concept, among other things. I vividly remember the initial brainstorming sessions in the pre-UMCG era, organized by Gerald de Haan, in which the various research group leaders were asked to elaborate on their potential future contributions to the upcoming Healthy Ageing profile. Sibrand was present at those meetings and, as head of the Laboratory of Pediatrics at that time, I was happy to acknowledge that Healthy Ageing is not about old people: Healthy Ageing starts at conception, and early life events are of crucial importance for a prolonged ‘healthspan’.

After 2008, when Sibrand left the UMCG to become President of the Board of the UG and I was offered the challenging task of succeeding him as Dean, I soon learned that it takes a lot of effort to effectively realize this great promise. Fortunately, many UMCG employees, particularly those in the dedicated teams – the Healthy Ageing Team and the Center for Development and Innovation – have been and are still continuously active in lobbying and branding within and beyond the UMCG, organizing meetings and lectures, and initiating activities such as Healthy Aging in the Clinic, interactions with private partners, new educational programmes, etc. In his new role as President of the Board of the UG, Sibrand always fully supported these developments and, importantly, expanded the breadth of the Healthy Ageing profile in Groningen to other faculties of the UG and far beyond.

Healthy Ageing profile

Major demographic changes are occurring globally, resulting in a rapid increase in the number of elderly people in virtually all societies: by 2050, 20% of the global population will be over the age of 60 and the number of people over the age of 80 will have tripled compared to 2010. Overall, this shift is related to increased life expectancy, as a consequence of improved hygiene, better nutrition and better medical care, but also due to reduced birth rates. Specific regions may be particularly affected due to the emigration due to the young for economic reasons, and/or socioeconomic or political trends in society. The topic of ‘Healthy Ageing’ is therefore broadly recognized as one of the grand societal challenges for the coming decades that affects most countries on all continents. Indeed, the consequences of ageing societies are manifold and will affect individuals, communities and economies.

Ageing is the leading risk factor for nearly all major chronic diseases, such as type 2 diabetes, cardiovascular diseases, dementia and cancer. These chronic diseases constitute an increasing cause of morbidity and hence a major driver of healthcare costs today and increasingly so in the near future. Conceptually, it is important to emphasize that Healthy Ageing is not about elderly people: in fact, healthy ageing starts in the womb and early life, when nutritional status or exposure to pollutants, for example, can have
a strong impact on health outcomes later in life due to ‘metabolic programming’.

Programmes aimed at promoting healthy ageing should therefore adopt a life course approach in all respects and be targeted to promote healthspan rather than lifespan. Healthspan is defined as the years lived without chronic age-related conditions, in which people are able to live an active life and contribute fully to society. It is therefore evident that, in the end, a meaningful extension of healthspan for all citizens around the globe will take enormous effort in the fields of life sciences and medical and biomedical sciences as well as the social sciences, nutritional sciences, economics and spatial sciences. With respect to the latter, it is becoming increasingly clear that the built environment has a strong impact on the life course of individuals, not only with respect to the indoor environment of housing and public buildings (air quality, light) but also the surrounding infrastructure and local availability of healthcare facilities.

It is also evident that economic and cultural differences between countries will have to be taken into account as an additional level of complexity. Maintenance of a healthy lifestyle from birth onwards (or even prior to birth), through primary prevention, for example, will be key, but has thus far proven difficult to achieve, and progress will require an improvement in health literacy in all communities.

This process, in turn, will be strongly influenced by socioeconomic differences between communities. In addition, the early detection of markers of disease, preferably of biomarkers for a group of age-related diseases, rather than for each one separately, is necessary for early and effective treatment (secondary prevention). Application of novel consumer-tailored eHealth tools may be of great value in this respect. Finally, improved treatment strategies for most chronic, age-related diseases are still urgently needed, along with the recognition that each patient should be considered an individual who requires a ‘personalized/individualized or precision medicine’ approach. Novel technologies in genetics, analytical chemistry, imaging and bioinformatics provide, in theory, the tools for personalized medicine, but full application of Big Data in public health and clinical care is still in its infancy.

In its strategic plan, released in 2010 under the new leadership of Sibrand, the University also adopted Healthy Ageing as one of its three research priorities, the other two being Energy and Sustainable Society. Healthy Ageing programmes across the various faculties have allowed for the initiation of new entities at the crossroads of different areas of expertise, for example the Centre of Expertise Healthwise, and the newly founded Aletta Jacobs School for Public Health (collaborations between the Faculty of Economics and Business and the UMCG), in which research and education is concentrated in the field of Health and Healthcare Economics, Business and Management. Research topics include quality, safety and patient logistics, organizational change, eHealth, pensions, mechanisms of the healthcare market, and consumer behaviour in the use of medication.

Determinants of success In hindsight, it is relatively easy to pinpoint some critical factors that underlie the successful implementation of the Healthy Ageing profile at the UMCG, the UG and in the region. I have identified the laying of the following four cornerstones, which Sibrand initiated, stimulated, and/or propelled and which he always enthusiastically and energetically supported. Obviously, more initiatives could be mentioned, and it should be emphasized that many dedicated people have contributed to their
realization and execution to date, inspired and driven by the relevance and possibilities of the broad theme of Healthy Ageing.

The first cornerstone is the establishment of eye-catching, internationally oriented research infrastructures for Healthy Ageing research, such as the biobank and the population cohort study Lifelines (looking for the causes of health problems) and the European Research Institute for the Biology of Ageing (ERIBA, ‘6 floors are better than 3’) – a detailed description of Lifelines and ERIBA can be found in the contributions by Cisca Wijmenga and Peter Lansdorp elsewhere in this volume.

The second important component is the realization of the Healthy Ageing Campus Groningen, located on and around the UMCG premises and close to the city centre of Groningen. The Campus provides an inspiring ecosystem where high-quality researchers and entrepreneurs work together with governments on innovative Medical Technology & Devices, special Molecules & Materials, and in Developing, Testing and (Bio)-Analysing new Pharmaceuticals. With the focus on ‘how to grow old in a healthy way’, campus participants have undertaken excellent research and developed expertise in various areas. The Healthy Ageing Business Cooperative, in which Life Science and Medical Technology SMEs unite, has been active since January 2015, with one clear goal: sustainable regional development.

The third cornerstone is the triple helix network organization of the Healthy Ageing Network Northern Netherlands (HANNN). This network has brought together the private sector, government organizations and care knowledge institutions to contribute to the development of solutions that yield a better quality of life at all ages, which will also create a basis for substantial economic and societal activities. The challenge of staying healthy longer through innovation calls for fundamental breakthroughs in core areas that determine health and disease, particularly in the fields of Life Sciences, Food & Nutrition, Medical Technology, Care & Cure and Healthy Lifestyles. Thanks to the scale of the approach, the natural cohesion in the region, national and international cooperation, the knowledge available and the short lines of communication with the private sector, the Northern Netherlands is a logical trial area for innovations and new care concepts.

In July 2016, the European Commission presented a ranking of European Reference Regions in the field of Active and Healthy Ageing and it was apparent that the Northern Netherlands region leads the pack in Europe when it comes to Healthy Ageing. No less than 78 regions from 22 Member States were evaluated. The Northern Netherlands – under the leadership of the HANNN – achieved the highest possible score of four stars, an honour bestowed upon only a very select group of Reference Sites. This recognition of excellence in Healthy Ageing in the Northern Netherlands creates exposure and collaboration opportunities for its knowledge institutes and companies, making it easier to export innovations in the area of healthy and active ageing. The Northern Netherlands is the only Dutch region to have received the coveted four-star status. This will, in the years to come, be translated into additional activities in the northern knowledge institutes but also in EU-supported economic initiatives, such as those embedded in the Knowledge and Innovation Consortium (KIC) for Health, a multibillion euro programme under the umbrella of the European Institute for Innovation and Technology (EIT).

The fourth cornerstone is the foundation of strong international research, innovation and educational networks, including partners from the EU, Asia and the US, and exemplified by the Alliance for Healthy Ageing (AHA). This was clearly a favourite part of the job for Sibrand: if a world-ranking for airmiles earned by University presidents existed, Sibrand would definitely be at the top.

The objective of the Alliance for Healthy Ageing is to advance the development of tools that enable older individuals to live independently by bringing together clinicians, engineers and scientists and providing a forum for the exchange of ideas. The Alliance includes the Mayo Clinic Robert and Arlene Kogod Center on Aging (Rochester, Minnesota, US), the UMCG/UG, the Noaber Foundation (Ede, the Netherlands) and Vita Valley (Ede, the
Thus, there is a lot of work still ahead of us and we need energetic, internationally oriented and visionary people to reach our goals – dynamic people who live their lives in the spirit of another gem of Cruyffian wisdom:

’Ik maak eigenlijk zelden fouten, want ik heb moeite me te vergissen’ (Actually, I make very few errors, because I have trouble making mistakes)

J. Cruyff – Dutch philosopher, 1947-2016

Therefore, based on his enormous contributions, I would like to propose the appointment of Sibrand Poppema as the first Honorary Citizen of the First Human-Made Blue Zone and to nominate Bunne (Drenthe) as its Capital.

