‘Looking for the institutional conditions needed for a ‘good society’”

Bas van Bavel
Professor Transitions of Economy and Society

Utrecht University
Teamwork for a better world

Bert Weckhuysen is a top scientist in Anorganic Chemistry and Catalysis. His and his team’s work has already resulted in a large number of grants, top publications and scientific breakthroughs. Bert is also keen to use his knowledge and abilities to innovate our teaching. With the Da Vinci project he is challenging students from a wide range of specialisations to come up with solutions for topical issues, such as how to collect plastic waste more efficiently.

This is a great example of all that Utrecht University stands for: interdisciplinary teamwork for a better world, with a powerful cross-pollination between research and teaching. All the students who want to take part in the course make a film in which they present themselves and pitch the problem they are aiming to tackle.

The team of lecturers then matches these and other highlights with the government, business sector and universities work together on such projects as making more sustainable paint, or ways in which CO₂ could be used as a new raw material to make plastic and fuel. Being able to make the use of carbon circular would represent a huge step forwards in tackling climate change.

Only recently we as the Executive Board paid a working visit to the new ARC-CBBC laboratory where we encountered young researchers in white lab coats with huge plans and contagious enthusiasm. While we were walking around, Bert explained that he also needs academics from the arts and humanities and social sciences. For him it is not only the technical discoveries that are important, but also ensuring that these discoveries are actually embraced by society.

This visit was a true highlight for us. But it was just one of many; time and time again we are amazed by the expertise with which students and staff get to work and make new connections, at the heart of society, driven by curiosity. We are thrilled to share these and other highlights with you in this leaflet: highlights which sometimes leave us speechless and of which we can be rightly proud as Team Utrecht.

Anton Pijpers, Annetje Ottow and Henk Kummeling
The Executive Board

A ‘VIRTUAL SUPER-MARKET’ TO RESEARCH THE CONSEQUENCES OF BRAIN DAMAGE

In June, neuropsychologist Tanja Nijboer was awarded the Betto Deelman Prize for her research into innovative ways of detecting disorders in cognitive functions following brain damage. One of the ways she does this is by using a ‘virtual supermarket’ in which people with brain damage have to find and purchase items on a shopping list. “This is an excellent method for researching neglect – a condition where people ‘ignore’ part of their surroundings. We save all the data registered during the ‘shopping trip’, such as where and for how long someone stays standing still, or how long someone spends looking at a product. This provides information on the thinking functions of people with brain damage, including what grabs their attention or how well they remember things.” The Betto Deelman Prize is awarded annually by the Dutch Neurology Foundation.

RESEARCH INTO ONE OF THE MOST URGENT CHALLENGES WE ARE FACING

Utrecht University has designated four focus areas for research in which a total of 1.6 million euros will be invested in the period up to August 2023. In these research focus areas, researchers from various fields of study at Utrecht University will be collaborating to achieve academic innovation and social impact. The four research focus areas are working on higher education, the digital society, artificial intelligence and migration. The latter is being led by Dr Christoph Baumgartner and involves one of the most urgent challenges of the world today: global migration and the social and cultural changes that this brings – including the opportunities and possibilities offered by migration.

‘Games help people to become more socially engaged’

Remco Veltkamp
Professor of Game & Media Technology

The Week of the Game, organised by Utrecht University’s Center for Game Research in May was aimed at gaining a deeper understanding of games, gaming and the underlying technology. Professor of Game & Media Technology Remco Veltkamp: “Gaming has developed strongly in recent years. We are conducting research into how these technologies can be developed even further.” During the Week of the Game, the researchers and students focused on a range of games, from retro games such as Pacman and Super Mario to the very latest games and escape rooms. One of the lectures was on the possibility of re-experiencing the history of the city of Utrecht by means of a journey through time using new digital technology.
This year the Netherlands Initiative for Education Research (NRO) awarded three Teaching Fellowships and three Senior Fellowships to lecturers at Utrecht to facilitate educational innovations. One of these is ‘Encounters in the Field. A playful approach to the development of intercultural competences’ by Gery Nijenhuis. Her project is aimed at improving students’ intercultural competences using an interactive app with real-life cases from students who carried out fieldwork earlier. Lecturers guide the students in international groups in their discussions and reflections before, during and after the fieldwork.

