

MAGAZINE

OF HEINRICH HEINE UNIVERSITY DÜSSELDORF



CEPLAS
PLANT RESEARCH IN
DÜSSELDORF REMAINS
EXCELLENT

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Düsseldorf –
Space for innovation

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Photo: Ralf Zeigermann



Photo: Jana Momen

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Editorial



Photo: Ivo Mayr

Dear Reader

I am very pleased to be able to present to you what is meanwhile the 11th issue of our HHU Magazine with interesting reports on current projects and developments at Heinrich Heine University.

This year, international relations played a very important role on our campus stage. On 19 June, France Day took place at HHU, in which a large number of students and researchers but also French institutions participated in order to engage in networking and cross-border exchange.

I am particularly pleased that the event led to new cooperation with various faculties of the University of Strasbourg and, as a result, we can intensify scientific and academic exchange with France. An equally important role is played by HHU's relations with Japan: On 17 September 2018 the Liaison Office opened, which will function as a bridgehead between HHU and three Japanese universities. But it is our students who play the starring role at HHU! At the beginning of the new academic year, we were able to welcome 4,000 first-semester students who have decided in favour of our campus university and its broad syllabus, which has now increased by three new interdisciplinary and partly interfaculty

Bachelor programmes: 'Transculturality', 'Philosophy, Politics and Economics' and 'Natural Sciences'.

If you want to know what work will look like in the future, the role of quantum computers in this context, to what extent urban planning impacts on the art scene and how excellent the new Centre for Synthetic Life Sciences is and why, then please read our magazine! The current issue includes all these topics and much more besides.

This is my last issue as Vice-President for International Relations, since from March onwards I will be devoting myself more to research again. My successor in this office will further advance internationalisation at HHU - let us continue to work together productively at all levels!

I wish you a happy festive season and a peaceful New Year!

Yours sincerely

Professor Andrea von Hülsen-Esch
Vice-President for International Relations
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Start of lectures in the 2018/2019 winter semester

Over 4,000 new students at HHU

BY CAROLIN GRAPE

Over 4,000 first-semester students started at Heinrich Heine University on 8 October. This means that in the current winter semester a total of just under 35,000 students are enrolled. Professor Anja Steinbeck, HHU President, welcomed the 'freshers' in the Konrad Henkel Auditorium, HHU's largest lecture theatre: "Heinrich Heine, our University's namesake, and his life and works stand for tolerance, equality, freedom and an open attitude towards the world – values which do great credit to a university and its members." Due to the considerable interest, the event was transmitted live in several neighbouring lecture theatres.

"In the spirit of Heinrich Heine, one of our particular concerns is to encourage

you all to make your own independent and unprejudiced picture of political, economic and social developments," said the President in her address. "The University is the place where such responsible thinking is taught. It is an open space for safeguarding knowledge, questioning the present, concep-

Citizens' university

tualising diversity and teaching the courage for constructive creativity. In times where simple untruths are declared to be 'alternative facts' and scientific findings degraded to 'fake news', these competencies and the evidence-based search for truth are more important than ever!" Professor Stein-

beck called for students not only to engage in subject-related discourse but also to become involved outside their studies in some of the many activities organised on campus or by the City of Düsseldorf.

Her closing words: "HHU will do all it can to help you at the start of your studies. We're very pleased that you've chosen a vibrant campus university with lots to offer – often also beyond the boundaries of individual subjects!"

In the current winter semester, HHU has extended its curriculum to include three new interdisciplinary and partly interfaculty Bachelor programmes 'Transculturality', 'Philosophy, Politics and Economics' and 'Natural Sciences'. The last-mentioned programme combines topics from the following five subjects: Biology, Chemistry, Computer Science, Mathematics and Physics. These three new programmes have proved popular amongst new students and – as can be seen from enrolment numbers – met with an above-average response.

► Rebecca Wasinski from Düsseldorf University Radio (3rd from the left) asked questions related to commencing studies and studying in general at HHU and in Düsseldorf. Julia Uhlig, Chairwoman of the Students' Union, Professor Christoph J. Börner, Vice-President for Quality in Studies, Friedrich G. Conzen, Mayor of the City of Düsseldorf, Professor Anja Steinbeck, and Jutta Vaihinger from HHU Student Services provided competent answers in an informal and informative session.





▶ After the official welcome, the new students had the opportunity to discuss what they had learned in greater depth: All the University's central facilities with a wide range of advisory services were on hand to help them at an information fair in the foyer of the auditorium complex.

