

UNIVERSITY OF TWENTE.



UNIVERSITY OF
AWARD-WINNING
ENTREPRENEURS

HEALTH TECHNOLOGY
under one roof

SOLAR TEAM TWENTE
delivers world performance!

UNIVERSITY
OF 40.000 ALUMNI.

SAVE THE DATE
15 APRIL
SEE PAGES 12-13

10

EVIDENCE-BASED EDUCATION

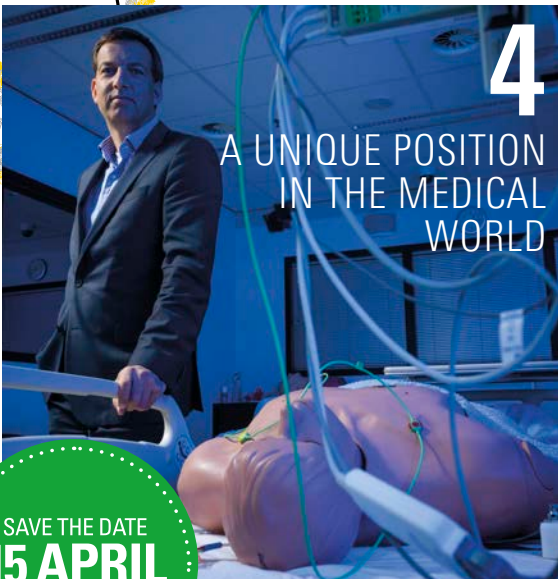


14

EDUCATION

4

A UNIQUE POSITION IN THE MEDICAL WORLD



20

5 YEAR JUBILEE MESA+ NANOLAB LOOKING TOWARDS THE FUTURE



40

STUDENT HOUSE OD308



SAVE THE DATE
15 APRIL
SEE PAGES 12-13

4 DOSSIER

Health under one roof

10 PHD RESEARCH

Evidence-based education

12 ALUMNI DAY APRIL 15 2016

'University of Impact'

14 EDUCATION

Master Cyber Security

16 CURIOUSU

Looking back at the 2015 CuriousU Summer school

18 ENTREPRENEUR

Distimo scores with its analysis of app popularity

22 AMBITION & ACHIEVEMENT

The master's student who became Minister of Education

28 ALUMNI NEWS

32 TO THE TOP

Yet again the most entrepreneurial university

33 WERE YOU THERE?

34 ON CAMPUS

35 THE ACTIVE STUDENT

President of the Student Union

36 WEEK OF INSPIRATION

Foundations of our life

38 RESEARCH

Theo Toonen, the new Dean of Behavioural, Management and Social Sciences (BMS)

42 MY JOB

44 SPIN-OFF



THE ART OF CONNECTING

The National Research Agenda, published earlier this year, is all about the power of imagination, combining strengths and cross-pollination. Whether it will result in any additional resources for research is another matter, but establishing connections is certainly more important today than ever before. Earlier research funding models were linear, with a straight line from fundamental research via applied research to industrial application. We now know that this approach does not work. Nevertheless, there is still a tendency to prioritize applied technology, with fundamental research only possible in the context of the very first applications. Science that is truly useful and relevant goes beyond applied knowledge. There are also many fundamental questions that must be answered. The Manhattan project, for example, which focused on the production of the first atomic bomb, gave the noted physicist Richard Feynman the opportunity to pursue his theoretical work.

The simple interaction between science and industry must be complemented by interaction with government authorities and the public. How can we achieve sustainable impact while maintaining our academic curiosity? It is essential to interconnect disciplines, both within and beyond our university, and this is precisely what is happening within the major research programmes such as Horizon 2020. It may be necessary to organize our own research diffe-

rently, and this is now the subject of ongoing discussion within the university. In any event, we must clearly demonstrate the contribution that we can make. We must show that we are flexible enough to address new and emerging societal themes, and that we have a fully coherent programme. The University of Twente has adopted several strong spearheads of research policy: biotechnology and nanotechnology, health and healthcare technology, ICT and robotics, the social sciences and technology, geosciences, specific expertise in design ICT, engineering and the creation of fully integrated solutions. Our modern era demands creative interdisciplinarity.

As we devote close attention to our research, we must not forget our most important impact factor: our alumni. It is essential that the university's policy devotes as much attention to the quality of education as it does to research, as recently argued by the Advisory Council for Science, Technology and Innovation (AWTI). Our forty thousand highly-educated and highly-qualified alumni represent greater global impact than any research we may undertake. Interaction between research and education, whereby excellent performance in education is duly recognized, will therefore form a key focus of policy in the months and years ahead. ●



PROF. DR. H. (ED) BRINKSMA
(B. 1957) RECTOR MAGNIFICUS OF THE
UNIVERSITY OF TWENTE SINCE 2009.

“INTERCONNECTING DISCIPLINES
WITHIN AND BEYOND THE
UNIVERSITY”



A man in a dark suit and blue striped shirt sits in a black office chair in a hospital room. The room is dimly lit with a blue hue. In the background, there are hospital beds with blue blankets, two monitors mounted on the wall, and various medical equipment. The word "UNDER" is written in large, red, outlined letters across the center of the image.

UNDER

"Technology is just one of
the solutions"

THE UT ENJOYS A UNIQUE POSITION IN THE MEDICAL WORLD

The University of Twente wishes to bring all of its health research and education under one roof to form a single organizational cluster. The intention is to increase visibility and impact, so that the outside world knows exactly what the university has to offer. TEXT Christian Jongeneel PHOTOS Kees Bennema

ONE ROOF

“Our university is extremely active in the field of health and healthcare,” states Prof. Maarten IJzerman, who has recently taken up the appointment of dean of Health and Biomedical Technology. “Growth to date has been a largely organic development within the various faculties and institutes. As the scope and diversity of our activities has increased, the overall UT profile has become somewhat diluted. Hospitals sometimes find themselves dealing with more than one group from the university, even though they regard the topic under discussion as a single issue.”

It is not only the scope of research that has grown. So have the educational activities, particularly

at the convergence of healthcare and technology. Some twenty per cent of students are currently following a programme in biomedical technology, health sciences or technical medicine, and the number is expected to increase in the years ahead.

“There is enormous potential,” IJzerman continues. “By profiling all our medical and healthcare activities collectively, we can achieve further growth in both size and quality. Much of our current research already has an international orientation. We can use this to attract more international students to the master’s programmes. We also wish to form partnerships with international top institutes.”

Themes

“The University of Twente enjoys a unique position in the medical world, but we must make clear choices with regard to our key research themes,” says IJzerman. “Some of these are developed and pursued by the MIRA research institute, but other faculties and institutes are also involved. Examples include bionanotechnology for organs-on-chip, early detection of conditions such as cancer, medical robotics, and rehabilitation technology. We have recently introduced a new research line, GeoHealth. This involves collecting and collating data about health and disease to support the organization of healthcare services. These are all very different disciplines, so the

HEALTH AND THE ENVIRONMENT

It is well known that the physical environment has a significant influence on human health. Environmental disasters, such as Bhopal and Fukushima, affect entire regions and large numbers of people for many years. However, the interaction between environmental factors and health is usually rather more subtle. This interaction is the focus of GeoHealth, a new research line at UT.

“One of our larger ongoing studies is concerned with air quality in Eindhoven,” explains Prof. Alfred Stein of the Faculty of Geo-information Science and Earth Observation (ITC). “We have installed 35 sensors throughout the city, which measure air quality at ten-minute intervals. They provide much useful information, not only about air quality at each location, but about the distribution and circulation of airborne pollutants.”

This study was suggested by local residents, who have remained actively involved throughout. Stein and his group are currently investigating a complaint from one resident who claims that the air in his top-storey apartment is more polluted than that at street level. “This might suggest a certain airflow, which is relevant to our research since we are trying to link data about air quality to health information. Ideally, we could predict adverse health impact, whereupon the authorities can take preventive measures, either in terms of planning regulations or traffic management.”

Because an environment includes so many different factors, identifying those which are relevant to health can be difficult. “A project in Rwanda revealed that a large number of children with growth disorders lived in regions with relatively high food production,” says Stein’s colleague Dr Sherif Amer. “It is therefore unlikely that malnutrition is the main problem. Perhaps the quality of the food is being affected by the soil on which it is



“Patients increasingly want to determine their own treatment”

researchers will not be interacting with each other on a daily basis. We have achieved a degree of cohesion but this must now be safeguarded on a different scale.”

Take organs-on-chip and personalized healthcare, for example. The first is still an experimental research area. The UT has recently strengthened its position by attracting two prominent researchers in (stem) cell biology from Leiden. They have made the move because MIRA offers all the advanced apparatus they need for their work. Stem cell therapy is one of the most promising medical advances of the future, particularly if it can be made more simple by, say, printing out parts of organs using cells taken from the patient him- or herself. This technology is also likely to make the development of pharmaceuticals more efficient.

“Personalized care is another rapidly emerging trend,” states Prof. IJzerman. “In essence, it means that therapy is customized

grown, which has high volcanic ash content. There are also indications that grain and peanuts have been contaminated by aflatoxins, poisonous chemicals that are produced by soil-borne moulds. The research is ongoing.”

Alongside the direct links between environmental factors and health, the discipline considers other factors such as the geographic distribution of diseases and the relationship between location and healthcare services. Should healthcare be organized differently in rural areas than in the cities?

Stein sees many opportunities to strengthen ties with other faculties and departments. “Like some of the medical research groups, we make extensive use of visual analysis techniques. The combination of our research with that into personalized healthcare seems extremely promising. It would provide a better understanding of the physical dynamics of cause and effect.”



according to the needs and preferences of the individual patient. Drugs can be prescribed based on individual characteristics, for example, where those characteristics suggest that they will indeed benefit the patient. We are developing the technology that identifies those characteristics, such as methods to detect free-circulating DNA, which may be an early warning sign of cancer. We are also devoting much time and attention to medical apps and wearable devices, which allow patients to monitor their own health and seek prompt medical advice if necessary.”

Cohesion

Many other combinations of disciplines are possible: surgical techniques and medical logistics, for example. The state-of-the-art facilities of UT’s Experimental Centre for Technical Medicine (ECTM) allow new surgical techniques and instruments to be tested within an extremely realistic virtual environment. Its research is concerned with direct

technical support for medical professionals.

The facilities are also used for training purposes, which demonstrates the close ties between research and practice. “We are currently planning a major expansion of the centre’s facilities,” states IJzerman.

The introduction of new resources changes practice not only in the realm of medical technology itself, but also in the way in which hospitals organize care processes and logistics. “A new imaging technique may supersede one or more existing techniques. It then becomes necessary to examine what must stay and what must go. However, we must remember that technology is only one of the solutions. We must not rely too heavily on technology lest we face unpleasant surprises later on. Another factor is that the relationship between doctor and patient is changing. Patients now expect to have a greater say in their own treatment. They need to

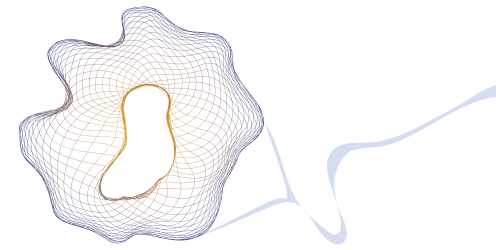
understand the pros and cons of the various options – surgery versus chemotherapy, for example – so that they can make an informed choice.”