Outlook

It is evident that during the last 15 years or so a massive amount of work has been done by many people to promote Healthy Ageing activities in the Northern Netherlands, leading to enhanced scientific, educational and economic activities. But this does not yet mean our ambitions have been fulfilled: the north must become the first human-made Blue Zone in the world! The term ‘Blue Zone’ was coined to define regions in the world, such as Okinawa (Japan), Sardinia (Italy) and a few others, where people live to very old ages. The Northern Netherlands is currently far from being a Blue Zone. People living in the north, on average, die a few years younger than people in other parts of the Netherlands.
Histories of universities differ throughout the world. The University of Groningen has quite an interesting history. The 1614 founding of the University – at that time still a college of higher education – was an initiative taken by the Regional Assembly of the City of Groningen and the Ommelanden. At that time, there were four faculties – Theology, Philosophy, Law and Medicine: disciplines we would define today as the Humanities, the Social Sciences and Pharmacy.

The first 50 years of its existence were very fruitful for the University of Groningen, with about 100 students enrolling every year. However, around the 1670s, its further development encountered obstacles from outside forces. As well as a troublesome relationship with the Staten-council, the City was under siege by Bommen Berend. The University also faced barriers from within, as there were theological differences of opinion. A fire in 1906 marks another less than enviable page in the University’s history books, not to mention the many internal political blazes that were enflamed and extinguished. All such events are simply part of the history of any larger institution that has the ambition of sustaining itself and growing on that basis.

Creating pathways towards societal impact

This article is about Sibrand Poppema’s involvement with the University of Groningen’s Sustainable Society theme. This allows us to take leaps through history – which is acceptable if you think of time as being relative. Or even non-existent. As Zhuang Zi, loosely translated, said: ‘For one man, five hundred years can feel as if it were equal to one spring felt by the majority of men’.
Although universities mushroomed as stand-alone institutes over the course of time, they have also grown to be part of an ecosystem cultivated by various stakeholders. On a national level, organizations such as the Ministry of Education, Culture and Science, the NWO, KNAW and umbrella organizations such as VSNU can be seen as important stakeholders in the current ecosystem. Some ten years ago, the Ministry of Education, Culture and Science stipulated that university strategies should mirror the full extent of their research and teaching disciplines. This implied a strategy shift for the University of Groningen in terms of its overall profile.

Since its establishment, the University has grown to become a broadly based classical university, with the STEM disciplines (Science, Technology, Engineering and Mathematics) coming to take their place alongside the Humanities, Social Sciences and Medicine over time. Through the societal themes of Healthy Ageing and Energy, the University of Groningen already represented a wide range of Medical and STEM disciplines. However, the Humanities and Social Sciences lacked such an umbrella organization.

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Do you think you can take over the universe and improve it?
I do not believe it can be done.

The universe is sacred.
You cannot improve it.
If you try to change it, you will ruin it.
If you try to hold it, you will lose it.

So sometimes things are ahead and sometimes they are behind;
Sometimes breathing is hard, sometimes it comes easily;
Sometimes there is strength and sometimes weakness;
Sometimes one is up and sometimes down.

Therefore the sage avoids extremes, excesses, and complacency.

Lao Tzu, Tao Te Ching, chapter 29

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Launch At the start of the academic year on 5 September 2011, Rector Magnificus, Elmer Sterken, announced the launch of the University of Groningen’s third societal theme of Sustainable Society: the umbrella organization supporting the Social Sciences and Humanities at the University of Groningen. A thinktank of professors outlined the perspective of the societal theme, introducing its current cornerstones: cooperation, inclusion and resilience. Along these lines, the University of Groningen’s societal theme of Sustainable Society developed new initiatives, such as network activities and establishing platforms for researchers, programmed around real-time societal challenges. In combining scientific excellence with societal challenges, the University of Groningen has gained a strong societal perspective that contributes to its ambition of being a responsible player in society.

With the strong support of President of the Board, Sibrand Poppema, in a short period of time the societal theme of Sustainable Society gained European recognition, promoting universities as important
stakeholders in society and the relevance of the societal impact of scientific knowledge. At the May 2016 opening of the first European ACCOMPLISH dialogue platform held in Groningen, Poppema made a strong case for the role of universities in society. This paved the way for the Sustainable Society theme to take the lead in many national and European debates on the need to increase the societal impact of universities.

In general, universities continue to be viewed as isolated institutions, often considered to be ivory towers with marginal connections to society. True, universities are bureaucratic organizations that, in many cases, have static complex organizational structures. And indeed, the introduction of the societal theme of Sustainable Society was received rather sceptically by many in the University. It takes leadership and perseverance to promote a new way of thinking in a traditionally organized university environment.

At a time when societal challenges have become more complex, it takes an interdisciplinary approach to develop new insights and solutions accordingly. Inevitably, this has resulted in universities reviewing their roles and how they relate to society. Many universities are now beginning to recognize their added value to society. With the establishment of the societal theme of Sustainable Society, the University of Groningen can be seen as one of the academic front-runners in reviewing its role in society. And yet, this is not without a struggle.

There are still many barriers to universities opening up to the current ecosystem and making connections with government, industry and societal organizations. To name a few, apart from the scepticism, the academic reward system does not encourage scientists to go beyond the core business of education and research. Having societal impact is not yet rewarded as such. Traditionally, scientific journals have a tendency to publish monodisciplinary research articles, having a negative effect on interdisciplinary collaboration, not to mention failing to stimulate societal impact.

Another barrier that we see is the slow, deliberate pace of science, which does not accord with the fast pace of political environments or business developments. In particular, when it comes to societal issues, new insights are needed today rather than tomorrow. A better understanding of how academia works is required to foster its connection to policy and business cycles, and in this regard universities also need to better explain what the academic cycle entails, in order to create a better understanding of how the scientific process works.

**Impacts** In the UK, universities have a longer tradition of working with societal impact in mind as a result of their Research Excellence Framework (REF), which assesses the quality of research in UK higher education institutions. One of its key purposes is to provide accountability for public investment in research and produce evidence of the benefits of this investment. Although other European universities can learn a lot from this UK system, one main concern with it is that the REF definition of societal impact is often considered the only or the most important. Without getting into a conceptual discussion about the meaning of ‘impact’, the REF method is not the only way to address societal impact. In short, the societal impact of science should not overlook the value of its own pathways.

Numerous process-based benefits and micro-impacts are produced along the knowledge production-translation-integration chain. Impact not only concerns the resulting real-world ‘change’ in practices or behaviour. The societal impact of science might be realized in a policy brief, or through sustained relationships between academia and other stakeholders, or by scientists being invited to provide expert advice to advisory committees. The latter is a good example of impact. When scientists are invited to give advice as experts, this is already evidence that their research is having an impact on society. Whether or not the advisory group turns out to be ‘effective’ and change the policy or practice, academia will have already produced a micro impact by being nominated to serve on the committee. Thus, the pathway towards societal impact already runs through simple participation in meetings, contributing to the debates and addressing the issues at hand on the basis of state-of-the-art scientific insights.
In doing so, universities contribute to creating policies that are better informed by the scientific evidence. Here, there is a lesson to be learned at university level with respect to acting in the broader ecosystem of government, industry and societal organizations. In particular, in relation to science and policy collaboration, we should refer to policies as needing to be better informed, rather than stating that policies must be based on scientific results alone. Again, understanding and acknowledging each other’s roles in fact finding is crucial for collaboration. In science and policy collaboration, researchers should accept the fact that scientific results are merely one of the many elements that inform the decisions of policymakers, who need to take into account other forms of knowledge provided by previous experiences, the best practices of others, the opinions of the public or pressure groups, the influence of the media and, last but not least, the political dynamics. Thus, talking about policies informed by evidence, rather than purely evidence-based, serves reality best.

With respect to the UK REF system, societal impact implies changes we can see (demonstrate, measure, capture) outside academia, in society, the economy and the environment. These are changes which are seen to occur as the result of scientific studies and research papers. Dissemination, communication, engagement, knowledge transfer, knowledge exchange and knowledge mobilization are all vital in translating research into practice, but in its truest form, these ‘activities’ in the UK are not considered to be impacts. In the REF, the societal impact of science only concerns the projected value of the resulting changes.

Micro impacts have a prominent role in the literature and the contemporary policy debate outside the UK, where the focus is on productive interaction rather than resulting change. The construction of knowledge in the social sciences and humanities usually follows from a debate that takes place between a broad community of scholars, who are located in many institutions, and do not necessarily work together. Thus, in contrast to the ‘hard’ sciences, it becomes questionable whether drawing a direct link between impact and the ‘contribution’ of a single or a group of scholars within one particular university is appropriate.

Reducing impact to a measured subset of effects obscures the expertise needed for knowledge brokerage, cultural change, partnership management, strategic planning and reconfiguration, and many other elements in combination. We need to develop an approach to registering, analysing, assessing and managing the ‘smaller steps’ to gain a comprehensive understanding of the productive interaction between academia and society. The technical distinction between the REF and other methods of impact assessment concerns ‘attribution analysis’ (who did what to provoke which observable change) versus ‘contribution analysis’ (who contributed to a continuum of processes and products that through combination and interaction may provoke change). The latter approach is embraced by the UG’s Sustainable Society theme, which considers that the pathways towards societal impact are as important as the change itself.

Once upon a time, Zhuang Zi dreamed that he was a butterfly, a butterfly flitting about happily enjoying himself.

He didn’t know that he was Zi. Suddenly he awoke and was palpably Zi.
He didn’t know whether he was Zi who had dreamed of being a butterfly, or a butterfly who was dreaming that he was Zi.