‘My goal is to train the biologists of the future’

Margot Koster
Lecturer in Biology

In May of this year, winner of the 2018 Lecturer Award Margot Koster made it to the final of the competition for national Teacher of the Year organised by the ISO student union. Koster is a perfect example of the passionate and accomplished lecturers at Utrecht University. Students praise her personal approach and call her a ‘natural-born leader’. Margot: “It’s easier to learn in an environment you’re comfortable in.” She puts the student first, uses a range of teaching methods and constantly raises her teaching to a new level. “To keep pace with society and research, it’s important to continuously develop your teaching, your students and yourself.” Koster involves society in her teaching and integrates the latest trends in academic research, such as an interdisciplinary approach and new ways of data processing.

‘Encounters in the Field’ by Gery Nijenhuis

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Margot Koster
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Each year, Utrecht University makes funds available for innovative projects that contribute to the development of academic education. One of the five interfaculty projects selected this year, is ‘TIC TO TIC: Thematic Interdisciplinary Challenge TO Teach, Inspire and Change’ by Mariet Hefting. The project is intended to develop a university-wide course concept in which Bachelors, Masters and Life-long-learners (cross-level learning) from different disciplines work together on innovative solutions for questions from social partners.

Students doing field work at Learning Lab Overvecht
‘Our research reveals previous unnoticed physical processes in the Mekong Delta’

Philip Minderhoud
Physical Geography researcher

Together with Vietnamese counterparts, Utrecht University researchers have discovered that the Mekong Delta, the third largest delta in the world, is sinking much faster than sea level is rising. This acceleration is predominantly caused by the strong increase of groundwater exploitation. Sinking rates can reach more than five centimetres per year. And with the delta’s average elevation being less than a metre above sea level, large parts may sink below sea level within decades. “Our research reveals previously unnoticed physical processes in the Mekong Delta, creating an awareness of the urgency of the situation. These new insights form the basis for working towards solutions,” Geoscientist Philip Minderhoud explains.

"By 2050, we will need to produce seventy percent more food if we are to keep feeding the world population, which is estimated to be some 10 to 11 billion people by then.” So says Professor in Biology Rens Voesenek, head of the Future Food hub. Some 150 researchers in Utrecht are involved in finding solutions to this enormous challenge. “In particular the threatened food shortage is a major challenge. We will have to produce more food, but at the same time we want to do this as sustainably as possible.” Voesenek’s own research addresses the question of how we can make plants tolerant to fluctuations in weather conditions, such as heat, drought and flooding, caused by climate change.

The Mekong River Delta in Vietnam

IS A FAIR ENERGY TRANSITION POSSIBLE?

Utrecht University and Eindhoven University of Technology are joining forces to study how a fair energy transition is possible. Together, the universities are well equipped to study the complex inter-relationships in terms of the external, economic, social, technological, moral and political implications. “How we manage the energy transition may well determine whether different regions of the world will live peacefully together or compete, possibly violently, for scarce natural resources,” says Professor Marcus Düwell, Director of the Ethics Institute of Utrecht University. Relevant methodological tools for integrative assessment are going to be developed. Interdisciplinary topics on a fair energy transition are also being introduced in educational programmes at both Eindhoven and Utrecht. In addition, the consortium is going to address the urgent requests of policy makers for more integrative approaches to assessing energy transitions operating in both national and international contexts.

THE FOOD PROBLEM IS OF SUCH A MAGNITUDE THAT IT CAN’T BE SOLVED BY ANY SINGLE DISCIPLINE

UU.NL/MEKONGDELTA

UU.NL/SUSTAINABILITY

Contributing to a sustainable future by means of trans-disciplinary research. Researchers from the humanities, social and natural sciences work together with external partners to develop a more sustainable society.
Researchers from different disciplines integrate their expertise to answer crucial questions for future generations. How can we help our children develop into balanced individuals, that are able to function successfully in a rapidly changing environment?