The cohesion between the research groups and programmes, many of which fall within different faculties, must now be strengthened by means of shared accommodation. “Student numbers continue to increase, as

“Research is close to practice”

does research funding. It is clear that we need more space. In addition, we must achieve better visibility, both internal and external, to promote cooperation and attract potential partners. In short, the cluster needs more space. We are currently examining the possibility of renovating the vacant Technohal, but we are also looking whether we can achieve our ambitions through modifications to the existing buildings.”

IN BRIEF



NEW VICE-PRESIDENT

Mirjam Bult has been named as the new vice-president of the Executive Board of the University of Twente. She took up the position on 1 November. Ms Bult is a former UT student who gained her doctorate in 2003 for her work examining public-private partnerships. She has extensive experience in both higher education and industry. Anton Schaaf, president of the Supervisory Board, welcomes her appointment. "Mirjam Bult has broad experience in the sector, not only in education and research but also in operational management and administration. Her expertise complements that of the other board members and she will no doubt fill the role of vice-president with much aplomb." Mirjam Bult succeeds Kees van Ast who held the position for ten years.

FILM SUCCESS

Is it possible to gauge the success of a film without having seen it? Apparently so. A computer model developed by the University of Twente provides a reasonable accurate assessment of commercial and artistic success based solely on the past record of the producer, director and writer.



(R)EVOLUTIONARY CHIP

Researchers at UT research institutes MESA+ and CTIT have devised a radically new form of electronic chip. It is based on evolutionary processes similar to those formulated by Darwinian theory. The connections on the chip are as small as their conventional counterparts but are arranged in a pattern that emulates natural networks, such as the human brain. The invention holds out the prospect of a new generation of extremely powerful yet energy-efficient electronics.



THREE TOP PROGRAMMES

The Keuzegids Universiteiten 2016 is a guide for prospective students and compares all bachelor programmes offered by Dutch universities. It has singled out three UT programmes as outstanding, awarding them the epithet 'Top Programme'.



They are Chemicals Technology, Applied Physics and University College Twente (ATLAS).

PRINTING GOLD

At present, almost all 3D printing uses plastic. However, researchers at the University of Twente have recently succeeded in printing objects using gold and copper. Because metals are generally more robust than plastic and are good conductors of heat and electricity, the technique could open the way for entirely new printable components and products. The researchers' method uses laser light to melt gold and copper into microdroplets, which can then be stacked onto a surface.



SUSTAINABLE TRANSPORT

Investments in public transport are a relatively expensive way of improving sustainability, according to Ties Brands. In his doctoral dissertation, Brands asserts that a focus on promoting the use of electric vehicles, telecommuting and the development of business locations close to railway stations will be far more cost-effective. Brands has developed a mathematical model that calculates the cost of reducing carbon emissions. He concludes that measures addressing public transport will cost 1.10 euros per kilo CO₂, while efforts to promote the use of electric vehicles will cost 0.35 euros per kilo. The introduction of more stringent environmental requirements for vehicles will cost just 0.11 euros per kilo.

FRAUNHOFER AND TWENTE JOIN FORCES

The University of Twente is to form a long-term working partnership with the Fraunhofer Society, Europe's largest non-profit applied research organization. Fraunhofer, which enjoys an extremely high international reputation, is to establish a Project Centre on the UT campus. This will eventually develop into an independent institute for R&D projects undertaken alongside industrial partners.



For further information on all these items, see our renewed website www.utwente.nl.

PROMOTING EXCELLENCE THROUGH COOPERATIVE, INVESTIGATIVE AND DESIGN-BASED LEARNING



BE COOL!

'Promoting excellence through cooperative, investigative and design-based learning' is the title of a research proposal by Tessa Eysink of the Instruction Technology department, part of the Behavioral Management & Social Sciences (BMS) faculty, in association with Weer Samen Naar School Lelystad and education consultants Expertis. The project, with its acronym BE COOL!, was one of 35 proposals selected by an independent jury from some 185 entries to form part of a research programme funded by the Ministry of Education.

As one of the brighter pupils at her primary school, Alieke van Dijk was often separated from the group and assigned extra work. Twenty years later, many schools still apply the same approach. BE COOL! examined whether gifted children are more likely to flourish in an environment that promotes cooperation, social inclusion and cognitive excellence. Alieke, now a PhD student at UT, was its lead researcher. TEXT Kees de Rijk PHOTOS Gijs van Duwerkerk

EVIDENCE-BASED EDUCATION

BE COOL!

Shortly after her graduation in 2010, Alieke van Dijk heard about the Ministry of Education's research programme examining the effectiveness of various 'evidence-based' educational approaches. "From the same department I graduated from, Tessa Eysink submitted a research proposal," she recalls (see insert). "Reading the proposal made me very enthusiastic. I am a firm believer in cooperative learning as a complement to the purely cognitive approach and the individual course material that already exists."

Better tools

Educational reform is not an end in itself, and certainly not a 'silver bullet', Van Dijk realizes. "If something is reported on by the media, it is often presented as the one and only new educational approach. A recent example is 'kinesthetic learning', whereby pupils are encouraged to move around rather than just sitting still in the classroom. It also alarms teachers when they think that they will be required to adopt entirely new methods. It is good to show that a particular method is effective, but it can only be part of an overall approach. I think of it in terms of a toolbox, to which new and better tools are added at regular intervals."

Heterogeneous groups

Another misconception that Van Dijk wishes to dispel is that 'reform' always implies renewal and replacement. "Many developments are the result of a gradual evolution, often based on intuition. The Dalton Plan is an example of an educational concept that builds upon a strong cooperative learning component. We based the BE COOL! study on the Jigsaw method, which was first described in 1978, and developed it further in the classroom. It developed into a method that comprises a series of seven lessons of a morning or afternoon a week each. This approach is particularly suited to subjects such as science and technology or citizenship (world orientation). We wanted to adapt the method and make it suitable for heterogeneous groups."

On the moon

The project designed course materials that guide pupils through the process of planning, building and inhabiting a house on the moon. The materials were then tested in 33 primary schools in Lelystad. The BE COOL! method kills several birds with one stone, Van Dijk suggests. Analysis of the data relating to 2,500 pupils reveals that the more gifted children learn just as much when part of the group as they would when working alone. A diagnostic instrument implemented alongside BE COOL! identifies the under-achievers who can then be

given extra help. "The teacher can devote time and attention to all pupils, regardless of ability."

Not a blueprint

"If we add our results to all the known positive effects of cooperative learning, we can say that the value of the BE COOL! method has been proven beyond doubt," Van Dijk says. "But even our method is not a blueprint for how things must be done. A seven-week project makes significant demands on even the most enthusiastic teachers and pupils. Nevertheless, there is enough evidence to suggest that the basic essence of the method would be effective even in a project of just one morning or afternoon. I hope that we have given teachers another tool to add to their toolbox."

"I am a firm believer in cooperative learning"



ALUMNI DAY FRIDAY 15 APRIL

UNIVERSITY

There are no fewer than 40,000 alumni who represent the University of Twente at home and abroad. You are one of them. We are always interested to hear what you are doing and how you are now 'making a difference'. **Alumni Day on Friday 15 April 2016** will provide an excellent opportunity for us to renew our acquaintance. We have planned an inspiring programme and there will be plenty of time to catch up with friends and fellow students. We will be happy to show you around the campus, and there will of course be the chance to relax and 'chill' together, just like the good old days. In short: a day of nostalgia, networking and new ideas.

FOR FURTHER INFORMATION, VISIT UTWENTE.NL/ALUMNIDAG AND DON'T FORGET TO INVITE YOUR FORMER FELLOW STUDENTS!

OF IMPACT

ALUMNI DAY PROGRAMME

The University of Twente has been making a difference for 55 years. The theme for our special anniversary event is therefore: 'University of Impact'

MORNING

Guided tours of the campus, including lecture rooms and laboratories.

AFTERNOON: CENTRAL

Senior professors, prominent alumni, students and university administrators describe past, present and future developments. A journey through time.

AFTERNOON: DEPARTMENTS AND PROGRAMMES

Mix and mingle with students and staff, past and present, from your own department and programme. This will be an excellent networking opportunity and a chance to discuss current developments in your discipline.

EVENING

An anniversary deserves to be marked in style. Several student societies and associations will be organizing parties for their members, either on campus or in the city. Alumni are more than welcome. Celebrate with friends old and new – a chance not to be missed!

FOR THE LATEST UPDATES SEE
UTWENTE.NL/ALUMNIDAG





CYBER SECURITY BELONGS IN THE BOARDROOM

The Chief Cyber Security Officers of the future. That is how Prof. Pieter Hartel sees the intake of students who have enrolled for the new Cyber Security track, a specialist option within the two-year master's in Computer Science. "Cyber security is a topic that belongs in the boardroom. The importance of our data and our critical infrastructures requires ever more complex strategic decisions to be made." TEXT Laurens van der Velde PHOTO Gijs van Duwerkerk

LIVES DEPEND ON INTERCONNECTIVITY AND THE INTEGRITY OF THE DIGITAL INFRASTRUCTURE

Earlier this year, 35 students embarked on the new master's track in Cyber Security: 22 at the University of Twente and 13 at TU Delft. The programme is offered under the banner of the 3TU alliance, which also involved staff from TU Eindhoven. Its curriculum includes the hard technical subjects such as data analytics and cryptography, but students are also expected to develop soft skills in disciplines such as psychology, economics and law.

Growing complexity

For some time, Prof. Hartel has noticed that the issues surrounding cyber security are becoming increasingly complex. A specialist programme that addresses the growing importance of information security was clearly required. "We set to work developing an integrated approach to cyber security, which would consider both the technical and the social aspects. Cybercrime invariably entails strategic behaviour. We do not know who our adversaries are, what they are planning or what their motives may be. If we can find the answers to these questions, we create a broader picture, which not only enables us to model and analyse the situation, but to predict what will happen in future and take preventive action."

It is this predictive ability that meets the current requirements of the field, Hartel believes. "Having devised the outline of the programme, we met with representatives of industry and government. All supported our

plans because they could see the relevance to the challenges they now face." To ensure that the programme continues to meet the field's requirements, researchers will meet with an advisory council at least twice a year, while companies and government departments will provide real-life case studies for the students to work on.

Socio-technical skills

"The case studies demand not only excellent technical skills," Hartel explains. "There are broader issues at play. What are the motives of the cybercriminals? How should an organization respond to threats? What role does legislation play? What should and should not be permitted?"

"Students must develop a range of technical skills and study at least one of the socio-technical disciplines in depth. Approximately one third of the curriculum is concerned with those socio-technical skills. The remaining two thirds deals with the hard technical skills, such as data analysis and software security assessment. Obviously, knowledge in these areas must be at a very high level."

Career prospects

Students who complete the master's track in Cyber Security can be confident of pursuing a rewarding career, Hartel suggests. "The universities can barely keep up with the demand for cyber security experts. We have developed a digital world, by far the largest system ever devised by mankind, and it seems unlikely

that we can ever simply switch it off. Lives are dependent on digital interconnectivity; our critical infrastructures are online. Cyber security is no longer the exclusive domain of the IT manager. The Chief Information Security Officer deserves a place at the highest management level. He or she must be a serious discussion partner in the boardroom."

"The universities can barely keep up with the demand for cyber security experts."