The transition is called the transformation of material things.

Zhuang Zi, The Inner Chapters

Field marshal In the five years of collaboration with Sibrand Poppema in my role as the Director of Sustainable Society, he regularly appeared to me to play the role of field marshal. Field marshals are decisive, forceful and natural-born leaders. Using their drive, they organize large groups to perform complex tasks. As field marshals are most likely to see where an organization is heading, they have a tendency to expect others to follow their vision. They want to communicate that vision to others, sometimes revealing their anxiety when others are not willing or able to simply follow where
they see the entire universe is heading. In their ambition to attain results, field marshals are more directive than informative in their social exchanges. They exhibit a high level of determination and a sharp mind to achieve long-term objectives. Field marshals are ahead of everything and everyone.

Sibrand Poppema’s ambitious attitude and strategic capacity to acknowledge long-term dynamics were crucial in paving the way for the societal theme of Sustainable Society at the University of Groningen. He was key to getting the organization moving, without extensive interference, setting the direction and showing the way, at the same time avoiding micro-management. With gratitude we may look back at the strong contribution of Sibrand Poppema to the University of Groningen in relation to its opening up to society. Redefining its strategy and thereby changing the institutional framework will be remembered as a major contribution to the history of the University of Groningen.

In the pursuit of learning, every day something is acquired.
In the pursuit of Tao, every day something is dropped.

Less and less is done
Until non-action is achieved.
When nothing is done, nothing is left undone.

The world is ruled by letting things take their course.
It cannot be ruled by interfering.

Lao Tzu, Tao Te Ching, chapter 48

Transforming big academic institutions is not an easy task. A binding element is mindset. To achieve the necessary cultural shift requires an enormous effort, and it will not take place unless all parts of the institution are involved. Senior management, teaching staff, administrative offices, students and even alumni to a great extent, influence the mindset of a university as an institution. The approach to change is different for each of these groups. In many cases, change only happens as a result of a problem that needs to be solved, an urgent issue, or even a threat. Strangely enough, in many cases change is not a result of a situation in which an opportunity has actually presented itself. Instead, very often fear is the dominant driver of change.

Worldwide, universities are experimenting with new methods in their ambition to increase the societal impact of scientific knowledge. The societal theme of Sustainable Society has the ambition of creating opportunities for stronger collaboration between science and policy. This is part of a shift in the mindset of our academic institution, which should not be mistakenly seen as a mere fashion that will fade and be replaced by another. The societal impact of universities is a trend that should be acknowledged as an irreversible step in the right direction. It is a genuine opportunity to learn, grow, improve and adjust in a way that leaves the academic institution in a stronger position than before, without sacrificing excellence in academic research.

There is a growing interest across the European research and innovation system in how to assess and communicate the diverse impact of scholarly work. Across the European research community, scholars, university administrators and policymakers are looking to develop impact assessments and impact toolkits to better communicate the value of scholarly work; to increase collaboration with partners outside academia; and to attain a broad range of other benefits. The notion of research impact has gained significant importance and has, to a varying extent, been embedded in research policies referring to universities’ contributions to the knowledge economy, solving grand societal challenges, building an open and inclusive European Research Area, and more. Societal impact goes beyond a focus on industrial and commercial partnerships designed to create economic growth. It also equally concerns – or even more so – partnering with governments and societal organizations to support the growth and development of socially embedded academic communities that strongly contribute to societal cohesion and well-being.
The University of Groningen’s societal theme of Sustainable Society intends to make a major contribution to developing an ecosystem of equal entities that play a strong, transparent and independent role in and for society. We are grateful for the persistent support from Sibrand Poppema for the genesis and growth of the Sustainable Society theme. As mentioned, it takes strong leadership to work ahead of one’s time. We hope the University of Groningen continues to encourage this type of strong leadership, upholding an agenda-setting role in its participation in the European and national societal impact debate. Still, the biggest challenge could lie in what Zhuang Zi, loosely translated, once said: one needs to distinguish those things which are the result of the underlying forces of the universe and those which are the result of human intervention.

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_The Master doesn’t talk, he acts._

_When his work is done, the people say, ‘Amazing: we did it, all by ourselves!’_

Lao Tzu, Tao Te Ching, chapter 17

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**Sharon Smit is Director Sustainable Society, UG.**
Antonio moved from Venice, which had been the centre point of his activities for most of his life, to Vienna, with the aim of continuing his work on operas. Sibrand moved to Oude Boteringestraat to take up his position as President of the Board of the University of Groningen. Both men, each in their own way, have been very influential during their careers.

Of course, there are many differences between the University of Groningen, The Four Seasons, Sibrand Poppema and Antonio Vivaldi. The latter was a successful composer who left us over 400 concertos, of which 221 are violin concertos. He was the Music Director of one of the four most famous Venetian conservatories for female students for nearly 40 years\(^1\). In contrast, at that point in time, the University of Groningen was only one hundred years old and was struggling with its existence due to theological differences and political problems, offering education to 200 to 300 male students\(^2\). Nevertheless, here I aim to discern some of the similarities to highlight the contribution of Sibrand to establishing relationships with external partners.

As seen through The Four Seasons

Sibrand Poppema and Industry Relations

Iris Vis

While I was preparing to write this contribution, the composer Antonio Vivaldi and his masterpiece Le Quattro Stagioni (The Four Seasons) spontaneously came to my mind. Sibrand Poppema and Antonio Vivaldi each, in completely different centuries, took up a new position at approximately the same age.
Rankings of The Four Seasons  Antonio Vivaldi, a violin virtuoso himself, published his violin concerto, The Four Seasons, Opus 8, Concertos No. 1-4, in Amsterdam in 1725. If Antonio was still alive, I expect he would ‘have been proud to be among the global elite with a classification in the top 100’ of the most recorded classical music pieces since the introduction of vinyl and CDs. In the Netherlands De vier jaargetijden annually ranks in the top 10 classical music pieces ever composed. Approximately 1000 different recorded versions of The Four Seasons, performed by various soloists, have been made since the first recorded version in 1942. Each performer has their own interpretation of the piece. When Nigel Kennedy recorded The Four Seasons in 1989, it entered the Guinness Book of Records as the best-selling classical recording ever.

The Four Seasons and Healthy Ageing research  In recent years, the University of Groningen (UG) introduced Healthy Ageing, Energy and Sustainable Society as its three key research themes. In the field of energy research, the UG focuses on innovation in the generation, distribution and use of energy. ‘Healthy Ageing’ is defined as innovative studies in prevention, care and treatment, while researchers at the UG working in the area of Sustainable Society focus on creating and maintaining such a society.

The Four Seasons is not only to be enjoyed in concert halls or at home but also used in academic research in the field of Healthy Ageing, although unfortunately not by scholars from the UG. While browsing through research databases, two publications in the area of healthy ageing stood out. The outcomes of these research projects showed that participants with Alzheimer’s disease who listened to movements from The Four Seasons experience considerably improved autobiographical memory recall compared to being in a silent environment and also experience a positive effect on fluency in naming words belonging to the same category. So, more than 250 years after his time, Antonio Vivaldi is, in a way, pursuing the same goals as the UG.

Let’s have a closer look at the work of Antonio and Sibrand. Let’s start with some background information on The Four Seasons: it consists of four parts, each representing a season; each part in turn consists of three movements, fast, slow and fast; and a sonnet was written for each season, most likely by Antonio himself.

Spring  Below we quote some lines from the sonnet related to the Spring concerto (translation as printed in1).

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Spring has returned and festively  
Is greeted by the birds in happy song

In 2008, Sibrand Poppema was greeted as the new President of the Board of the University of Groningen in a happy song. At that time, the strategic plan for 2003–2010 was being implemented by the Board of the University. In that plan, it was mentioned that a shift needed to be made towards acquiring more second and third-stream research funding, given the decrease in first-stream sources. Cooperation between research groups, as well as with governments and companies, was deemed to be important in this regard.

On page 15 of the same plan, it was mentioned that research resulting from interaction between the University and companies (and other third parties) was important for the University and society for several reasons.

Science is connected to real-life questions, and researchers can fulful social responsibility in this respect. The resulting connections between society and the University provide a good guarantee that the necessary scientific distance does not lead to irrelevance of the results to the real world. In addition, impulses for more in-depth and even fundamental research often result from practical questions formulated by companies and government. The University will stimulate researchers to use their knowledge in projects with third parties.

The plan also mentioned that Zernikepark would grow into a knowledge park offering space for the University, the Hanze University of Applied Science and starting companies, enabling the
University to demonstrate its openness to society, other educational institutes and companies.

The annual report for 2008 also mentioned that the UG and the UMCG would initiate joint policy and services on valorization. In that year, Energy Delta Research Centre and the Target project were started, with the third-stream income for the University of Groningen totalling EUR 105.3 million in 2008 and EUR 118.2 million in 2009. In 2009, large grants were obtained by researchers at the UG in the fields of Energy (Edgar), Healthy Ageing (Lifelines, ERIBA) and IT (Target). In these projects, UG researchers worked in collaboration with researchers from other universities, large and small companies abroad and in the region, and with local and national governments and the EU. These results demonstrate a research environment at the UG in which researchers are stimulated to participate in research projects with other researchers and other parties, as was aimed for in the strategic plan. Spring spirit was around.