Children’s language surroundings are an extremely important factor in language development. This was made clear by Professor Elma Blom in her inaugural lecture at the start of the year; she works on language development and multilingualism at home and at school.

For optimum language development, the role of parents, the babysitter, pedagogical employees and teachers should not be underestimated. Blom: “They share the responsibility for children’s language development. A less successful language development is a factor that can threaten public health, because that has serious consequences for children’s developmental opportunities.”

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PROVISION OF LANGUAGES CRUCIAL TO CHILD LANGUAGE LEARNING

In her research, youth researcher Elisa Duinhof confirms that Dutch youth are doing well: according to Duinhof they experience relatively few behavioural problems, emotional problems and problems with peers. However, one result did surprise her: “Of all the youngsters, the Dutch youngsters turned out to experience hyperactivity the most often.” We can only guess at a reason for this. “It could be that Dutch youngsters report it more often because they are more familiar with it than their peers in other countries are. Or the Dutch youngsters have a lower threshold for reporting this type of problem.”

‘Children who can forgive score higher on personal well-being’

Reine van der Wal is researching how children deal with parental divorce. She argues that in many cases children do blame the parent for the conflict, but that it is important in the long run that children take action for themselves. Forgiveness can be a way out in this. Van der Wal: “We think it’s probable that children who are able to forgive the parents and put the conflict behind them score higher on personal well-being.”

Dutch youngsters relatively often report hyperactivity

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In Utrecht, a dog has been fitted with a new 3D-printed skull roof following the removal of a tumour. It is the first time that an operation of this type has been performed in Europe. The operation and use of the material is part of a larger study in which the Faculty of Veterinary Medicine and Faculty of Medicine at Utrecht University are collaborating. Veterinary surgeon Professor Bjorn Meij, is delighted with how the operation went and the dog’s subsequent recovery: “One of the main advantages of 3D printing of a skull roof is that it can be tailored perfectly to the individual, and a porous titanium edge can be printed. This edge allows the bone to grow into the implant so it becomes integrated into the skull.”

Researchers at Utrecht University have demonstrated how the pathogenic Salmonella bacteria takes advantage of one of the body’s defence mechanisms in order to invade cells. The researchers, led by infection biologist Dr Karin Strijbis, discovered that Salmonella takes advantage of defensive ‘mucins’ in order to invade intestinal cells and start an infection. This discovery marks an important step towards developing new medicines to prevent Salmonella infections. “These results came as a complete surprise, as we had thought that MUC1 would actually offer protection against a Salmonella infection,” Strijbis explains.

Researchers at Utrecht University have successfully created mini kidneys, so-called kidney organoids, from urine cells. A mini kidney from the lab doesn’t look like a normal kidney. But the simple cell structures share many of the characteristics of real kidneys, so researchers can use them to study certain kidney diseases. This could lead to a wide range of new treatments that are less onerous for kidney patients. Marianne Verhaar, Professor Nephrology and Hypertension, explains that she collaborates with medics, researchers and technical experts at a single location in Utrecht: the Regenerative Medicine Centre Utrecht. “Collaborating in this way has made a huge difference to our research. We hope that, together, we can improve treatments for kidney patients. In the long term, we hope to be able to use mini kidneys to create a real, functioning kidney – a tailor-made kidney – too. But that’s still a long way away.”

We are all the same, yet we are all different. A study published in Nature Microbiology reveals patterns of a virus that half the people in the world are carrying. The global collaboration of more than 100 scientists drawn from 65 countries focuses on crAssphage, a virus that feeds on human gut bacteria. This new research shows why crAssphage has been so widespread. In the paper, the team (which includes Assistant Professor Bioinformatics Bas Dutilh) provides evidence that crAssphage has been with us since the dawn of humankind. They show that it is not associated with human disease, providing an explanation as to why it has not been eradicated from the population.
Within this research theme, research is conducted on the formal and informal rules (institutions) of human action. Why do societies develop so divergently? And how do institutions contribute to the formation of open and sustainable societies?