For one week in August, the UT campus was transformed into a vibrant festival site as it hosted the first ever CuriousU, an informative and informal summer school. The formula proved an instant hit. TEXT Lidewey van Noord PHOTOS Gijs van Duwerkerk



CURIOSU SUMMER SCHOOL

CuriousU attracted almost two hundred undergraduate students from 74 universities in 28 countries, including Brazil, Japan, Australia and the USA. They were drawn by the unique and appealing concept. As project manager Rianne Kaptijn reports: "Having spent a week at the Twente summer school, all participants returned to their home countries as ambassadors for the University of Twente, which was one of our objectives. The students enjoyed their time here and were extremely enthusiastic."

During the summer school, the students could attend several courses, all of which had a strong link to UT's research. The topics covered included health, smart cities, serious gaming, water, design and risk management. "All courses were very well received," Kaptijn continues. "Students on the enterprise course found the instruction in 'pitching' to be particularly useful, while we also received many positive comments about the practical experiments that formed part of the physics course – how to escape from quicksand, for example. CuriousU gave us the opportunity to show off our university and all its many facilities: the laboratories, the student accommodation, the sports amenities and so forth." The programme also included various excursions and social

activities. At the 'Happy as a Child' lunch, our guests could regress into childhood and play on bouncy castles, blow bubbles and take part in a water fight. It was extremely popular, as was the music of the many live bands who performed on the Saturday evening. Another highlight was illusionist Victor Mids, who appeared on stage in the open air theatre before mingling with the crowds on campus to show visitors his amazing close-up magic. "Victor later told us that he has never been asked so many questions about the science behind his tricks. He really enjoyed explaining them, without giving away any secrets of course, because everyone was clearly so interested and well informed."

Alongside the appealing combination of summer school and festival, Kaptijn believes that CuriousU owed its success to the international character of the event and the enthusiasm of the team that organized it. "CuriousU proved to be a fantastic way of promoting the university, and everyone involved really enjoyed taking part – not only the students but the organizers and the teaching staff who ran the courses. The dates of next year's event have already been set: 15 to 22 August 2016. I hope we can welcome even more international visitors and send them home as eager UT ambassadors!"



CURIOSU SUMMER SCHOOL 2015:

- Approximately 200 participants
- From 28 countries
- Representing 74 universities
- 8 courses
- 100+ UT professors and lecturers
- 100+ UT-docenten

"The international character is an excellent way of promoting our university"

In October, Solar Team Twente achieved a very creditable second place in the Bridgestone World Solar Challenge, the prestigious annual race for solar-powered vehicles. It was very close: after five days on the road, the winning team crossed the finishing line just three-and-a-half minutes ahead of the runners-up. Yet again, Solar Team Twente clearly showed that they belong to the best in the world. TEXT Joost Bruysters PHOTO Jerome Wassenaar

SHINING PERFORMANCE BY SOLAR TEAM TWENTE



This year's World Solar Challenge was even more exciting than usual. Over fifty international teams joined the race through the Australian outback, each with a solar-powered vehicle they had designed and built themselves. The sun was their only source of energy over the three thousand kilometre course. Solar Team Twente, made up of nineteen students from UT and Saxion University, maintained a good lead until the fourth day when they were overtaken by the team from TU Delft. There was just three-and-a-half minutes difference between the winners and the runners-up. Never before has the race been this close.

Proud

Robin Haandrikman, technical manager of Solar Team Twente, was disappointed not to have won but proud of

the team's achievement. "Our average speed was over 90 kilometres per hour, which is phenomenally fast. We experienced no technical problems and are more than satisfied with our vehicle." Victor van der Chijs, president of the Executive Board of the University of Twente, is also extremely proud. "Never before have we been so close to victory. This was a great achievement."

Innovation Award

Although the winner's trophy proved elusive, the race organizers announced that the Twente team had won the Technical Innovation Award. It was presented in recognition of the unique SABINE system. This secret weapon maximizes the efficiency of the solar panels in the shade.

ACCELERATING FROM A STANDING START

DISTIMO SCORES WITH ITS ANALYSIS OF APP POPULARITY

Six years ago, mobile apps were not yet big business. Nevertheless, four UT-alumni saw the potential and founded the company Distimo. They developed a data analysis tool that provides valuable market information for app developers. The seeds that were planted in Twente blossomed in Silicon Valley. text Hans van Eerden PHOT Gijs van Ouwerkerk

They first met as undergraduates at UT. Remco van den Elzen, Ruben Heerdink and Vincent Hoogsteder studied Business & IT, while Tom Jansen studied Technical Computer Science. Their paths crossed again at the Student Enterprise Center on the university campus, and yet again when they found themselves working for eBuddy, a developer of mobile software. Clearly they were destined to start their own business together.

Measuring the popularity of apps

The four young entrepreneurs called their company Distimo, a contraction of 'distribution' and 'mobile'.

"It has become a big data story"

"Vincent had already started to collect data about the popularity of certain apps," recalls Remco van den Elzen. "The number of downloads, revenue, that sort of thing." They had access to accurate data about eBuddy's apps and could estimate the figures for others based on the information shown in tapp stores.

Complex algorithms

Distimo is able to provide interesting market information for tens of thousands of app developers

and at least ten times as many apps. "It has become a big data story," says Vincent Hoogsteder. "The systems must be fed with data around the clock. There have been several occasions when we sat up all night trying to solve a problem, with only a pizza for company." "Technically, Distimo is a complex product," Van den Elzen adds, "especially in terms of the analysis and the algorithms it applies to the large datasets. We had a head start in that we had many contacts among app developers."

Flying start

"The product was very relevant to our backgrounds at UT," says Vincent Hoogsteder. "Ruben and Tom looked after the technical side, while Remco and I were more concerned with the commercial aspects." However, the key to Distimo's early success was undoubtedly the entrepreneurial climate at UT. All four had been involved in running a company even as students, and were therefore familiar with aspects such as maintaining contact with clients, preparing contracts and managing staff. Distimo was able to make a flying start, with the added impetus of the TOP scheme, now run by Kennispark Twente. "TOP provided the starting capital we needed."



In the courtyard of Distimo's canalside offices in Utrecht, from left to right: Vincent Hoogsteder, Remco van den Elzen, Ruben Heerdink and Tom Jansen: "You have to take the global view." (Photo: Lize Kraan)

DISTIMO ROCKS

Well-known companies that use the Distimo tools include Lonely Planet, CNN, McAfee, LinkedIn and Skype. Satisfaction is high, as their testimonials confirm. "Distimo gives us a clear, detailed and accurate view of app download metrics. It enables us to easily assess performance and assists in product and marketing decisions," writes Jeremy Kreitler, VP Wireless Services at Lonely Planet. Darius Cheung, Director of Consumer Mobile Technology at McAfee, said: "Distimo rocks. They save us at least five man-days a month that we used to spend manually pulling data together for analysis."

App Annie

By the time of the launch itself, the four young entrepreneurs were living in Utrecht and Amsterdam and decided to base their start-up in UtrechtInc., a business 'incubator'. While they had little need for most of the facilities provided, it offered an excellent ambience. "You are among people with the same dreams and ambitions. You give each other tips, have lunch together, go out for a beer together. This helps to maintain your drive and enthusiasm." Distimo grew rapidly and before long had some fifty employees at its canalside headquarters in Utrecht, where it now operates as part of the App Annie group.

Rivals

The American company, which had also been launched in 2009 and with a similar vision, acquired Distimo last year. "We used to run into each other at trade fairs or client presentations. We saw each other as fierce rivals, which kept us both on our toes. Last year, one of the investors behind App Annie brought us together." It was an acquisition rather than a merger, because App Annie was by far the larger of the two. "We soon realized just how large this market is set to become. We had an extremely good product. We thought that growth would be automatic."

Loyalty

The acquisition saw the disbanding of the team. Ruben and Vincent left the company altogether, while Remco decided to take a sabbatical in San Francisco with his young family. "Only Tom, the most technical of the four of us, stayed on. He is now in charge of the Utrecht team. The quality of our other staff, many of whom were from Twente, was so high that App Annie decided to keep the Utrecht office. For anyone who needs technical staff, the Netherlands is the place to be. People have a good work ethic and are extremely loyal."

New plans

Vincent Hoogsteder is already hatching new business plans. "I want to put the lessons I have learned into practice. I now know how important it is to involve experienced people from the outset. And you must not wait for things to take off by themselves – you have to go for it and make things happen." Remco van den Elzen concludes: "Many start-ups focus solely on the Netherlands, or perhaps the Benelux countries. Before you know it, you're facing competition from Silicon Valley or China. You have to take the global view."

www.distimo.com

IN THE LAB

Name **Janneke Veerbeek and Wouter Vijseelaar**
Age **25 and 29**
Position **PhD students at MESA+ (department of Molecular Nanofabrication)**
Research **Development of solar cells for the production of hydrogen**
Lab **NanoLab cleanroom**

TEXT **Marco Krijnsen**

PHOTO **Gijs van Ouwkerk**

Nothing is allowed to disrupt research in the MESA+ NanoLab. The bright red building stands on four hundred foundation piles, driven deep into the ground to rest on the stable sand stratum below. This prevents vibrations. Anyone entering the lab must observe a strict dress code: full protective clothing from head to toe. Any dust particles could ruin months of work at a stroke.

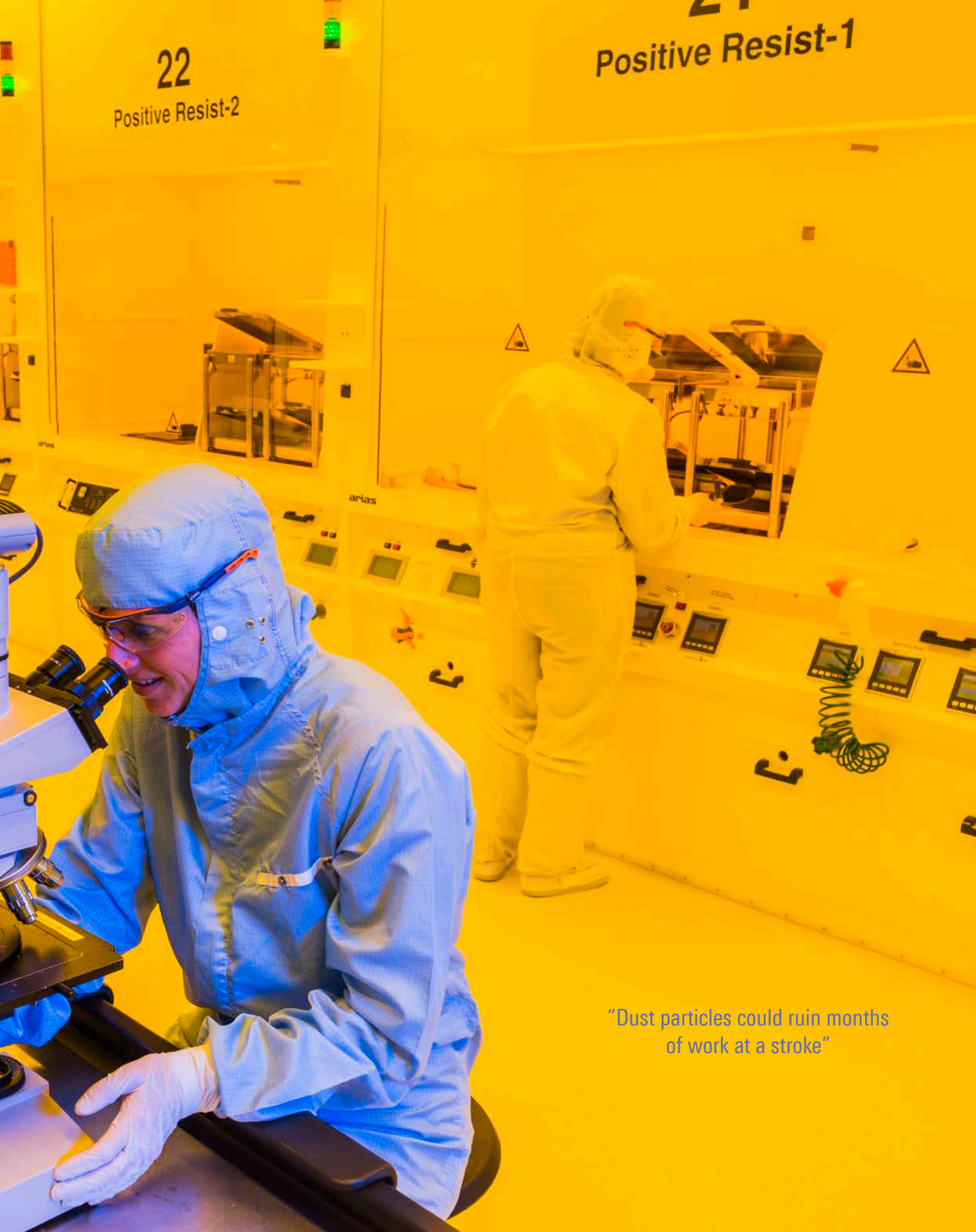
PhD researchers Janneke Veerbeek and Wouter Vijseelaar spend between ten and forty hours a month in the lab's cleanroom. They are developing 3D solar cells that will split water into its constituent parts: oxygen and hydrogen. Hydrogen is seen as the clean, carbon-neutral fuel of the future. Here in the lab, the researchers apply lithographic techniques to 'etch' the cells and they use special ovens to vaporize metals such as aluminium, platinum and gold. They view the results of their research using electron microscopes.