**Summer** Below, we quote some lines from the sonnet related to the Summer concerto (translation as printed in ).

*We hear the cuckoo’s voice; then sweet songs of the turtledove and finch are heard. Soft breezes stir the air, but threatening*

Sweet songs were heard in the amount of third-stream income obtained, amounting to EUR 134 million, EUR 145.4 million, EUR 167.6 million and EUR 175.8 million respectively in the years 2010-2014. This demonstrates that the UG successfully managed to increase third-stream research funding as intended by the strategic plan of 2003-2010.

In 2010, BioBrug was initiated as a public-private project in which companies, the local and regional governments and the UG participated to address questions raised by SMEs in relation to biobased materials and processes. Many students and researchers at the UG have and currently still participate in research projects of BioBrug. One nice example of the well-established ecosystem in which the UG participates: in November 2011, the UG and the Hanze Hogeschool gave the signal to start The Energy Academy, an institute of education, research and innovation on the theme of energy. Sibrand made a great contribution to this initiative. This institute will work in close cooperation with national and international industry.

In 2011, the top sector policy was introduced by the Dutch government; a policy that can be seen as generating a new wind determining the way some academic research will be funded. Nine top sectors were introduced, followed at a later stage by a declaration of a cross-sector ambition on IT. The nine top sectors are: Agro Food; Creative Industry; Energy; High Tech Systems and Materials; Logistics, Life Science and Health; Water and Maritime; Horticulture; and Chemistry. Representatives for each top sector were appointed at the University of Groningen. Sibrand Poppema chaired regular meetings of this group to discuss experiences, potential calls and challenges. I remember them being inspiring, motivating, productive and positive meetings. Researchers at the UG were successful in obtaining funding for these top sectors. The annual report of 2016 mentions that in the top sectors of Logistics, Life Sciences and Health, Chemistry, Agro Food and Creative Industry in particular, researchers from the UG were successful in acquiring research funding. Moreover, in these projects, both fundamental research and valorization activities are typically performed.

Activities in the area of valorization and entrepreneurship are important to translate knowledge into new products and services. In 2012, the University decided to create a new group to support valorization activities: Research and Valorisation. In 2017, this was followed by the start of Northern Knowledge, under which the UG, the UMCG and the Hanze Hogeschool cooperate in activities regarding valorization and entrepreneurship in the north of the Netherlands. In 2013, a dean of entrepreneurship, Prof. Aard Groen, was appointed. It was a sunny time laying strong foundations for external relations.

**Autumn** Below, we quote some lines from the sonnet related to the Autumn concerto (translation as printed in ).
Peasants celebrate with dance and song.  
The joys of a successful harvest

The statistics for the University in the years 2010-2014 clearly illustrate a successful harvest. Second and third-stream income increased, new projects were funded by the NWO, top sector and EU funding began to role in and new cooperative programmes started. Some examples include Sprint@Work and the Zernike Advanced Processing unit, a unique testing environment for bio-based experiments. In 2013, the Ubo Emmius Foundation started as a result of a unique crowdfunding project. Via www.rugsteunt.nl, funds for studies of the Dead Sea Scrolls were obtained. More crowdfunding projects followed later.

A new strategic plan was launched for the period 2015-2020. Of the six ambitions, here I consider two highly relevant in the context of the contribution by Sibrand to industry relations. Namely, 2 and 4:

(2) We will help our researchers work on new, high-risk ideas by fostering an innovative and entrepreneurial attitude. Fundamental disciplinary and cross-disciplinary research with strong international partners, combined with innovative interaction with society will be central to the research-driven education that we provide.

(4) Putting knowledge to use is a key responsibility of the University. The dissemination of knowledge and converting this knowledge into sustainable economic and societal processes, services and business activities will be a cornerstone of University strategy16.

The quadruple helix (knowledge institutes, companies/non-profit organizations, governmental organizations and citizens) supports cooperation at an early stage to perform mission-driven research, as well as in the final stage, where knowledge is converted into products/services. The strategic plan for 2015–202015 mentions that cross-disciplinary research at the UG will help to deepen knowledge of the world, putting this knowledge to work and addressing societal challenges. EnergySense, initiated in 2015, is a clear example of cooperation in the quadruple helix: in this project, 10,000 households are providing data on energy usage, which researchers and designers can use to create new knowledge and applications17.

As mentioned above, the aim was to create a Zernike Campus that is well-known as a knowledge hub. Campus Groningen was initiated to manage both the Zernike and Healthy Ageing campuses. In the more recent period, increasing numbers of companies have been looking for opportunities to increase cooperation with the UG by settling on the campus. This will further expand the breeding ground for talent and idea development and the ecosystem for high-quality research. Clear examples of these dynamics can be seen at a company such as Syncom, which has opened its facilities to students, entrepreneurs and researchers. In 2015, Innolab Chemistry was initiated at the Zernike Campus and functions as an incubator to develop further knowledge from the UG and the UMCG. All of this is making an important contribution to the Autumn harvest.

Winter   Below, we quote some lines from the sonnet related to the Winter concerto (translation as printed in 1).

Before the fire to pass peaceful,  
Contented days while the rain outside pours down.

Up to the end of his term, Sibrand worked with his enormous drive to attain the best for our University now and into the future. For example, Sibrand extensively discussed the intensive research collaboration between the UG and AVEBE, a starch manufacturer. In September 2016, a declaration of intent was signed, which mentioned that the R&D department of AVEBE would move to the Zernike Campus in 2018 to work in close vicinity to the Faculty of Science and Engineering and the Faculty of Economics and Business. At present, the AVEBE facility is being constructed and is expected to be completed later in 201818. Recently, Demcon also settled close to the University of Groningen to intensify cooperation in research and education with the Groningen Engineering Centre, among other stakeholders.
In 2016, the Board of the University established the position of Dean of Industry Relations to explore and maintain contacts with industry by connecting relevant stakeholders. Industry should be understood in the broad sense, referring to companies, non-profit organizations, governmental organizations and citizens; in other words, intensifying cooperation in the quadruple helix in relation to research, education, talent development and societal impact. An important step in establishing any cooperation is that the partners – each relying on their own core qualities and core values – formulate a common goal to tackle societal challenges. Based on this goal, a sustainable programme of cooperation can be formulated. Examples include knowledge-sharing, fundamental question-driven research, the translation of knowledge into a product or service, internal training programmes, internships for students, and creating new network organizations. Contented days in Winter.

Return to Spring  The four seasons of Sibrand as the President of the Board of the UG have now come to an end. After every Spring, a Summer follows. After every Summer, an Autumn, and after every Autumn, a Winter. Then one cycle is complete. But every Winter is followed by a new Spring. Sibrand’s ideas and contribution have placed the University of Groningen in a healthy position for the next cycle of seasons.

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Although his place of birth and present residence are in another province altogether, for many observers – including the author of this piece – Sibrand Poppema is, and will always be connected to Groningen, more precisely to its historic university. The UEF – which I have the honour to chair – was established by the University of Groningen with the specific objective of focusing on collecting funds to support important University research.

Ubbo Emmius Foundation

The foundation is named after Ubbo Emmius (1547-1625), who played a seminal role in the establishment of the University of Groningen. Following the defeat of the Spanish by the armies of Prince Maurits of Orange in 1594, the provincial government of Groningen wisely recognized the importance of education. In 1612, the decision was therefore taken to establish a university, following the example of Leiden, where the first Dutch university had been founded some decades before. Ubbo Emmius was entrusted with the task of establishing the University in Groningen, which opened its doors in 1614, and he went on to become the institution’s first rector magnificus. Ubbo Emmius’ contributions are remembered in various ways. Alongside a University Foundation...
named in his honour, his gravestone is to be found in the main Academy Building. Visitors to Groningen can hardly avoid his name, as there is both a Ubbo Emmius Singel as well as a Ubbo Emmius Straat.

Moreover, several schools in the region also bear his name. Speaking of the latter: undoubtedly with the benefit of foresight, and aware of the academic future that lay ahead, as a secondary school student in Stadskanaal, Sibrand Poppema decided to enrol in a school with an appropriate name: the Ubbo Emmius Lyceum. It was the right choice, and Sibrand embarked upon an impressive academic career, which went from strength to strength, with Groningen as its cornerstone.

Although a strong believer in the motto ‘Er gaat niets boven Groningen’, this did not limit Sibrand’s perspective on opportunities to be grasped in other parts of the world. His outward-looking perspective is exemplified by his time in Canada and at Harvard University. This will only have strengthened his resolve to further help build the reputation of the University of Groningen. Indeed, he has put great emphasis on improving the University’s position in the leading academic rankings. The recent Nobel Prize awarded to Ben Feringa was obviously a unique milestone. In general, the results have been impressive. Under Sibrand’s leadership we have witnessed the rise of the University of Groningen in the authoritative Shanghai ranking from 112th to 59th (2017). A keen Groningen watcher rightly noted: ‘Watch out Harvard, we’re catching up!’

Sibrand has given his time to UEF with the same drive and energy. His support in this respect has been crucial. Tienke Koning and Gerbrand Visser, the two successive UEF directors with whom I had, and still have, the pleasure to work with, assured me that they could always count on Sibrand. If they needed Sibrand to attend an important UEF alumni chapter somewhere in Asia at short notice, he would do his utmost to be there in spite of an already more than fully booked agenda; in one word: remarkable. Sibrand’s commitment is therefore undoubtable one of the reasons behind the success of the UEF chapters being established across the globe in recent years. The chapters provide a fantastic opportunity for Groningen alumni to reconnect with the University and old friends, as well as make new ones.