Utrecht University and Rabobank launched the Better Well-Being Index (BWI) 2019. This index is an integral indicator that provides insight into the development of broad-based prosperity in the Netherlands. For the first time, the broad prosperity of the Netherlands is at a higher level than it was just before the economic crisis. It is striking that with increased prosperity, the environment has come under further pressure. "Climate debate in the Netherlands should not be conducted separately from current levels and distribution of material prosperity," says Tanja van der Lippe, Professor of Sociology.

Economic historian professor Bas van Bavel has received the NWO Spinoza Prize. The award comes with 2.5 million euros and is the highest scientific distinction in the Netherlands. Van Bavel is one of the world’s foremost experts in the area of socioeconomic history. His research is driven by the question of how societies develop in the long term and how differences in their development can be explained. Van Bavel looks beyond the boundaries of his own discipline and collaborates with economists, sociologists, political scientists, ethicists and others.

"Your boss should no longer pay you just for your time spent at work, but also for the data you generate." This is one of the out-of-the-box ideas of a European High-Level Expert group presented to the European Commission last spring. The High-Level Expert group of experts from industry, government and science was led by Maarten Goos, one of the prominent academics of the Future of Work Hub of Utrecht University. At the Hub, scholars from diverse disciplines study the future of work and its impact on individuals and society.
Sustainability at Utrecht University in 2018
A visual selection of highlights from the 2018 Annual Sustainability Report.

Sustainability in education:
- 9 Master's degrees
- 377 graduates

Gas consumption:
- 85% energy efficient

More than half of our employees cycle to work:
- 57%
- 20%
- 18%
- 5%

We are measuring local biodiversity with indicator species:

The presence of three species of birds (the little owl, the kingfisher and the lapwing) is an indicator of nature on campus: they only appear if there is enough vegetation, if there are lots of insects and if the soil is fertile.

Utrecht University Green Office supported 18 specific experiments in which researchers collaborated with employees and students to look for solutions to sustainability issues.

Utrecht University has a power plant on the campus which efficiently converts 20 million m³ of natural gas into heat and electricity for its own use. Natural gas makes up 58% of Utrecht University's carbon footprint.

The campus is home to a lot of old buildings. The University is committed to making them more sustainable. To do this, we are working in line with BREEAM certification standards. Achieving an 'Excellent' rating from BREEAM proves that our buildings are future-proof.

Read the full 2018 Annual Sustainability Report at UU.NL/SUSTAINABILITYREPORT
‘Alumni are standing with one foot in the world and the other firmly anchored in our wonderful university’

Jan Beuving
Alumnus of the Year

“I never dreamt that I would be awarded another academic title.” With these words, cabaret performer Jan Beuving received the honorary title of Alumnus of the Year during the 383rd Anniversary Day celebrations. That Beuving studied mathematics is evident in everything he does “right down to the squared pattern on the shirt I’m wearing.” In his performances, he makes complex science accessible to a wide audience. His high profile, ambassadorship and passion make an important contribution to the ambition of our university to connect science and society.

Prior to our Anniversary Day – the Dies Natalis – in March, around 100 alumni, partners from the Utrecht region and Utrecht University staff came together to discuss Lifelong Learning. Topics such as linking teaching and research, teacher shortages and collaboration with professional organisations were addressed in a series of round table discussions. During the celebration on the day itself, rector Magnificus Henk Kummeling noted that it is clear to the Executive Board “that teaching within the context of Lifelong Learning should be a standard task of lecturers and not something that has to be done in addition to the existing package of duties.”

The Dies Dialogue is an annual event with a different theme each year.

The European Commission has selected the ‘Charm-EU’ proposal that was submitted by Utrecht University together with Barcelona University, Trinity College Dublin, University of Montpellier and Eötvös Loránd University Budapest. The Charm-EU network focuses on interdisciplinary, challenge-based education. “We want to offer students a broad, internationally oriented education, and prepare them for the labour market. I regard this new European Alliance as a way to strengthen these efforts,” Sector Magnificus Henk Kummeling says. Charm-EU should make it possible to follow flexible study paths, both online and physically. For example, students can follow courses at a partner institution within the network, if the expertise is there. In this way, students will be able to become critical thinkers and committed European citizens.