"We have to work in an entirely clean, dust-free environment," explains Janneke Verbeek. "The diameter of the average human hair is 100 microns. We are working with structures of 4 microns or even less." Her colleague Wouter Vijseelaar nods in agreement. "Everyone sheds a square metre of dust particles every day, and that could spell disaster for our research. That is why this controlled environment is so important to us."



22
Positive Resist-2

21
Positive Resist-1



"Dust particles could ruin months of work at a stroke"

MARITE SEILE: THE MASTER'S STUDENT WHO BECAME MINISTER OF EDUCATION



THE SHORT LINE BETWEEN TWENTE AND RIGA

Marite Seile (49) is Latvia's Minister of Education and Science. She has many ambitions and believes that her time as a student in Twente will help her to achieve them. "I learned how to bring together people with different backgrounds," she explains." TEXT Marco Krijnsen

It is some twenty years since Marite Seile attended the UT master's programme in Education Training Systems & Design. She nevertheless remembers her time in Twente vividly. Her relatively short stay on campus was a turning point in her life. "I came to Twente soon after the collapse of the Soviet Union. Until then, it had been very difficult for us to travel abroad for work or study. Once Latvia regained its independence, we had the

opportunity to do so and I seized it with both hands. I wanted to study in an international environment because I thought it would be valuable in terms of my personal development and my professional career. And I was right." That Marite Seile came to Twente was almost a matter of luck. "I did not make a long list of universities to choose from. I was working as a math teacher in a secondary school and it was our principal who

recommended Twente. Why? I forget. I do remember that I wanted to learn more about education. Education is very important to a country, especially one that has only recently become independent and must build its own future."



FROM MATH TEACHER TO EDUCATION MINISTER

Marite Seile (1966) held several positions in education and business before becoming Latvia's Minister of Education and Science in November 2014.

1984-1989	education in mathematics at the University of Latvia
1989-1992	teaching assistant and master student University of Latvia
1992-1996	teacher of mathematics and deputy director in Preil (Latvia)
1996-1998	education project manager at Soros Foundation (Latvia)
1995-1998	Master Education Training Systems & Design at the University of Twente
1998-2004	Founder / Director of School Support Centre (Latvia)
2004-2008	HRM director of supermarket chain Maxima (Latvia)
2008-2013	director concrete group Primekks (Latvia)
2013-2014	Director Education Foundation Mission Possible (Latvia)
2014-present	Minister of Education and Science

Cycling

Marite Seile lived on campus for about five months. It was quite a difficult period, she recalls.

"Everything was new and unfamiliar. For one thing, it is impossible to live in the Netherlands without a bike so the first thing I did was to buy one. I spent a lot of time exploring Enschede and Hengelo on two wheels. This was basically my only leisure activity as I never got around to joining one of the student associations and I rarely if ever set foot in a café. I had to focus on my coursework." This was perhaps partly due to her limited knowledge of English and computers. "Of course I could speak and read English, but not at an academic level. It was something of a struggle to understand some of the textbooks. A lot of the coursework required us to work on the computer, something else with which I had very little experience. All in all, studying cost me a lot of time and energy. At first, my grades were average at best. I was not used to that: at home in Latvia I had always been one of the high fliers."

STILL IN TOUCH WITH THE 'FATHER' OF THE MASTER PROGRAMME

In the nineties, the University of Twente offered an English-language Master programme in Education & Training Systems Design. The annual inflow was about 50 students, mostly coming from abroad. Countries in Eastern and Central Europe were well represented. That was understandable, because they had just separated from the Soviet regime and were working to set up new educational systems. Moreover Twente at that time was one of the few universities offering an English language master.

UT training coordinator Jan Nelissen remembers Marite Seile as a quiet student who acted not in the foreground. Notable was indeed her determination. "That really stuck with me. She could not do the full-time master, because of other commitments in Latvia. Despite the challenging circumstances of having to travel back and

forth she still was able to complete the master successfully." Nelissen has had occasional contact with Marite Seile after her Twente education, and UT colleagues Jan van den Akker and Martin Mulder also met the minister during a conference in Riga. "She has good memories of Twente and indicates that it has helped her to get where she is today. I can understand that. For a Minister of Education, it is important that you know what you're talking about when it comes to for example, measuring the quality in schools. We hope to meet each other again, but because of our busy schedules it has not happened yet."

"Jan Nelissen was like a father to us," said Marite Seile, "For our group, but also for us individually. He made sure that we learned so much from the master."

The UT programme taught the future minister much about educational science. Perhaps even more valuable, however, was the exposure to fellow students and their diversity. "We were a very international group and we spent a lot of time together. I am still in contact with fellow students from Bulgaria and Estonia. We all learned much from each other and about each other. We were introduced to different cultures and met people with different backgrounds. We learned to see things from different perspectives. That has been an extremely worthwhile lesson throughout my life and career. I am still reaping the rewards, even – or perhaps I should say especially – as a government minister. These skills are very useful if you are trying to achieve consensus among a group of people with very divergent views."

A good teacher

After her brief stay in Twente, Marite Seile returned to Līga, where she became project manager with the Soros Foundation, an organization concerned with

government policy reform. Because she had not yet completed the master's programme, she made several return visits to Twente and was finally awarded her MSc in Education Training Systems & Design in 1998. She has many ambitions as minister because she believes that the Latvian education system has yet to achieve its full potential. "We are not particularly high on the Pisa ranking (worldwide ranking of education performances), and it is evident that the differences between schools are becoming even more marked. The urban schools are performing far better than those in the rural areas. This is partly a question of size: our smallest school has only twelve pupils. Some local politicians are more concerned about winning the next election than with the quality of education. My aim is to strike the right balance between the three pillars of quality, accessibility and effectiveness. That is something we must achieve if we are to make progress."

"My aim is to strike the right balance between the three pillars of quality, accessibility and effectiveness."

THE NATIONAL RESEARCH AGENDA

The National Research Agenda was published in late November, following lengthy preparations under the guidance of Alexander Rinnooy Kan and Beatrice de Graaf. There was a consultation process in which the Dutch public were asked to suggest the questions to which the scientific world should turn its attention. No fewer than twelve thousand questions were submitted, from the very general to the extremely specific. "How can we manage water effectively in the future" "What effects will new technologies and big data have on the effectiveness of government and the constitutional state?" "Is there extra-terrestrial life?" They were eventually condensed to form 140 research themes and topics.

The background of the National Research Agenda was contentious in that not everyone agreed that the activities of the scientific field should be decided by the general public. Surely, this is something for the experts to decide? Isn't science too complex to be left to the man in the street?

Experience suggests that the concerns were not justified. The process represents a major victory for the democratization of science. All questions submitted by the public were assessed by panels of experts. Those that did not form the basis of serious scientific enquiry were filtered out, and the remainder were clustered by theme. The results of this process

were then presented to the research field, the private sector and representatives of society in the broadest sense of the term, thus ensuring maximum support.

Something very noteworthy has occurred, which may well go down in the annals of history. The process of clustering the questions entailed transcending the traditional boundary lines between scientific disciplines. It seems that the questions that really matter cannot be pigeonholed within any specific discipline. I was personally involved in the assessment of questions relating to the humanities and social sciences. We soon found that we had to define a new category: "falls partially within and partially beyond the humanities."

This demonstrates how radically the character of science is now changing. It is no longer the disciplines that form the backbone of science, but the questions that are asked by society and within the scientific field as a whole. The disciplinary approach can help in answering those questions, but the disciplines have become a means to an end rather than an end in themselves. This reflects the way in which the University of Twente has organized its research activities for many years. We do not work within faculties but within institutes. And we do not work on the basis of set disciplines, but further to interesting questions and major societal issues. The National Research Agenda could have been written for us! ●

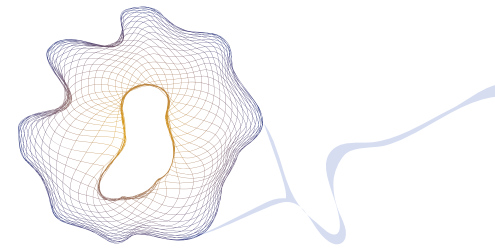


"A MAJOR VICTORY FOR THE
DEMOCRATIZATION OF SCIENCE."



PROF. P.P.C. (PETER-PAUL) VERBEEK (B. 1970) IS PROFESSOR OF PHILOSOPHY OF TECHNOLOGY AND CO-DIRECTOR OF THE DESIGNLAB AT THE UNIVERSITY OF TWENTE.

IN BRIEF



PARTNERSHIP IN NANOTECHNOLOGY

The University of Twente and Saxion University are to intensify their cooperation in microtechnology and nanotechnology research. By combining their strengths, the two institutes hope to fast-track innovation, create even better

opportunities for students, use their joint facilities more efficiently and promote enterprise better. The overall result will be burgeoning commercial activity based on the products and services developed in Twente.



COMA

EEG monitoring enables doctors to predict the likely outcome of oxygen starvation in coma patients with far greater accuracy than other methods. This is the conclusion of a major research project in which the UT has been involved. Current methods can accurately assess risk in only ten per cent of the cases. The new method investigated by the partners has a success rate at least five times higher. It entails continuous EEG monitoring to assess the speed at which brain activity recovers. This has been shown to be a better indicator of the severity of brain damage than the incidental measurements used in the past.