Sibrand is a great believer in the concept of ‘friendraising’, which precedes the fundraising aspect, which for its part will enable support for future University research. Why is that so important? UEF does whatever it can to assist, and to help fund research which the University has indicated to be of great importance in its Strategic Plan. The three key research areas identified are Healthy Ageing, Energy and Sustainable Society. Being a former alumnus myself, I could not be more proud that the University has chosen to focus on these themes, which address and help solve major societal challenges, thereby bridging the gap between science and society.

**Sustainable Development Goals** I am convinced that the international outlook of the University of Groningen has played a major part in making this choice. And the right choice it is, being a perfect fit with the global agenda until 2030, which was set in 2015 through the adoption of the United Nations Sustainable Development Goals (SDGs). Challenges ranging from planetary boundaries to poverty and inequality, exacerbated by demographics, are all crying out to be tackled. We clearly need to do things differently. In the context of this Liber Amicorum for a highly praised academic, what could be more appropriate than quoting fellow academic, Albert Einstein, who allegedly defined insanity as follows:

*’Doing the same thing over and over again, and still expecting different results’*

An academic disclaimer should be made, as to this day the debate continues whether the quote can actually be attributed to the great man himself. That, however, is not the point in this context: regardless of its origin, the quote brilliantly makes the point that we need to change if we are to fix the shortcomings of our current global system, and we need to do so fast. Perhaps the most important SDG is Goal 17, which calls for partnership. We need to work together. No actor, be it government, business or academia, can do it alone; only by combining forces will we be able to achieve the transformational change so urgently required. As to the role of government, the good news is that no less than five members of the current Dutch
Government were educated in Groningen. They received a great education, and Groningen will be proud of them if they show leadership and put the SDGs at the centre of all their respective activities. With regard to the role of business, I can say this: through the Unilever Sustainable Living Plan, my company is trying to play its part in addressing economic, ecological and societal issues, and we are trying to get other businesses on board to follow suit.

Our mission is greatly helped by the fact that there certainly is no business case for enduring poverty or climate change, whereas there clearly is one for addressing these issues. Research by the Business and Sustainable Development Commission (BSDC) has shown that the SDGs present an economic opportunity of a lifetime, as they have the potential to unlock no less than USD 12 trillion by 2030. And, of course, academia also has a pivotal role to play in the process.

By focusing on the three research themes mentioned above, under Sibrand’s leadership the University of Groningen ensured that it is contributing to society; and the UEF, at least in my humble opinion, is thus funding exactly the right kind of research: a choice which has already proven highly appealing to both current and potential UEF donors. Moreover, this research focus and Sibrand’s personal commitment has also energized former alumni, many of whom are now leaders in their respective fields, to become active on the UEF Board, and join in to help their alma mater.

Sibrand’s apparent limitless amount of energy, fuelling a corresponding level of ambition. Indeed, he shows no signs of wavering; on the contrary, one could be mistaken and think Sibrand is actually on the verge of starting his job, instead of being in the process of exiting from it. This impression is only reinforced by the recent removal of his beard, which makes him look even younger than before.

I sometimes regret that the most inspirational people I have met over the years are not always the ones who receive the praise they deserve, and I am thinking here of educators and nurses. Where would we be without these noblest of professions, where nurturing others is at the core of activities? The legacy of nurturers is never about themselves, but always about shaping better lives for other people. At the same time, they don’t seem to mind, as it is a true purpose that drives them. Perhaps talking about the noblest of passions, instead of professions would be a more suitable way of describing such people. Leaving semantics aside, Sibrand clearly falls into this category of nurturers. Based on the sheer number of contributors to this Liber Amicorum, I am glad to observe that, unlike many of his fellow nurturers, Sibrand’s contributions to society are widely recognized, and will be rightly remembered by future generations.

Returning to the question posed in the title of this contribution, I think it is more than fair to conclude that for Sibrand Poppema the root of all appeals is the call to contribute to society through state-of-the-art research which addresses the world’s greatest challenges. The money part is merely a means to that particular end.

Speaking on behalf of all the members of the UEF Board, I would finally like to express my sincere gratitude to Sibrand for all he has done over the years for the University of Groningen, and for UEF in particular. I am sure Ubbo Emmius would be very proud of you.

Paul Polman is CEO of Unilever and Chair of the Ubbo Emmius Foundation (UEF).
Groningen and the creation of the Guild

Jan Palmowski

How did Groningen acquire such distinctive influence in a network of universities that relies on collaboration and mutual respect? The answer to this question goes to the heart of what makes university networks such as the Guild succeed, and it’s worth looking at how Sibrand Poppema addressed this for Groningen.

When Groningen was approached by a number of universities to help set up a new university network in Brussels, Sibrand did not hesitate. His efforts ensured that Groningen became a founding member of the Guild of European Research-Intensive Universities when it was created in 2016. He put his ideas and energy into its early discussions and decisions, so that Groningen came to play a key influential role within the network.

A sense of vision The first meeting of university presidents on 1 June 2016 was characterized by extremely concentrated and productive discussions. Everyone in the room realized that the Guild should have high public visibility and develop original policy positions immediately. All this needed to be achieved while it was setting itself up physically in Brussels. In short: the Guild had to run while learning to walk.

Presidents like Sibrand enabled this to happen. At the founding meeting, Sibrand displayed a trait I have truly come to admire: a
sense of vision, as well as the commitment to see it through. Thus, he immediately committed Groningen’s knowledge and expertise in EU research and innovation to the Guild, and its formidable Brussels lobbying experience. Crucially, this input also came with collegiality; a willingness to share knowledge with new partners. This was instrumental in informing our policy work at a time when we had to start from scratch. And it was instrumental in ensuring that Groningen’s policy positions became critical in how the Guild as a collaborative network developed its outlook on EU research and innovation.

Sibrand became an extremely influential president at the Guild because of the ease with which he developed relationships, the knowledge he had about other countries and other cultures, and his ideas. For example, from the beginning, he recognized the importance of the Guild being an inclusive network linking some of the best universities in both more and less developed regions. He was thus an active proponent of seeking the right partners, wherever they were located in Europe.

**Missions** It was this capacity to link the collective good with strategic self-interest that Sibrand excels at. In autumn 2017, it became clear that the European Commission was serious about creating research ‘missions’ as one of the key innovations for the next Framework Programmes. Our presidents decided that the Guild should engage with this concept, with concentration and speed, and that they should steer this process personally. Sibrand promptly volunteered to participate in a taskforce comprising five presidents who would evaluate mission proposals from members, to decide which ones we would submit to the Commission, and the feedback we would provide.

Of the 40 mission proposals evaluated by the panel, it chose five. Of these, two were prepared for the final submission by the University of Groningen: on Anti-Microbial Resistance and Sustainable Cities. In volunteering Groningen’s coordination, he secured Groningen’s leadership while making sure these mission proposals met the highest standards.

Perhaps the best way to visualize this capacity to align the interests of the Guild with those of Groningen is captured in the photograph taken at the Estonian Presidency’s conference on research and innovation in October 2017. Guild rectors showed up in full force for this conference, and used the opportunity to network with EU and national stakeholders; we caught Sibrand in the act, in full discussion with the Director-General, Robert-Jan Smits – a man difficult to get hold of at the best of times.

With Sibrand’s retirement, the Guild’s General Assembly loses a president with vision, with real insight and with commitment. I personally found his passion inspiring – his enthusiasm for research and innovation, for students, for internationalization, and – always first and foremost – the University of Groningen. Sibrand was a welcoming president who could always be trusted to give sound advice, and to make time when need be. The Guild would be a different network without his early enthusiasm, vision and encouragement. But, while Sibrand led the University of Groningen, it is clear that it is the institution that shaped him, not just as its president, but throughout his career. And so I look forward to continuing the excellent relationship with Groningen colleagues and to benefiting from their rich expertise, even when he is no longer there to guide it.

Jan Palmowski is Secretary General of the Guild of European Research-Intensive Universities.
A relatively large area of land in the Northern Netherlands region is occupied by agricultural crops from spring until early autumn, impressive in its impact on the landscape, giving it a green and yellow cover throughout the summer, especially in the provinces of Groningen and Drenthe. The dairy industry is most strongly represented by big dairy farms, with cows especially found in the province of Friesland. Following seasonal growth and harvesting of the plant material, the bulk biomass is transported to factories. In contrast, cow’s milk is produced on a daily basis, and requires more frequent transportation to the dairy factories. Originally, there were many of these factories (located in virtually every town and village), acting as strong drivers of the economy in our northern provinces. These companies have always been, and remain, relatively large employers of personnel, with all levels of education.

In recent years, industrial activities have intensified enormously with only a limited number of these factories remaining, usually centrally located in the production areas. Well-known examples of these companies established in the Northern Netherlands (CCC founding
fathers) are AVEBE (potato starch and protein manufacturing), with factories (and R&D) in Foxhol, Gasselternijveen, Ter Apelkanaal, Veendam), HZPC (potato breeding) in Joure and Metslawier, Suikerunie/Cosun (sugar beet processing), with one central factory in Vierverlaten (Hoogkerk) and FrieslandCampina (dairy industry, milk sugar or lactose) in Bedum, Beilen and Leeuwarden, as well as other locations. At these factories, the potatoes and beets are crushed and fractionated, and valuable components are extracted and purified (e.g. carbohydrates and proteins). The cow’s milk is used for the production of a variety of dairy products (see below).