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Early this year, Associate Professor Hester den Ruijter (experimental cardiology, UMC Utrecht) was presented the second Agnites Vrolik award. She received the prize from the Utrecht University Fund for her research on cardiovascular disease in women. This was not the only memorable event on this special evening, because it also saw the founding of Utrecht 1636, a circle of loyal donors with a particular commitment to Utrecht University. Members of Utrecht 1636 donate a minimum of 500 euros per year to the Utrecht University Fund and so contribute to research, teaching, student facilities and the preservation of academic heritage.

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During the Anniversary Day celebrations in March, the initiators of Inclusion, Marij Swinkels, Hilke Grootelaar and Elena Valbusa, were presented with the Silver Medal by President of the Executive Board Anton Pijpers. The medal is awarded to people who have performed an exceptional service for the university. Since 2016, Inclusion has been facilitating academic education for refugee students and by now more than 400 refugee students have participated. The founders’ underlying philosophy is that education offers refugees the chance to build a new future. The Inclusion concept has since been adopted by other universities in the Netherlands and beyond.

Utrecht University has a zero-tolerance policy towards any form of inappropriate behaviour. In 2019, the university is paying extra attention to this issue. To start with, the code of conduct and complaints procedure have been brought up to date. Secondly, the provision of information about inappropriate behaviour has been improved, so that staff and students are more aware of the regulations and procedures and they know that they can contact Confidential Advisers if they want to talk about inappropriate behaviour. Finally, work is being carried out on an online training course with practical tips for supervisors and lecturers. Utrecht University wants all its students, staff and guests to feel safe and welcome.

Utrecht University is keen that everyone, whether able-bodied or disabled, should have the best possible access to the university grounds and buildings. In the existing buildings, any access-related problems are dealt with by the Corporate Real Estate & Campus and University Facilities Service departments, usually with success, although the historic buildings in the city centre provide more of a challenge. New buildings must conform to regulations concerning access. At the same time, the digital data on the buildings has been improved to provide at-a-glance information about reachability, accessibility and facilities per building.

Four Utrecht projects have been awarded funding to a total of around 9.25 million euros from the Dutch National Research Agenda. Utrecht University is also one of the academic partners for a fifth project (worth almost nine million euros). A special feature of this new funding is that it is used for collaborations between knowledge institutions and social partners, allowing them to examine urgent issues together. Other partners are also contributing funding, on top of the total of 61 million euros shared out by the Dutch National Research Agenda.

Henk Kummeling, Rector Magnificus at Utrecht University, is delighted with the awards to Utrecht. “We strongly believe that research is enhanced when it is conducted together with external partners.” The funded research is on subjects such as the risk of outbreaks of infectious diseases, treatment for children with autism, managing use of painkillers and being able to provide the precise form of care needed during pregnancy. Another example is a study on subsidence, for which some 5 million euros has been awarded. Groundwater extraction, heavy buildings, and water use for agriculture and in cities are resulting in subsidence, leading in turn to damage to crops, buildings, and infrastructure. Moreover, as sea levels rise and the land subsides, it becomes ever more difficult to keep out the water. The main question is how we can reverse our current approach to subsidence when the damage becomes too great. To tackle the issue, a wide range of disciplines such as physical geography, biology, soil chemistry, agro-economics, civil engineering, environmental policy sciences and the law are being brought together, with partners such as TU Delft, Wageningen Environmental Research, TNO, ministries, water boards and the business community.
Highlights is published twice a year to give Utrecht University’s Dutch and international contacts an impression of what has been achieved over the past six months. Utrecht University is a leading, international research university with innovative academic teaching programmes. Our education and research are characterized by our ground-breaking interdisciplinary approach. Thanks to this interdisciplinary approach and our culture of collaboration, Utrecht University is able to achieve innovation, new insights and social impact.

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