BREAST CANCER

Researchers at the UT research institute MIRA have developed a system that can quantify the risk of breast cancer recurring in individual patients. The system has been placed online and will help doctors to determine the best follow-up for their patients, whether in the form of further treatment or observation.

NO MORE BLUE ENVELOPES

For many decades, the Dutch Tax Administration has communicated with the public by post. Its letters, forms and demands are easily recognizable by their blue envelopes. The State Secretary of Finance, Eric Wiebes, has announced that all correspondence is to be digitized. In future, taxpayers will have an online 'mailbox' that can be accessed using the secure DigiD login code. The transition represents a huge logistical operation. At the request of the Tax Administration, researchers at the UT's Center for e-Government Studies are to monitor the public response, the extent to which people are familiar with the mailbox and, most importantly, actually use it.



MESA+ NANOLAB LOOKS TO THE FUTURE

The MESA + NanoLab has been operational for precisely five years. During that time, some 5.25 billion cubic metres of clean air have been pumped into the building and a total of five kilos of gold have been used in the research: enough to gold-plate the entire city centre of Enschede to a thickness of one micron. These are just two of the interesting statistics that accompany the anniversary. In fact, there are two reasons to celebrate. Not only is it five years since the MESA + NanoLab was opened by (then) Prince Willem-Alexander, it is 25 years since his father Prince Claus opened the very first cleanroom at UT. "We cannot let these milestones pass unnoticed," says Gerard Roelofs, head of the MESA+ Nanolab. On 5 November, staff and regular users were presented with a commemorative box of 'nanopills' (small peppermints in a blister pack). The official start of the anniversary programme followed on 27 November, the University's Dies Natalis (Founders' Day). MESA + NanoLab has launched an online timeline, on which visitors are invited to add their comments and ideas about nanotechnology in words and pictures. The anniversary celebrations will conclude in spring 2016 with a seminar about the results, developments and prospects of nanotechnology research. Further information can be found at utwente.nl/nanoanniversary.

A WINDOW-CLEANING ROBOT

UT spin-off company KITE Robotics has developed the world's first completely autonomous window-cleaning robot. The device, intended for use on large buildings, consists of a large rotating brush that is attached to the exterior of a building with four cables. Smart sensors communicate with the control software. According to KITE, the robot is five times faster than human window-cleaners. It was recently put through its paces on the university's Spiegel Building. Press and public were duly impressed.



THT INTAKE OF 1965 REUNION

The University of Twente has changed much in the past fifty years, as has the campus of course. Nevertheless, the THT intake of 1965 felt thoroughly at home when they returned for a reunion. Over a quarter of the original group gathered to help us mark the 54th Dies Natalis (Founder's Day) on 27 November. The programme began with a tour of the campus in a genuine London double-decker bus. The group also visited two of the student houses they had occupied almost fifty years ago and found

that little had changed. The tour was followed by lunch at the Faculty Club, the former student cafeteria, which also brought back many memories. In the afternoon, the group attended the official Dies Natalis ceremony where they were welcomed by the Rector Magnificus, Ed Brinksmas. The day concluded with dinner and drinks at the restaurant in the Gallery, which the alumni would remember as the CT building. Our visitors were asked to identify themselves and their fellow

students on the photograph below. Promising to stay in touch in the future, everyone went home feeling very satisfied with a successful reunion.

On Alumni Day, 15 April 2016, a special programme will be held for all former THT students.

photos Rikkert Harink



Archief Brusse



ALUMNI GIVEN ACCESS TO JSTOR

While at university, students are able to use the various (digital) libraries that provide access to scientific journals, articles and papers. At the request of a number of former students, the Alumni Bureau and University Library are to offer alumni access to the online JSTOR database. They will then be able to read tens of thousands of articles and all back numbers of over two thousand scientific journals covering a wide range of disciplines. The JSTOR database will become available to alumni during the first quarter of 2016. For further information, please contact alumni@utwente.nl.

EXCELLENT RESPONSE TO ALUMNI SURVEY

Earlier this year, alumni of four programmes (electrical engineering, public administration, European studies and mechanical engineering) were asked to complete a short questionnaire about their studies at UT. The purpose was to determine how valuable the courses had been in terms of the alumni's professional careers, and to invite alumni to contribute to the current BSc and MSc programmes. Over two thousand alumni completed the survey, of whom almost half would be willing to make some contribution to the programmes. The results have been

collated in a database that is accessible to both faculty staff and the alumni associations, who are therefore able to contact people should their help be needed. The departments are also being invited to help organize various events and activities for alumni, beginning with the Alumni Day on 15 April 2016.

UT ALUMNI ON THE MOVE

■ **Annemieke Nijhof (CT '90)** was recently named Female Director of the Year 2015. She has been CEO of the Tauw Group engineering consultancy since February 2012. The competition judges praised Nijhof's decision-making skills and her effective management of Tauw in the recent difficult economic climate.

■ **Suzanne Jungjohann (TBK '95)** was appointed Director of Group Human Resources & Business Development at Delta Lloyd in June 2015. Her previous employers include Tempo-Team, Randstad and Towers Watson PPI.

■ **Martijn Kranen (IO '11)** became Head of Product Design at Qelp in June 2015. His previous employers include Tieto, brightONE IT Services and Supershift.

■ In July 2015, **Robin Heemskerk (TCW '06 and CS '07)** was appointed Production Manager (Netherlands and Belgium) for the sports broadcaster Eurosport, which is based in Paris. He began his career with Grumbel Media and also spent time with Lengou.

■ In July 2015, **Nicole Mulder (IBA '12 and BA '13)** became Business Controller with Kees Smit Tuinmeubelen, a leading distributor of garden furniture. She joins the company from KroeseWevers.

■ **Christian Wagner (ES '10)** was appointed Public Policy and Government Relations Analyst with Google in July 2015. His previous employers include Fleishman-Hillard and TechAmerica. In 2012, Wagner was one of the co-founders of the Young Professionals in Digital Policy (YPDP) network.

■ In July 2015, **Loek Beckers (TBK '98)** was named Vice President and CFO of SAIC General Motors in Shanghai, China. He has been with the General Motors organization for some years, having previously worked with SABIC and General Electric.

■ **Erik van Dijk (TN '00 and PhD TNW '05)** was named Director of Operations at EasyScan in August 2015. He previously held various positions at Philips.

■ In September 2015, **Sifan Abera Koriche (GEO '12)** was named Marie Curie Research Fellow at the University of Reading (UK). He joined the staff of Jimma University in Ethiopia in July 2012.

■ In September 2015, **Art van de Belt (CS '95)** took up the post of Technology Advisory Director with Deloitte Australia. He has previously held posts with Capgemini in the Netherlands and in Australia.

■ **Paul Boomkamp (PhD WB '98)** joined the Executive Committee of PGGM in September 2015 and now holds the post of Chief Financial & Risk Officer. He was formerly a member of the Executive Board of the Catharina Ziekenhuis in Eindhoven.

■ In September 2015, **Jan Willem Bosker (TBK '98)** was named Product Development Manager with ASML. He previously held various positions at Fokker Aerostructures.

■ **Matthijs Nijboer (WTS '95)** has been named director of the regional conservation organization Natuur en Milieu Overijssel, a post he assumed in September 2015. He was formerly Director of Sustainability and Energy at Atrivé, part of the Tauw Group.

■ In October 2015, **Michael Jongeneel (INF '98)** became a partner in Bain & Company. He is also a non-executive director of Giro 555/SHO and a member of the supervisory board of the Zuwe Hofpoort hospital.

■ **Christian Probst (IE&M '07)** was named Vice President Multi-Asset Solutions Structuring at Citibank in October 2015. He has extensive experience in the financial world having previously worked for Merrill Lynch, Royal Bank of Scotland, JPMorgan and ABN AMRO Bank.

■ In November 2015, **Arjen de Vries (INF '95 and PhD EWI '99)** became Professor of Information Retrieval at Radboud University (Faculty of Science). He was previously head of the Information Access group at CWI.

■ **Arjan Kuijper (TW '95)** was appointed visiting professor of Mathematical and Applied Visual Computing at Darmstadt University of Technology in August 2015. He will combine the role with his work at the Fraunhofer Institute in Darmstadt, where he is responsible for scientific output.

You can follow news about alumni on Twitter (@[alumniUTwente](https://twitter.com/alumniUTwente)). If you or someone you know has a new job or has won an award, please let us know: alumni@utwente.nl

COLOPHON ALUMNI NEWS

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Tel. +31 (0)53 489 2104
Twitter: @[alumniUTwente](https://twitter.com/alumniUTwente)

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www.utwente.nl/alumni



BIOART SUMMER SCHOOL

The BIOART summer school held on the UT campus in June was made possible by a contribution from the University Fund. BIOART is an international research network concerned with Biomedical membranes and (bio)artificial organs. The summer school was attended by 25 scientists from the Netherlands, Germany, Italy, Poland and France, who enjoyed an intensive programme which included 23 lectures, a research assignment and a poster presentation. Attendees also had the opportunity to discuss the latest developments in the field and to share experiences.



STUDY TRIP TO JAPAN

Over two hundred students will be able to travel abroad in 2016 thanks in part to a grant from the University Fund. In 2015, 'Astatine' (the student society for advanced technology) organized a study trip to Japan. Twenty students were accompanied by a number of staff members on a three-week visit under the Japanese motto, 'There is a strength in knowledge'. During their inspiring and educational tour, they visited several research institutes including the universities of Tokyo, Saitama and Nagoya, the National Institute for Materials Science (NIMS) and the Advanced Telecommunications Research Institute (ATR), as well as companies such as the e-commerce giant Rakuten and the car manufacturer Toyota.

THE UNIVERSITY OF TWENTE IS MAKING THE DIFFERENCE – ARE YOU?

In 2014, the University Fund launched a campaign entitled 'Make the difference'. It proved an enormous success: our alumni and partners raised over € 45,000 for the campaign's four designated projects. Thank you all! This year we are once again asking for your help. We have chosen four equally remarkable and worthwhile projects to support. Please help us to make the difference!

GIVE US YOUR HEART

Cardiovascular disease remains a major cause of death in the West. New drugs and treatments must be developed as a matter of urgency. A multidisciplinary research team led by Prof. Robert Passier is working on a new way of creating functional heart muscle from human stem cells. Using 3D bioprinting and UT technology, they produce models that can be used to emulate heart failure and to test new drugs. This reduces the need for live (animal) testing. A worthy cause that deserves our support!

DIGITIZING HISTORIC IMAGES

In the storerooms of the University Library are many boxes full of photographs and home movies that document life at the University of Twente and its predecessor, the Technische Hogeschool Twente. These are unique images that record the rich history of our institution, its student body, staff and alumni. There is a very good chance that you appear in at least one of the photos! In 2016, the University of Twente celebrates the 55th anniversary of its founding, an appropriate moment to digitize this valuable material and make it available to all alumni. Will you help us?

SUPPORT YOUNG TALENT THROUGH THE KIPAJI SCHOLARSHIP FUND

There are many talented and ambitious young people in the developing countries that are unable to fulfil their potential because they cannot afford to study at a leading European university such as ours. The Kipaji Scholarship Fund has been set up by a group of alumni and university partners with a view to allowing top talent to study in Twente. The opportunity to do so will not only benefit the individual students but also their home countries. We believe that this is a cause that you will wish to support.