The above-mentioned northern industries are relatively big international players and unavoidably are now facing the global challenges of establishing sustainable economies and contributing to sustainable societies. As a first step, they are developing into high-tech industries, with at least partial automatization of processes, and more extensive use of IT. In further steps, these companies will need to prepare themselves for the rapidly approaching age of industrial biotechnology and industrial engineering, and a bioprocessing industry that makes intensive use of artificial intelligence and robotics. Emphasis will be on the establishment of a production and manufacturing industry from sustainable agricultural resources. Applications will increasingly need to be based on secure and resilient food systems. Also, the possible use of valuable components in their bulk (plant, dairy) materials for the biobased economy of the near future requires greater attention. Emphasis here is on the generation of bioenergy, and on the production of valuable polymers (e.g. starch- or sucrose-derived), and on biomaterials, bioplastics and biochemicals. Ideally, this will result in an ever stronger and more fruitful link between these Agri & Food industries and the Chemical industries that are well-represented in the Delfzijl and Emmen areas.

Carbohydrate initiative  Sibrand Poppema realized that the above situation provided opportunities for the University of Groningen to interact and collaborate in research and education with these companies, with a potential for clear societal impact. Of the various initiatives established for this purpose, the Carbohydrate Competence Center (CCC) approaches are outlined and highlighted below.

Established in 2006, CCC is a public-private partnership involving 20 companies and various knowledge institutes in the Netherlands. CCC is managed as a project organization by the University of Groningen, in close collaboration with Wageningen University & Research (WUR). As outlined above, CCC arose in response to the urgent need for innovation that was experienced by the various carbohydrate producing companies in the Northern Netherlands. Traditionally, their products are used for paper, textiles, building materials and adhesives (functional starches produced by AVEBE), crystal sugar (Suikerunie) and a large diversity of milk products (cheese, yoghurt, butter) (FrieslandCampina).

More recently, their focus has shifted towards new applications, starches in food and feed (AVEBE), conversion of sugar into new products such as rare sugars, polysaccharides, prebiotic oligosaccharides (Suikerunie, after the termination of the EU sugar quota) and use of milk whey lactose for the enzymatic production of galacto-oligosaccharides and biotechnological synthesis of Human Milk Oligosaccharides, both for infant nutrition needs (FrieslandCampina). Scientific knowledge and functional insights about these new applications and products is of great relevance to their market position and chance of success. CCC research programmes are contributing strongly in this respect, increasingly providing fundamental insights into product synthesis and their functionality.

Around 2006, the Microbial Physiology (Prof. Lubbert Dijkhuizen) and Biophysical Chemistry (Prof. Bauke Dijkstra) groups at the University of Groningen were collaborating with NIKO-TNO (Nederlands Instituut Koolhydraten Onderzoek) in Groningen, in the Carbohydrate Bioengineering Center (CBC). At that time, TNO decided to close down NIKO-TNO and to continue the research activities at their food and nutrition centre in Zeist. This prompted an intensive series of consultations by NOM director Ed van de Beek with the above-mentioned companies, the Board of the University of Groningen and AVEBE, FrieslandCampina, HZPC and Suikerunie directors. Their general conclusion was that at that moment in time it was crucial for industrial innovation in the north to maintain a Groningen centre for
carbohydrate research. The subsequent establishment of CCC took two more years, due to the need to overcome all potential hurdles, mostly around rules and regulations governing public-private partnerships.

Sibrand Poppema was UMCG dean at the time and acted as an avid advocate for such a carbohydrate initiative. At the UMCG, he pointed out that carbohydrates are of major importance in food and nutrition, fitting well with the Lifelines programme. At a later stage, as President of the Board of the University of Groningen, Sibrand Poppema also initiated consultations between the universities in Groningen and Wageningen, resulting in the merging of both their carbohydrate research centres and activities. The first CCC research programmes started in 2009 and these were financially supported by Samenwerkingsverband Noord Nederland SNN, the three northern provinces of Groningen, Friesland and Drenthe, the City of Groningen, and a series of companies. The first two CCC programmes amounted to a total financial investment of EUR 27 million by all partners involved. Directed by Prof. Fons Voragen (WUR), Siert Bruins and Geert Jan Arends (UG), and at a later stage Nico Arfman, a total of 29 research projects were initiated and carried out at the UG, UMCG, WUR, TNO, the Hanze University of Applied Sciences and Van Hall Larenstein. Research in these programmes focused on both of the CCC’s main themes, Carbohydrates in Health and Nutrition, and Carbohydrates in the Biobased Economy.

Subsequent CCC research programmes have been funded in close collaboration with the Dutch Topsector Agri & Food (CarboHealth), and/or are supported by NWO Life Sciences (CarboKinetics and CarboBiotics), now ENW. These three CCC programmes focus on Carbohydrates in Health and Nutrition. The NWO programmes that are currently running involve a total of 22 PhD students and postdocs. They are employed at the UG, UMCG, WUR, the University of Utrecht and Maastricht University as knowledge partners. Finally, the Province of Groningen and SNN, various companies and the UG recently decided to financially support the latest CCC CarboBased programme, focusing on Carbohydrates in the Biobased Economy, with a total of nine positions for PhD students at the University of Groningen. Within CCC, the financial contribution of the industrial partners to the programmes currently running and in which they participate is substantial, namely around 50% of total costs in cash.

The initiatives for and directions of the CCC programmes in the first 10 years were established in close discussions with the CCC Supervisory Board, chaired by Prof. Rudy Rabbinge (WUR), also with important roles for and contributions from Sibrand Poppema on behalf of the UG, Prof. Raoul Bino (WUR, director Agrotechnology and Food Sciences Group), and two representatives of CCC industrial members (at present Marco van den Berg, DSM and Reggy van der Wielen, FrieslandCampina).
Societal impact Over the years, researchers in CCC programmes have successfully generated fundamental and innovative knowledge with strong commercial interest for participating member industries; also evident from a range of patent applications and the development of new processes. Most importantly, CCC activities have also resulted in the stimulation of employment at member companies and the knowledge institutes involved. Following the filing of patent applications, the university groups involved published numerous research papers in high-ranking international journals. This has also resulted in high-quality PhD theses and successful PhD defences. For detailed reports of the completed CCC programmes, see the CCC website at: www.cccresearch.nl.

In view of the scientific, economic and societal impact of CCC research, the Executive Board of the UG, headed by Sibrand Poppema, decided to fund Agri & Food initiatives with an additional EUR 4.3 million. This funding provides additional support for the CCC management team (UG members, Lubbert Dijkhuizen, Wim Huizinga, Janneke Krooneman, Gert-Jan Euverink), and allowed the appointment of new members of staff and postdocs in research institutes in the Faculty of Science and Engineering (FSE), Engineering and Technology Institute Groningen (ENTEG), Groningen Biomolecular Sciences and Biotechnology Institute (GBB) and the Zernike Institute for Advanced Materials (ZIAM). In addition, FSE has initiated a new MSc curriculum in the Biology of Food and Nutrition, to further stimulate UG education in Agri & Food related fields.

The UG currently focuses on Energy, Healthy Ageing and Sustainable Society as societally relevant research themes. Sibrand Poppema (with the support of the Board of the UG) also frequently mentions Agri & Food as an important UG research theme. And Sibrand Poppema has travelled around the world spreading positive news about the successes of CCC at the Chinese Agricultural University in Beijing, the National University of Singapore and the University of Alberta in Edmonton. Wherever he goes, he always sees opportunities to promote the strengths of CCC research and the organization, and envisions possibilities for cooperation. In the future, this may result in CCC taking initiatives to engage in international research collaborations as well.

In conclusion, thanks to the contribution of Sibrand Poppema, CCC is heading towards a bright future as a public-private partnership at the UG. We thank Sibrand Poppema for his strong support of the CCC organization, its management team and activities. We are very grateful for his annual presence at the CCC Open Day meetings and his positive and proud statements about CCC achievements in the field of Agri & Food.

Lubbert Dijkhuizen is Professor of Microbiology at the UG and CSO of Carb Explore Research BV.

Lubbert Dijkhuizen and Sibrand Poppema at the CCC Annual Open Day
The Dead Sea Scrolls, the Dutch Cave, and the Qumran Institute

Raiders of the Lost Scrolls

Mladen Popović

It is a great pleasure and honour to contribute to the Liber Amicorum for Sibrand Poppema. Since 2008, Sibrand has been instrumental in the development of the Qumran Institute in general and the academic and societal activities related to the Dead Sea Scrolls in particular. In this contribution I will highlight some of these developments and activities.

The contribution will focus on: 1. Fundraising activities with the University’s Ubbo Emmius Fonds, 2. the Dead Sea Scrolls exhibition at the Drents Museum, Assen, in 2013/2014, and 3. collaboration with the Israel Antiquities Authority in the ERC project, ‘The Hands that Wrote the Bible’. Sibrand’s involvement in these activities illustrates his support for all kinds of research at the University of Groningen, right across the board, from the sciences and the life sciences to even something as seemingly arcane as the Dead Sea Scrolls in the Humanities. However, before I turn to these three things, first a few words to explain what the Dead Sea Scrolls are, why they are so important, and how the Qumran Institute of the University of Groningen fits into all this.