KEEP THE EBENHAËZER AFLOAT

Throughout the history of our university, its many student associations have helped to ensure a vibrant campus and a varied social life for all concerned. Those associations can therefore count on the support of the University Fund. This year, we are focusing on the student sailing association D.Z. Euros and its 'floating headquarters', the Ebenhaëzer. This historic clipper now requires some restoration to ensure that future generations can enjoy the opportunity to sail in her. Please help to keep the good ship Ebenhaëzer afloat!



DO YOU WANT TO MAKE THE DIFFERENCE?

Visit www.utwente.nl/maakhetverschil and select the project(s) you wish to support. You can also make your contribution by bank transfer. Our account number is NL 09 ABNA 0592 7191 89, (Stichting Universiteitsfonds Twente). Please mention the name of your preferred project (if applicable). Thank you!



ANNA SPEROTTO WINS THE PROFESSOR DE WINTER PRIZE 2015

The Trustees of the University of Twente Fund have awarded the Professor De Winter Prize 2015 to Dr Anna Sperotto. The award was established in 2007 in memory of the prominent UT professor whose name it bears. It is given annually to a female researcher in recognition of excellent scientific research and as an incentive to continue her scientific career. The prize includes a cash award of €2,500 and is co-sponsored by the late Prof. de Winter's estate.

Dr Anna Sperotto is a member of the DACS research group working on Internet Security. Her specific area of expertise is the detection and prevention of Distributed Denial of Service (DDoS) attacks. The first large-scale wave of such attacks was seen in late 2010, when the victims included several banks and credit-card companies. DDoS attacks are now virtually an everyday occurrence affecting Internet service providers, schools, financial institutions and government departments. Dr Sperotto's research suggests that the attacks we have seen thus far could be just the tip of the iceberg. She has demonstrated that it is remarkably easy to perpetrate DDoS attacks, and warns of extremely far-reaching

consequences if their potential is ever exploited by a terrorist organization. The research conducted by Sperotto and her group has served to increase awareness of the risks, whereupon significant progress has been made in countering the possibility of DDoS attacks. Dr Sperotto has organized a number of meetings for the various stakeholders, and is also developing methods to detect and close down the websites that offer to carry out a DDoS attack for a fee.

Sperotto received the Professor De Winter Prize for her paper 'DNSSEC and its potential for DDoS attacks', which she presented at a conference in Vancouver in November 2014. The paper has since won two further international awards. The judges for the Professor De Winter Prize noted the immense societal importance of her research and its exceptionally high quality.



NEW: THE BREED-KREIKEN FUND

The Breed-Kreiken Fund will award scholarships to excellent and enterprising master's students and recent graduates who wish to continue their education abroad. It seeks to strengthen and encourage innovation here in the Netherlands. This is a 'named fund' founded by UT alumnus Loek de Breed and endowed by his consultancy De Breed & Partners. It also takes the name of Loek de Breed's former professor of mathematics and Rector Magnificus Prof. Jan Kreiken (shown on the far right of the photo). As Loek de Breed recalls, "Prof. Kreiken encouraged me to study in America and provided significant support. He enabled me to gain the benefits of international experience. I believe that it is essential for more Dutch students to expand their horizons in this way, whereupon they will contribute to innovation in the private sector here at home."

NEW: THE FRIENDS OF OD308 FUND

The Friends of OD308 Fund is supporting two very promising research projects at the University of Twente: 'New breath test can save lives' and 'Lifelong mobility'. The first project is being led by Prof. Guus Rijnders, whose aim is to develop a portable, ultra-sensitive breath test that can detect conditions such as lung cancer and tuberculosis at an early stage. The second is led by Dr Ciska Heida and is concerned with the 'repair' of damaged nerve structures, so that patients suffering from a condition that affects the central nervous system can remain mobile for longer. The Friends of OD308 Fund has been created by a group of five alumni who met each other when living in the same student house: Oldenzaalsestraat 308. (See also related story on page 40/41.)

NEW: THE KIPAJI SCHOLARSHIP FUND

The Kipaji Scholarship Fund will provide grants to talented engineering students from countries with underdeveloped economies, such as in parts of South America, Africa and Asia. In many cases, such students have the potential to study at a top university but simply cannot afford to do so. The fund has been set up by a number of alumni and partners. 'Kipaji' is the Swahili word for gift. The fund will be administered by the University Fund, which will award a number of Kipaji scholarships each year. One of the founders is serial entrepreneur Job Elders who states, "It is extremely important to offer these young people the opportunity to study in Twente, not only in the interests of our university and the Dutch knowledge economy, but also in terms of talent development and the emerging economy of the students' home countries." The Kipaji Scholarship Fund is one of the selected projects in this year's University Fund campaign.

WOULD YOU LIKE TO ENDOW A NAMED FUND?

You can support the University of Twente by making a one-off donation, a regular contribution or by naming the University Fund as a beneficiary in your will. It is also possible to endow a 'named fund', provided its purpose is in keeping with the general objectives of the University Fund. You decide the fund's name and how its resources are to be spent. The minimum donation required to establish a named fund is €10,000.

Support the University Fund!

For further information about how you can help, see www.utwente.nl/ufonds or contact Maurice Essers on +31 53 489 3993, email m.l.g.essers@utwente.nl

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FIRST PLACE IN VALORIZATION RANKING FOR 2015

TWENTE ONCE AGAIN THE MOST ENTREPRENEURIAL UNIVERSITY IN THE NETHERLANDS

On Wednesday 2 December, the University of Twente was named the Netherlands' leading university for valorization: the translation of scientific knowledge to societal and economic value.

Alongside research and education, valorization is the third core task of a university. The UT once again leads the national Valorization Ranking for 2015, thereby retaining the title 'Most entrepreneurial university in the Netherlands' which it gained in 2013. Of all thirteen universities in our country, the UT has provided the highest economic and societal 'added value'. The ranking is published by the research consultancy ScienceWorks in association with the publisher Elsevier.

The Valorization Ranking assesses universities in three different roles: the 'entrepreneurial' university (won by the UT), the 'cooperating' university (Wageningen) and the 'communicating' university (Tilburg). When the scores for each category are added together, the University of Twente emerges as the overall winner.

The judges' report notes that the UT once again stands head and shoulders above the rest as an entrepreneurial university. Its partnership with Kennispark Twente provides the necessary facilities for start-up companies, while the campus offers practically everything that an innovative company is likely to need. With its various seed funds, such as the Cottonwood Technology Fund, Twente Technology Fund and the PPM Fund, the UT does more to support (start-up) companies in the financial sense than other universities. The partnership with Cottonwood, the foundation of the DesignLab in September 2014, the launch of the Dutch Student Investment Fund in September 2015 and the recent announcement that Fraunhofer is to establish a presence on campus: all these developments further raise the University of Twente's profile as a top region for technology.



See also:
www.scienceworks.nl

Victor van der Chijs, President of the Executive Board of the University of Twente: "Cooperation and enterprise have been part of our university's DNA ever since its foundation. The same applies to Twente as a region. It is the cooperation with and between partners such as the Province of Overijssel, the city of Enschede, the Saxion University and the private sector that gives the region such a favourable business climate. The Twente Board, made up of representatives of both the business community and various knowledge institutes, is concerned with the development as a leading technological region in the European context. This demands ongoing attention for valorization and we shall continue to pursue our efforts in this area. Also very important is the ecosystem that supports start-ups and spin-offs, as established and strengthened by Kennispark Twente. An important part of valorization is bringing spin-offs and their products to market. Recent years offer many examples of Twente's success in doing so."

Herman Hazewinkel, President of the Twente Board: "We know the UT's strengths in this area. As regional partners, we work closely alongside the university to promote valorization and economic development. A regional partnership such as ours gains enormous benefit from having a strong player such as UT on board."

**UNIVERSITY
OF AWARD-WINNING
ENTREPRENEURS.**

Neelie Kroes, the government's special envoy for start-ups: "If you reach the top there is no need for false modesty. Once again, the UT has shown that it stands head and shoulders above others by placing entrepreneurship at the heart of its academic approach. It provides a role model for other universities that must also prioritize entrepreneurship and the practical application of knowledge. The research being undertaken by Dutch universities is world class, as is the knowledge they develop. Start-ups and spin-offs can use this knowledge to find solutions to the major societal challenges of today, such as climate change, mobility and healthcare."

WERE YOU
THERE?



Photos: Arjan Reef

DIES



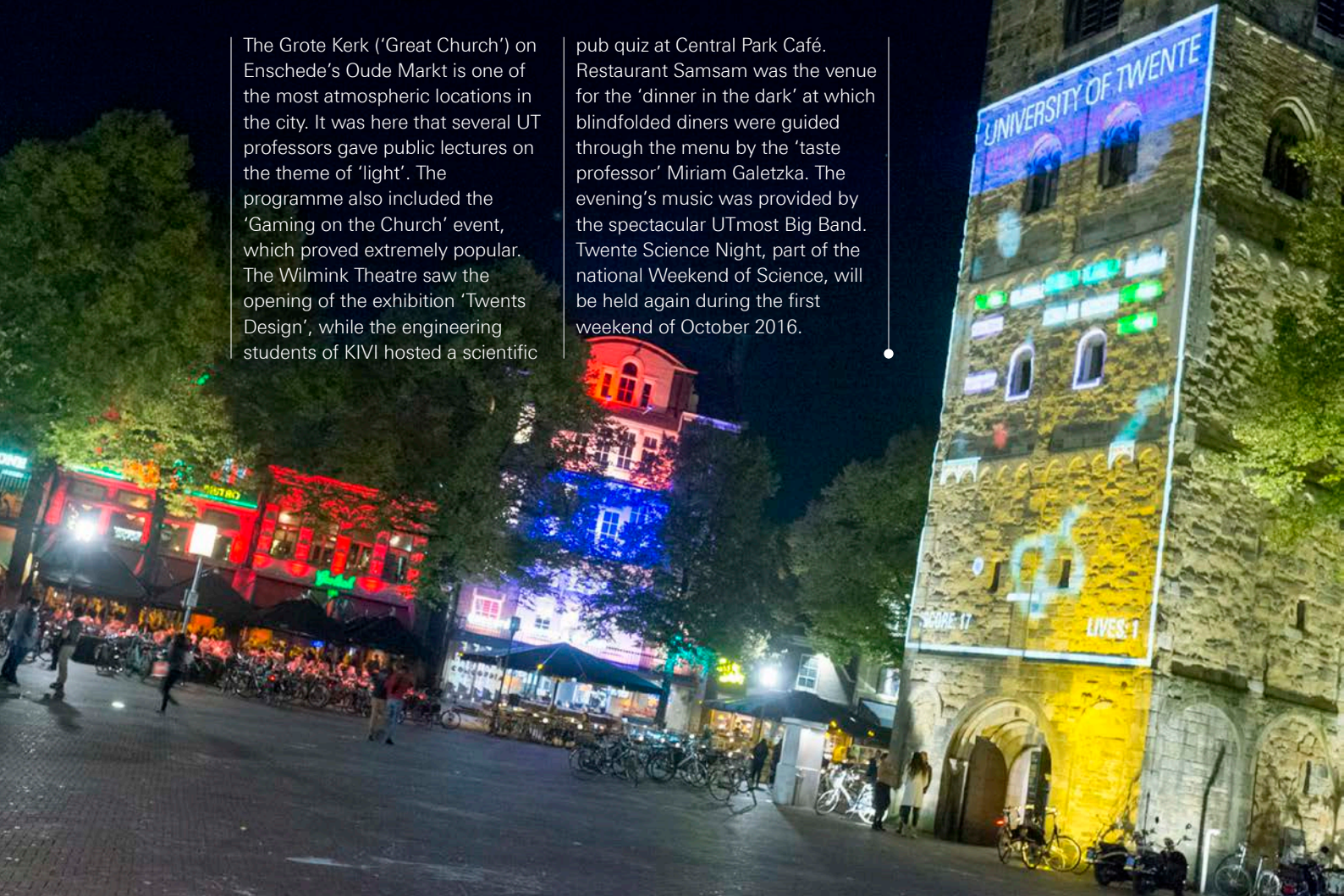
TWENTE SCIENCE NIGHT: CELEBRATE THE LIGHT