The Qumran Institute at the University of Groningen was founded in 1961 by Adam van der Woude. The foundation of the Qumran Institute coincided with the first agreement in the same year between the Royal Netherlands Academy of Arts and Sciences (KNAW) and
the Palestine Archaeological Museum (PAM) in East Jerusalem. The agreement, which was approved by the Jordanian government, arranged for the publication rights of most of the Dead Sea Scrolls materials that were found in one particular cave – Cave 11. These two events put the Netherlands and the University of Groningen, in particular, on the map as a leading centre for the study of the Dead Sea Scrolls.

**Dead Sea Scrolls: discovery and impact**  The Dead Sea Scrolls are ancient Jewish manuscripts dating from the third century BCE to the second century CE. They come from eleven caves near the site of Qumran on the northwestern shore of the Dead Sea and from other Judaean Desert sites such as Masada. The scrolls comprise the oldest manuscripts of the Hebrew Bible (Old Testament) and many hitherto unknown ancient Jewish texts.

The modern story of the initial discovery, the ensuing race between the Bedouin and archaeologists to find more caves and manuscripts, and the first generation of scholars working on reconstructing and understanding the manuscripts reads like a combination of Dan Brown’s *Da Vinci Code* and *Indiana Jones and the Raiders of the Lost Ark*, or the *Last Crusade* for that matter. The important difference is that the Dead Sea Scrolls are real.

Their discovery between the 1940s-1960s has fundamentally transformed our knowledge of Jewish and Christian origins. The importance of the scrolls can hardly be overstated. The manuscripts provide a unique vantage point for studying the dynamic and creative engagement with authoritative scriptures that were to become the Bible, not only because they are the oldest known biblical manuscripts, but also because of the presence of a large number of ‘non-biblical’ texts in the collection, which include commentary texts, poetic hymns, community rules, religious law, wisdom and what are considered retellings or rewritten biblical narratives, but also texts on magic, demons, astrology and calendars. Before the discovery of the scrolls, our oldest, complete manuscript in Hebrew of the Old Testament was from around 1000 CE. The scrolls allow us to jump back 2,000 years or more in time and observe what people wrote, copied, collected, read and studied. The caves in the Judaean Desert where the scrolls were found are like a time machine.

The Dead Sea Scrolls enable us to trace important moments in the development of those texts that were to become the Bible. The Bible is one of the most influential books in world history and deserving of academic study – whether one is religious or not is beside the point. From an academic point of view, at the Qumran Institute in Groningen at least, processes of textual growth, development and transmission are taken as manifestations of cultural evolution, which is also exciting in light of contemporary claims to the divine or holy status of books such as the Bible, or the Qur’ān for that matter.

**The Dutch Qumran Cave**  Because of the agreement between KNAW and PAM in 1961, substantial funds from the Netherlands were made available by ZWO (now NWO) to acquire the publication rights for material from Qumran Cave 11. Having founded the Qumran Institute in that year, Adam van der Woude became responsible for the Dead Sea Scrolls material from Qumran Cave 11. Initially, this responsibility was shared with Johannes van der Ploeg (Radboud University Nijmegen). However, after Van der Ploeg pulled out of the project, all responsibility for publishing the manuscripts from Cave 11 fell to the Qumran Institute in Groningen, where, in addition to Van der Woude, Florentino García Martínez (in 1980) and Eibert Tigchelaar (in the 1990s) joined forces. These three scholars were responsible for the official publication of the material from Cave 11 in the series, *Discoveries in the Judaean Desert*, and Qumran Cave 11 became known in the field as ‘the Dutch Cave’.

The Qumran Institute became a leading centre for the study of ancient Judaism in general and for the Dead Sea Scrolls specifically. Van der Woude launched a new scientific journal for the study of Judaism in the broader context of the ancient world, which became the leading journal in the field. An accompanying peer-reviewed series with the journal followed, as did another peer-reviewed series with a specific focus on the manuscript finds from the Judaean Desert. In the 1980s, Van der Woude and García Martínez formulated the Groningen Hypothesis on the scrolls, and in the 1990s, García
Martínez and Tigchelaar published the Dead Sea Scrolls Study Edition, with Hebrew and Aramaic on one page and an English translation on the opposite. This set the standard in the field and came to be used at universities worldwide.

**Fundraising and exhibition** Having studied in Groningen, I was asked to come back in 2007 as a postdoc with responsibility for the Qumran Institute. Tigchelaar had left in 2006 for the US and, in 2008, García Martínez was to retire. The Dean of the Faculty of Theology and Religious Studies, Ed Noort, and the Director of the Ubbo Emmius Fonds, Tienke Koning, put the Qumran Institute forward as a possible candidate for fundraising efforts. And so, in autumn 2008, I was given the opportunity to present my strategic plan for the Qumran Institute to the executive committee of the Ubbo Emmius Fonds.

As a final point in the strategic plan, and in my presentation at the time, I mentioned the possibility of an exhibition on the Dead Sea Scrolls:

> De Dode Zeerollen spreken enorm tot de verbeelding van het grote publiek. [Het] zou ... uiterst waardevol zijn om voor het Nederlandse publiek te zorgen voor de totstandkoming van een Dode Zeerollenexpositie in Nederland. ... Doel is om over vijf à zes jaar een expositie in den lande te hebben. Niet alleen voor Nederland, maar ook voor Europa zou zo'n expositie een unieke gebeurtenis zijn.

In the meeting, Sibrand invited me to elaborate on my ideas for an exhibition. When the meeting ended, Jan Overmeer came up to me and suggested we talk to the Drents Museum in Assen. The rest is history, as it were, but in reality, it actually took five more years of hard work, in collaboration, to realize the exhibition, which opened in July 2013.

During this time, Sibrand and many others were very supportive, in word and in deed. Alongside the preparations for the exhibition – including negotiations between various national and international parties, legal and financial matters to be taken care of, the conceptualization and realization of the exhibition and other matters – we, that is the Qumran Institute and the Ubbo Emmius Fonds, were pursuing possibilities for private funding. Sibrand supported these efforts. For example, he invited me to one of the board meetings of the Ubbo Emmius Fonds at the Allersmaborg to present my plans, and Sibrand himself also attended the fundraising events we organized numerous times. For us, his active encouragement was an important sign of the University’s support for the Qumran Institute and it made a huge difference to the realization of our academic and societal aims.

In collaboration with the Drents Museum and the Israel Antiquities Authority, we succeeded in creating an exhibition about the Dead Sea Scrolls, which materialized in 2013/2014. The exhibition drew 140,000 visitors. It engaged the audience with the texts, the people behind the texts, and the world in which they lived. I engaged top scholars from around the world to contribute to a book to accompany the exhibition, which presented the state of the art on scrolls research according to the ‘Groningen approach to the scrolls’: contextual and multidisciplinary. The book had two editions.

Some further examples of societal engagement: more than 20 lectures for the general public were given in the museum during the...
exhibition. With the Faculty of Theology and Religious Studies, we initiated a project on the scrolls that reached out to secondary school students, developing a ‘teaching package’ (lespakket) which consisted of a three-course programme on the scrolls and the Jewish Revolt against Rome (geared at VWO classes 5 and 6) that could be used in classes such as Greek and Latin, Religion and History. In two cohorts, over 9,000 pupils from over 150 schools participated.

As to fundraising, in collaboration with the Ubbo Emmius Fonds, we set up a crowdfunding portal for a pilot project on the scrolls and Artificial Intelligence, which raised more funds than we intended. Another fundraising activity that deserves mention includes a spectacular fundraising dinner organized by the Ubbo Emmius Fonds in the Drents Museum, where Sibrand gave a speech that boosted fundraising even more. Because of the success of the exhibition, a number of people expressed enthusiasm for the creation of a Dead Sea Scrolls chapter with the Ubbo Emmius Fonds, following the example of the alumni chapters of the Fonds throughout the Netherlands and abroad. Sibrand was also present at meetings of this chapter to show his support. In combination with another crowdfunding exercise and a film funded by one of our generous benefactors, funds were raised for the realization of a postdoc position.

Another example is the Dirk Smilde fund. With the funds we have received throughout the years, we were able to set up the Dirk Smilde Fellowship and Scholarship schemes. The Dirk Smilde Fellowship is meant to enable top researchers to work at the Qumran Institute for a certain time, ranging from three to six months. The Dirk Smilde Scholarships are for excellent PhD candidates and postdocs in the fields of the Hebrew Bible, ancient Judaism and the Dead Sea Scrolls. Regarding the duration of the scholarship, we offer a range between a minimum of three and a maximum of six months.

One final example is the University-wide strategic initiative by the Board of the University in 2014, where the Faculty of Theology and Religious Studies aimed, among other things, to build on the success of the Qumran Institute and to strengthen the profile of pluralistic religious culture in antiquity as a Faculty focus. The Faculty was successful, enabling us to attract Steve Mason as Professor of Ancient Mediterranean Religions and Cultures. Mason is a leading scholar in the history and literature of the eastern Mediterranean under Roman rule, especially Roman Judaea, the Jewish historian Flavius Josephus, and Christian-Jewish-Roman relations. This complements the integral approach of the Qumran Institute to the study of the scrolls and Judaism in the wider context of the ancient world. All of this contributed to successful applications with the ERC and the NWO/FWO.