On Friday 2 October, Enschede's city centre came alive with creativity and inspiration at the first ever University of Twente Science Night. The UN designated 2015 as 'the Year of Light' so the theme for our event was 'Celebrate the Light'. TEXT Jochem Vreeman PHOTOS Gijs van Ouwerkerk



The Grote Kerk ('Great Church') on Enschede's Oude Markt is one of the most atmospheric locations in the city. It was here that several UT professors gave public lectures on the theme of 'light'. The programme also included the 'Gaming on the Church' event, which proved extremely popular. The Wilmink Theatre saw the opening of the exhibition 'Twents Design', while the engineering students of KIVI hosted a scientific

pub quiz at Central Park Café. Restaurant Samsam was the venue for the 'dinner in the dark' at which blindfolded diners were guided through the menu by the 'taste professor' Miriam Galetzka. The evening's music was provided by the spectacular UTmost Big Band. Twente Science Night, part of the national Weekend of Science, will be held again during the first weekend of October 2016.



During the official opening of the academic year, Anne Buningh, president of the Student Union, gave a speech in which she called for students to be more active in all aspects of student life, particularly in this era of high expectations and increased study burden. "If Twente wishes to remain the Entrepreneurial University, it must also become the University of Activism," she suggested. "Students must be encouraged to pursue more than a degree certificate."

TEXT Lidewey van Noord PHOTOS Gijs van Duwerkerk

UNIVERSITY OF...MORE THAN A DEGREE

What does the Student Union mean by 'activism'?

"We regard UT as 'the university of more than a degree' and activism relates to anything you do over and above actually studying. We want students to take an active part in all aspects of campus life, to organize their own activities, join a committee or take on one of the many interesting student jobs which will enable them to make a real contribution to the student community."

Why is this so important?

"A degree certificate alone will not get you very far in today's society. It has become more or less a minimum requirement. Employers see you as 'high potential' only if you have achieved top grades, have spent some time studying abroad and have gained some practical experience, either in a part-time job or by running student activities. These are the new selection criteria. Companies expect a lot of recent graduates. You will increase your chances of a good job if you develop not only professional knowledge but also the associated 'soft skills', such as teamwork, organization and planning. We must remember that today's students, myself included, are all part of Generation Y. We have been brought up to believe that we have

everything we need to succeed, and that if we don't succeed it is entirely our own fault. It can be difficult to live up to the expectations and you are often afraid to make mistakes. The pressure has been increased yet further by the study funding arrangements and the new Twente Education Model. If you choose the wrong course or fail any of the modules, the consequences are more serious than they were just a couple of years ago. Today's generation is afraid to make mistakes and therefore tend to 'play it safe'. By giving students more opportunity to experiment, to take risks and to think outside the established frameworks, the university will encourage them to be more enterprising and to show more daring."

You see activism as a 'unique selling point' of Twente. Why?

"Society is very individualistic, but here at UT the opposite – collectivism – is the rule. We do almost everything in groups, which not only creates a vibrant student life but teaches people that they do not have to excel as individuals. You can actually be much stronger by working together. Many people do not realize that this is a unique aspect of studying at our university."



"Studenten moeten ondernemender zijn en meer lef tonen"

Where can you attend lectures about journalism, civil rights, the melting of the polar ice caps and our perception of time, all in one and the same week? At the University of Twente, of course. These were just some of the topics discussed during the Week of Inspiration. TEXT Lidewey van Noord PHOTO Eric Brinkhorst

DAILY MEDICINE FOR TODAY'S THINKING

One of the lectures during the Week of Inspiration was given by leading journalist Rob Wijnberg, whose talk attracted an audience of some four hundred people. The topic was very much in keeping with this year's theme: 'Foundations of our life.' After all, news does play a very important part in our daily lives. As Erik Kemp, chair of the Week of Inspiration committee, explains: "There are certain fundamental topics which affect us all. During this event, we invite experts to talk about them." Wijnberg is certainly an expert in his field. With the support of crowdfunding, the former editor of nrc.next has established his own online newspaper, De Correspondent, which describes itself as "daily medicine for today's thinking".



Focus

We must take a different approach, Wijnberg asserts. The 'traditional' presentation of news encourages a certain way of thinking, and we actually consume far too much news, he says. News is always about events that are out of the ordinary, the exceptions to the rule. If you view the world solely through the news, you'll never really understand the world at all. Moreover, journalists are always looking for an 'angle' – a reason to present a certain story here and now. As a result, we see only snapshots, never ongoing developments. The news tends to confirm the status quo, since the focus is on what is going wrong. Events are depicted as something negative: there is little or no

attention for progress. We are told that the government is ineffective; we hear about failings such as the technical difficulties that beset the Fyra high-speed train. Rarely do we hear anything about government investments that have been the driver of unimaginable technological and economic progress in recent decades. Through De Correspondent, Wijnberg does not wish to report events but to present insights as newsworthy in their own right. Its journalists are not generalists but are experts in their field. All are fascinated by the topic they write about. They study developments over time, regardless of what might be happening in the world on any given day.

Experts

Wijnberg's lecture was followed by a lengthy audience discussion. "The experts we invited to speak have something socially relevant to say," states Erik Kemp. "In most cases, their field of expertise complements education at the University of Twente. Alex Brenninkmeijer gave a lecture on civil rights, while Frans-Jan Parmentier talked about the melting of the polar ice caps. It is worthwhile for all of us to learn more about these topics regardless of the discipline you are studying." Kemp believes that events such as the Week of Inspiration add an extra dimension to studying at the UT. "It is good that a university which focuses on technology also enables its students to attend these types of lectures. I am pleased to be playing my part."



THEO TOONEN, THE NEW DEAN OF BMS

“All technological development involves people”

Theo Toonen (b. 1952) was recently appointed dean of the Faculty of Behavioural, Management and Social Sciences (BMS), and professor of institutional management, international comparison and theory. He held the chair of Governance Studies at Leiden University from 2003 to 2008 and he comes to the University of Twente from the TU Delft. Toonen was a co-founder of the Netherlands Institute of Government, and a member of the national Advisory Council on Water chaired by Prince Willem-Alexander. In the USA he worked alongside Elinor Ostrom, who in 2009 won the Nobel Prize for Economics for her work on economic governance.

THE BEST OF BOTH WORLDS

Theo Toonen has been a dean and professor at the ‘traditional’ university of Leiden and at the technological university of Delft. The deanship of the new faculty in Twente combines the best of both worlds. “I regard the essence of technology to be its application. That is the human component.” TEXT Hans van Eerden PHOTO Rikkert Harink

Theo Toonen has been dean of the Faculty of Social and Behavioural Sciences at Leiden University and of the Faculty of Technology, Policy and Management at TU Delft. "At Leiden I was at the helm of a social sciences department in a 'traditional' university. Delft, by contrast, is a university of technology that trains engineers. At Twente, I can combine both fields, which means I could have the best of both worlds." Prof Toonen uses the word 'could' deliberately. The new faculty of Behavioural, Management and Social Sciences (BMS), the result of the recent merger of two faculties, is still very much in development. "We must achieve greater cohesion, certainly in terms of research. But the challenge of integrating social sciences with the exact sciences is one which greatly appeals to me."

Applied technology

"Many people talk about technology as if it is purely a question of engineering, the nuts and bolts as it were. For me, the essence of technology lies in its application: that is its human component. This is why every self-respecting university of technology needs a faculty of social and behavioural sciences. Without Steve Jobs there would be no iPhone. Without an adolescent interest in the opposite sex among the founders of Facebook, there would be no social networks. And without the desire of Estonian students to be free of Russian control, there would be no Skype. Every technological development has a very marked human component."

Institute

A broad-based faculty such as BMS enables the university to combine exact and social sciences in a way that is fully integrated from the outset, rather than social interests being 'tacked on' later by means of a statement of ethics or an accessible handbook. It is only logical that the faculty's research will

seek points of convergence with that of the technological research institutes: MESA+ (nanotechnology), MIRA (health) and CTIT (ICT). Toonen sees the Institute for Innovation and Governance Studies (IGS) as the faculty's prime strategic partner. "The social scientists involved in education have limited time for research. The two activities must be integrated so that time and capacity can be used as efficiently as possible, which means that the institute and the faculty must work closely together."

Healthcare systems

Theo Toonen is pleased that the discussion about UT's organizational model (the renowned matrix of institutes and faculties) has been reopened. "IGS is already moving towards the new faculty and is devoting attention to the themes which are important to the university as a whole." He aspires to becoming interim scientific director of IGS. "Other institutes are working on health technology, so our research must look at healthcare systems. New technology will change the entire healthcare system beyond recognition, including its governance and the role of the people involved, for both care providers and patients. This is something to which neither MESA+ nor MIRA has yet devoted attention, or indeed anyone else in the Netherlands. This type of research and the associated education is appropriate to our university, and above all to BMS."

New textile industry

Toonen cites three other domains in which the type of research envisaged by BMS can help to resolve the 'grand societal challenges': the safe, secure and vital city; education and learning (21st century skills), and technology and fashion. "We can see the city changing under the influence of

technology. Areas such as logistics, the energy transition and healthcare have a mutual dependency. In healthcare, the trend is towards small hospitals or care at home. In energy, the trend is towards localized and 'smart grids'. How can we ensure that these trends remain compatible, and that there is always a secure and reliable power supply?" The professor's attention for technology and fashion is further to his belief that a university must maintain close ties with its surrounding region. In the past, Twente had a flourishing textiles industry. Today, new high-tech materials and production technologies (such as 3D printing) open up possibilities for a new textiles industry. "Our research could support the creation of new and sustainable employment models," he suggests.

"The institute and the faculty must work closely together."

Societal impact

Theo Toonen likes to use the term 'inclusive engineering'. "It establishes the links between pure technology and the social or behavioural sciences," he explains. Asked what impact our university should have, he replies: "Engineers must consider the societal effects of their work. The UT was the first to profile itself as a 'entrepreneurial university'. Every other institute now does so. But there is more to the equation than entrepreneurship. We must think about how healthcare is being transformed, or education, or teacher training. It is all about the societal impact."