‘The Hands that Wrote the Bible’ Having concluded my NWO VENI research, which also played a major role in the Dead Sea Scrolls exhibition, in 2014 I successfully applied for an ERC Starting Grant, and in 2015 for an NWO/FWO Cooperation Flanders Grant, with Eibert Tigchelaar, now at KU Leuven.

My ERC project, ‘The Hands that Wrote the Bible’, combines image processing and machine learning – including artificial neural networks – ancient manuscript studies, and new C14 samples of the Dead Sea Scrolls, in collaboration with the Israel Antiquities Authority. The project investigates two fundamental aspects of the scrolls’ palaeography, ‘when’ and ‘who’: handwriting recognition (the typological development of writing styles), ‘when was a manuscript written’, and writer identification, ‘who wrote a manuscript’. The basis is an assessment of the cross model of palaeography for the scrolls, which will generate new data in the form of manuscript clusters and scribal profiles. The subprojects examine specific manuscript groups or scribes. The combination of new C14 samples of the scrolls and the use of Artificial Intelligence to assess the development of handwriting styles and to identify individual scribes will provide a new and much needed quantitative basis for the typological estimations of traditional palaeography. This quantitative evidence will be used to cluster the manuscripts as products of...
scribal activity with the aim to profile scribal production and to determine a more precise location in time for their activity. It will enable scholars to sharpen their focus – from literary and cultural-historical perspectives – on the content and genres of the texts that scribes wrote and copied, and on the scripts and languages that they used.

In addition to the ERC project, there is an NWO/FWO project called ‘Models of Textual Communities’. The point of departure in this project is the observation that the analyses of the scrolls’ content indicate heterogeneity and religious diversity on different levels within the collection of texts, which have either been attributed to diachronic developments within early Judaism, or have been related to different models of communities behind the manuscripts. The project aims to assess conceptual and theoretical models of textual communities in relation to the diachronic and synchronic data and analyses of the Dead Sea Scrolls within the broader ancient Jewish and Mediterranean contexts. The project looks, for example, into issues such as centralized versus private modes of textual production.

Israel Antiquities Authority Leon Levy Dead Sea Scrolls Laboratory, Jerusalem 2017

At its most basic level, my curiosity concerns the models of communities that best explain the material and literary evidence in the Dead Sea Scrolls manuscripts, which, I emphasize, are archaeological artefacts: they are real. My basic aim is to understand the relationship between these texts and the people producing, writing and copying them, as well as collecting, reading, and studying them. These projects are collaborative and involve many specialists from very diverse fields. This is what makes it fantastic to work at a university, a comprehensive university, such as the University of Groningen.

Here, also, Sibrand has been important in securing the continuity of the ERC project. The project is based on high-resolution multispectral images from the Leon Levy Dead Sea Scrolls Digital Library of the Israel Antiquities Authority (IAA). Furthermore, it is an extraordinary privilege that we received new scroll samples from the IAA to be radiocarbon tested. The scrolls are of world heritage status and their importance for the modern State of Israel cannot be overstated. Thus, it should come as no surprise that enabling our ERC project to receive the images and the C14 samples as agreed, was a delicate process. Sibrand’s leadership and support were decisive in this process, with the successful result that we indeed secured the transfer of images and samples.

Concluding remarks Because of successes in generating additional funding, the number of researchers involved in the Qumran Institute has grown to encompass two full professors (Mason and Popović), two postdocs (Drew Longacre and Jason Zurawski), six PhD candidates (Ayhan Aksu, Eelco Glas, Gemma Hayes, Joabson Pena, Myles Schoonover and Vyacheslav Zilber), another three PhD candidates in collaboration and joint supervision with the University of Ghent (Marijn Vandenberghe), the University of Göttingen (Mirjam Bokhorst) and KU Leuven (Hanneke van der Schoor), one affiliated researcher (Margreet Steiner, an archaeologist), and through the ERC project, ‘The Hands that Wrote the Bible’, two more affiliated full professors at the Faculty of Science and Engineering (Lambert Schomaker in Artificial Intelligence and Hans van der Plicht at the Centre for Isotope Research), one more affiliated PhD candidate in...
the Faculty of Science and Engineering (Maruf Dhali in Artificial Intelligence). Furthermore, the NWO/FWO project, ‘Models of Textual Communities’, adds one more affiliated full professor at KU Leuven (Tigchelaar).

With the help of many supporters, we have been able to initiate and support important elements to create a thriving research environment, such that, since 2008, the Qumran Institute has developed in new ways to become an international platform for the study of the Dead Sea Scrolls and ancient Judaism in the wider context of the ancient world, with the writings of Flavius Josephus as an important reference point. This attracts researchers from all over the world to come and work with us in Groningen, attend our conferences, workshops, and spend extended research visits with us. An important feature of our network is the Groningen-Leuven Dead Sea Scrolls Encounters series, which has convened each year since 2012, sometimes in collaboration with peers at other universities (University of Birmingham, University of Helsinki and University of Göttingen). These Encounters aim to provide a stimulating platform and network basis for our advanced graduate students, PhD candidates and postdocs. As to the future, we have just finalized a collaboration with the University of Oxford and their new Centre for the Study of the Bible in the Humanities. Thus, we will have annual Groningen-Leuven-Oxford Dead Sea Scrolls Encounters.

In 2008, the Qumran Institute consisted of one postdoc. The Qumran Institute was brought to the attention of the Ubbo Emmius Fonds by Ed Noort, taken further by Tienke Koning, and its potential recognized by Sibrand. Sibrand could just as easily have ignored the initiative of one postdoc from one small corner of the Humanities, but he did not. In brief, success has many mothers and fathers, but throughout the last ten years, Sibrand has been one of the staunchest supporters of the Qumran Institute. It is my great pleasure to express here my profound gratitude for Sibrand’s leadership and support.

Mladen Popović is Professor of the Old Testament and Early Judaism at the UG and director of the Qumran Institute.
‘Right. The next patient’s been waiting for over two hours already, and I should warn you doctor: he’s not amused!’

Eduard de Bock leaned back in his chair. ‘Oh nurse, here at A&E we often have people who are not amused.’ He gave the nurse an approving glance and patted the chair next to him. ‘Tell you what, let’s have a quick cuppa before we bring in the old grouch.’

‘I think not, Dr de Bock.’ The nurse gestured to the X-ray photo on the screen. ‘Our patient has clearly had a crashing fall and his neck is very painful. I’ll go and fetch him.’

Eduard de Bock sighed. This delightful creature also seemed aware of his reputation, which continued to dog him. That he now had to start again at A&E as a kind of glorified junior doctor after that bit of bother at the gynaecology department was one thing. But that more or less all the nurses had been warned and were treating him like a leper… well he simply couldn’t bear it.

‘You’ll just have to sit out your time here De Bock. Then you’ll be able to venture once more unto the breach,’ he admonished himself. He stood up and buttoned his doctor’s coat. The door to his room opened and a small grey man in a pitch-black suit stumbled in, supported by the nurse. ‘I’ve also worked at the UMCG, and I must say that this waiting time is unacceptable!’ the man began immediately.

‘You’d broken your neck, you wouldn’t have skipped into the room like that,’ said Eduard. He thought for a moment; hadn’t he met this man somewhere before? He was a bit older than Eduard. Perhaps an older member of his student society?

‘Sit down,’ he said pointing to a chair. ‘I don’t think you’ve told me your name.’

‘Poppema’, said the man, ‘Professor Poppema MD, University of Groningen.’

Aha, thought Eduard. So that was it: not just a member of the fraternity but a colleague too.

‘I was cycling over Broerplein,’ the man continued, ‘when a Chinese student who wasn’t looking where he was going suddenly stepped in front of my bike! The idiot!’

‘Don’t I know you from the club bar?’ Eduard asked while he studied the X-ray photo on the screen. ‘Which year were you in? And didn’t you used to have a goatee?’

‘I would appreciate it if you weren’t so familiar with me,’ the man retorted. Eduard raised his hands apologetically. ‘Ok, ok, whatever you want, Poppinga. Let’s take a look.’

‘Poppema!’ The man shouted it out so viciously that he immediately reached for his neck, a pained expression on his face.

‘Damn!’ muttered Eduard. Now he remembered: this gentleman had had something to do with his suspension from the department of gynaecology at the time, as a member of a board or something like that, way before all that #metoo hysteria. He also had a vague memory of an altercation with the chap in the club bar, years ago… Something to do with a fight, a ripped jacket, one pulling the other’s tie? He turned to face the man.

‘Right, Fokkema, Poppinga, whatever, you’re lucky. It’s no way near as bad as it seems! No broken bones, just a bit of bruising. Wear a neck brace today and put a hot water bottle on it tonight. Take two aspirin and go to bed. You’ll be as fit as a fiddle tomorrow.’
Petra Stienen (second from the right) Aletta Jacobs Prize Laureate 2016

King Carl Gustaf and Queen Silvia of Sweden (centre) visiting the UG in 2009, together with Queen Beatrix

Welcoming ceremony for international students in the Martini Church (Sibrand on the pulpit)

Sibrand Poppema being nominated Honorary Consul of the Republic of Korea
Meeting with the University Council

Signing a Memorandum on Cooperation with the Skolkovo Foundation

Meeting with the University Council
Mirjam Pressler being awarded an honorary doctorate in 2004
Colophon

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