OD308

OLDENZAALSESTRAAT 308

I arrive during dinner. Plates of chicken tandoori are on still on the table of the 'pantry'. This is not a large room, but a long table and two settees have somehow been crammed into the limited space. There is even a fridge with a television perched on top. Once the plates have been hastily tidied away, we begin an earnest conversation about coffee. TEXT Lidewey van Noord PHOTOS Rikkert Harink

We eventually decide that five cups are needed. The noise of a grinder suggests that a professional barista is at work. Nothing could be further from the truth. "How much water are you supposed to put in this thing?" someone asks. "There's a stripe for four cups and one for six, but there's no stripe for five cups." "They're first-years," explains Paul Schilte. "They have a lot to learn." At 20, Paul is the senior of the group and has lived at OD 308 since 2013. The first-years in question are Jari Buter (18) and Jesse Schaeffer (19). The other residents are Simon Kloet (20), who has been here since 2014 and Rob Hardeman (21), here since 2013. OD308 is not just any student house: it is the oldest student house in Enschede and will celebrate its fiftieth anniversary in 2018. In the early days of the university, all students were required to live on campus. When that rule was abolished, six young students set up OD308 together. They included Jan Dopfer of the 1964 intake.

Many of the former residents are still in touch with each other. "We lost contact for a while but about ten or fifteen years ago the first three generations started to organize little reunions," Jan told me. "We meet up for a drink or something to eat. Recently, a group of us spent three days with one of our former housemates who now lives in Frankfurt." The long history of the house is celebrated in the hallway, where there is a gallery with photos of all residents since 1968, complete with names and years, extending along one wall and up the stairs. Also on display are the original documents that founded the student house. At the top of the stairs is another reminder of a bygone age: a severely charred old-fashioned telephone, its plastic casing melted and deformed. "There was a fire: the phone only just survived," explains Rob. The cause of the fire was never established. "Some say it was due to an electrical fault, while another theory is that the residents were having an indoor barbecue."



On Mondays, all residents eat dinner together and then move into a shed in the spacious garden, named 'De Grod', for a few drinks. Inside, the walls are covered in old exam papers. "Why buy wallpaper when you can get these for nothing?" Exam papers seem to be something of a theme, since there is also a filing cabinet full of them in Simon's room. There are various other documents too, including a doctor's note. Exactly why it has been kept is another mystery. There is no logic to the 'filing' system.

Rob occupies the largest room, which is around four times the size of the pantry, or big enough to accommodate a vast array of fitness equipment. One wall is completely mirrored just like a real gym. "I was doing my squats here only this morning," Jari tells us. The other large room is in the attic and is occupied by Paul. It used to be two rooms but the dividing wall was removed on the orders of the fire inspectors. Paul's

room looks out of place compared to the rest of the house, which is relatively tidy. The kitchen is exceptional. Most student kitchens seem to be there for the convenience of the mice and fruit flies but not OD308. It exudes hygiene and order. Paul's room more than makes up for the omission. "It's so big I don't have to tidy up," he explains. "I can still move around and I know where everything is. I don't understand why people expect me to put my laundry away in the cupboard. It's fine on the floor." I daren't ask whether he means his clean or his dirty laundry!



If you would like your (former) student house to feature on facebook.com/AlumniUT, please contact alumni@utwente.nl

HUMANITARIAN AID IS MY MOTIVATION



“Eigenlijk maak ik een snapshot van een ramp”

Dita Anggraeni (36) grew up and studied in Java, Indonesia. Little did she imagine that she would one day be working at the United Nations in New York. “It really is my dream job. Of course, New York is a very competitive environment full of ambitious people. I sometimes have to work very long hours and at weekends too. But the fact that my work helps people who are in real need gives me tremendous motivation.”

TEXT Lidewey van Noord PHOTOS Paolo Palmero

Dita Anggraeni is an Information Management Officer with the UN’s Office for the Coordination of Humanitarian Affairs (OCHA). She writes and designs information to highlight the situation in areas that have been affected by a disaster or crisis. “I make a sort of ‘snapshot’ of a disaster, such as the recent earthquake in Pakistan. I present and explain what has happened, how many people have been affected, and what is needed in the area: food, water, medicines and so forth.” Dita also contributes to a platform that publishes data about humanitarian aid for a wider public.

The course of Dita’s career was largely determined by a single event: the tsunami that struck Indonesia on 26 December 2004. Earlier that year she had completed her degree in oceanography at the Bandung Institute of Technology. “One of our professors was an expert in tsunami modelling and I learned much from him. At that time, there were very few people in Indonesia who actually knew what a tsunami was.”

The Aceh region of Indonesia was particularly hard hit and there was much demand for humanitarian assistance. Dita spent two years working there. “I gained much practical experience on this enormous operation which involved

Somalia: Humanitarian Snapshot, March 2014 | Issued on

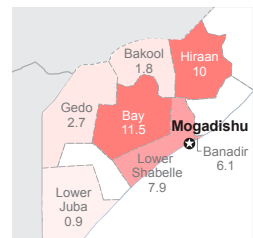
The military offensive by the Somali National Armed Forces and the African Union Mission in Somalia in southern and central Somalia began one month ago. Since then, six regions have been directly affected. The offensive has so far led to the temporary movement of over 40,000 people. This is against a backdrop of 2.9 million people who need immediate life-saving and livelihoods support. Somalia continues to be one of the most volatile and operationally challenging environments for humanitarian workers. Humanitarian partners require improved security, access and flexible funding to effectively assist people in need.

POPULATION MOVEMENT

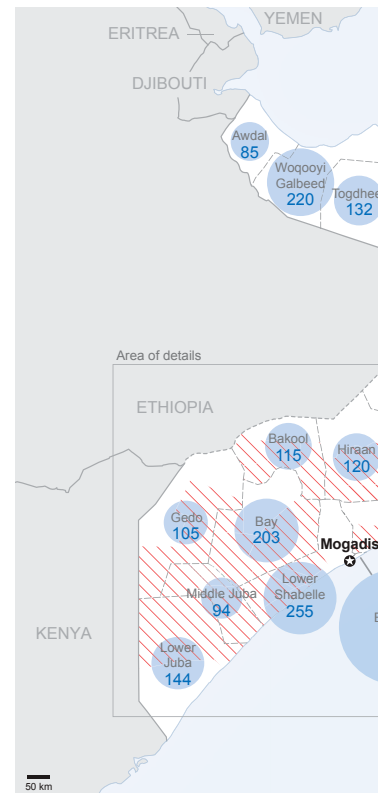
▲ - 41,000 people are temporarily displaced*

The offensive has directly affected six regions in south and central Somalia.

of population movements by region (in thousands)



The boundaries and names shown and the designations used on this map do not imply official endorsement or acceptance by the United Nations. Creation date: 15 Apr 2014 Sources: *UNHCR (as of 9 Apr 2014), †FAO/FSNAU, ‡FEWSNET, ††TS (as of 15 Apr 2014).



ANNIVERSARY AGENDA

15 April
Alumni Day

Summer (dates to be confirmed)
Apollo Music Theatre
Student Union Front Room Festival

15-22 August
CuriousU

5 September
Opening of the Academic Year

30 September
Twente ScienceNight

21-25 November
Week of Inspiration

25 November
DIES Natalis

Further information:
www.utwente.nl/evenementen

The UNIVERSITY OF TWENTE is a modern, enterprising research university. We work to develop the technologies that will define the future of ICT, biotechnology and nanotechnology. We are already acknowledged as world leaders in several areas. We approach new technology in the context of its relevance to society, applying insights from the social sciences and management disciplines. The combination of 'high-tech' and 'human touch' is extremely important to us. We are known for a design-led approach that addresses the needs of the private sector, and for the creation of new, innovative companies. We work on groundbreaking solutions to the major societal issues of the day, such as energy scarcity, sustainability, safety and security, and health. The University of Twente has over 3,000 staff, more than 9,600 students, a network of 40,000 alumni and some 800 spin-off companies.

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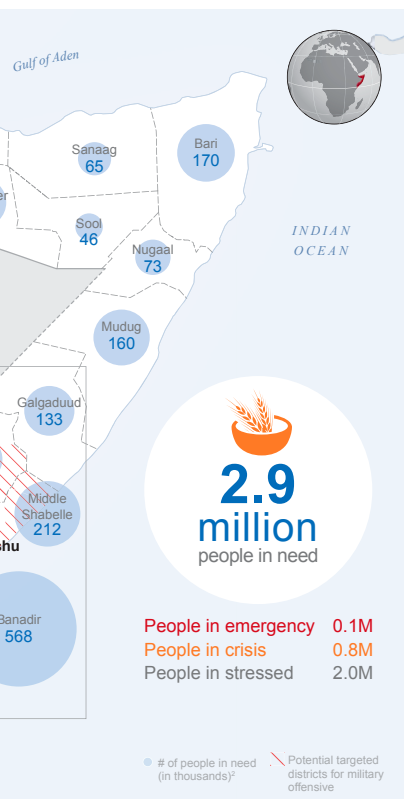
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15 April 2014



IMPACT ON LIVELIHOODS

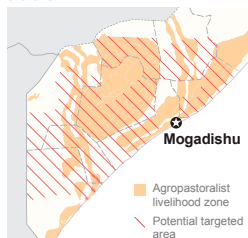
If the Gu season performs well, the offensive may not have significant impact on production. However, there is need to be cautious and monitor development especially if there is restricted access to market and livestock movement.



203,000 children are estimated to be acutely malnourished

25% of these children are severely malnourished

Most of the agropastoralist livelihood zones are in the potential targeted districts for the military offensive.



FUNDING

Somalia CAP is only 12% funded and \$822 million is still needed to fund the humanitarian activities in Somalia.*

US\$933 million requirement

12% funded (\$111 million)

OCHA, UNCS, UNDP Feedback: ochavisual@un.org www.unocha.org www.reliefweb.int

experts from all parts of the world. I had the opportunity to work alongside many committed people from various international organizations such as the Red Cross."

Dita went on to work with an aid organization in Jakarta and was awarded a scholarship to take a master's degree in Geo-information Science and Earth Observation at UT. "I spent a year in Enschede where I learned so much, especially about natural disasters and GIS technology. This master's programme proved a very strong foundation for my subsequent career. It has enabled me to work at an international level."

SPIN-OFF

EUREKA: FLEXIBLE CERAMIC

TEXT Hans van Eerden PHOTO Kees Bennema

In the world of football, Barcelona is in the Champions League while FC Twente is rather less well known. In the world of science, the roles are reversed. Gerard Cadafalch is an international student from Barcelona. At the University of Twente he feels that he has reached a champions' league in terms of research level, facilities and opportunities for spin-offs. Working at MESA+, he developed a new flexible ceramic material named Flexiramics. He also met Bahruz Mammadov, who left his job in an Azerbaijani goldmine to explore the world and study nanotechnology.

Mammadov convinced Cadafalch to join him and their professor, André ten Elshof, in setting up a company to market their remarkable new material. They have called their UT spin-off Eurekite, because the material (an '-ite') has been responsible for many 'eureka moments' as its unexpected thermic, mechanical, electrical and catalytic properties became apparent. Flexiramics is likely to find many applications, from innovative oil and gas sensing equipment to better batteries. The Cottonwood Euro Technology Fund recently invested one million euros in further research and development. "Cottonwood has also provided coaching and access to an international network," Cadafalch says. "And Kennispark Twente is helping us with the marketing strategy."

The six-strong Eurekite team is now working towards production on an industrial scale. The very first application will be flexible print plates. Many modern high-end electronic products demand special print plates and Flexiramics offers significant advantages compared to conventional solutions. In early 2016, Eurekite will relocate from the UT campus to its own business premises. But it will stay in Enschede because Cadafalch and Mammadov appreciate the high-tech, entrepreneurial climate that Twente offers.



"The new gold mine is a nano-mine!"

Further information:
www.eurekite.com

UNIVERSITY OF TWENTE.