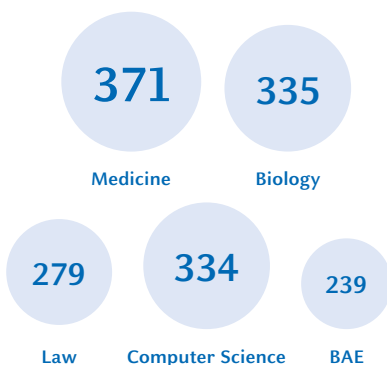


Photos: Andreas Endermann

2018/2019 WINTER SEMESTER: FACTS AND FIGURES

4,181

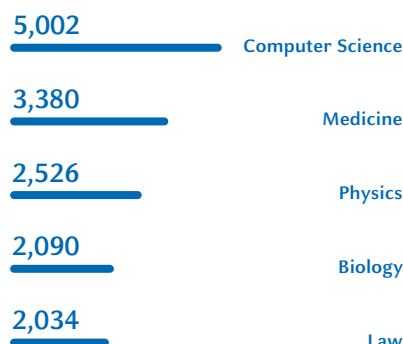
NEW STUDENTS IN THE WS 2018/2019



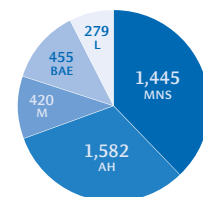
FIRST-SEMESTER STUDENTS

20,630 WS 2011/2012
34,969 WS 2018/2019

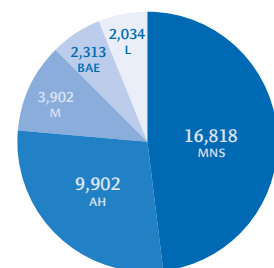
NUMBER OF STUDENTS



STUDENTS BY SUBJECT



FIRST-SEMESTER STUDENTS BY FACULTY



STUDENTS BY FACULTY

MNS=Faculty of Mathematics and Natural Sciences, AH=Faculty of Arts and Humanities, M=Faculty of Medicine, BAE=Faculty of Business Administration and Economics, L=Faculty of Law

As per: 6.10.2018

Strengthening cooperation with Japanese universities

First Liaison Office at Heinrich Heine University

A bridgehead for relations between Heinrich Heine University and three Japanese universities," is how Professor Shingo Shimada (Department of Japanese Studies) described the new Liaison Office. HHU's official partner in this context is Kanazawa University, but cooperation extends beyond this. Although the office is hosted by the Faculty of Arts and Humanities at Heinrich Heine University, it is nonetheless responsible for the whole university. Shigeki Ootake, Vice-President of Kanazawa University, Consul Shin-suke Toda and Vice-Consul Rumi Hasegawa from the Consulate-General of Japan were amongst the guests who attended the inauguration of the Liaison Office on 17 September 2018.

Kanazawa University in Japan, which has already been associated with HHU's Faculty of Arts and Humanities for many years, works closely together with the universities in Nagasaki and Chiba. This has major advantages above all for medical students: The alliance between the three universities opens up many opportunities to specialise in different fields and together they are responsible for a joint graduate school. In the past, HHU only maintained close relations with Kanazawa

University, but this partnership will now hopefully be extended to the other two universities through the new Liaison Office. At a first symposium in September, which took place especially at the initiative of Professor Hiroyuki Nakamura from Kanazawa, the guests from Japan met with representatives of the Faculty of Arts and Humanities and the Faculty of Medicine at HHU. Ideas for future cooperation took further shape

Identification of joint research topics

and especially the team led by Professor Heiner Fangerau (History, Philosophy and Ethics of Medicine) sought to identify common topics as a foundation for joint research work. On the occasion of the office's inauguration, Professor Andrea von Hülsen-Esch, Vice-President for International Relations, said: "Heinrich Heine University is now the contact address throughout the region for all matters concerning Kanazawa University." Bastian Nonnenberg, head of the Liaison Office,

previously taught for four years at Kanazawa University. "Our first joint research topics are 'Children and Environment' and 'Senior Citizens and Environment,'" he said and continued "the area of 'Public Health' also offers considerable potential for international cooperation." This research profile is the perfect match for HHU, firstly in the context of its social science-based Japanese Studies and secondly with regard to the area of 'Public Health' at the Faculty of Medicine. "We're planning to send one or two doctoral researchers to Japan next year," says Professor Shimada. In addition, a further symposium, this time in Japan, will further consolidate the partnership between the universities. V.M.

Photo: Mana Ikemoto



The research profiles of both universities are a good match. This became clear at the symposium to mark the inauguration of the new Liaison Office.

HHU PHYSICISTS PART OF CLUSTER OF EXCELLENCE ON QUANTUM INFORMATION PROCESSING

On the way to the quantum computer

Professor Dagmar Bruß and Professor Reinhold Egger, physicists from HHU's Institute of Theoretical Physics, are in charge of two sub-projects of the Cluster of Excellence "Matter and Light for Quantum Computing" (ML4Q), which the universities of Aachen, Bonn and Cologne have been awarded in the framework of the Excellence Strategy of Germany's federal and state governments.

The ML4Q project is concerned with quantum computers and networks. These are a key approach for advancing computer development in the future too because the logic so successful to date of achieving more performance through smaller and smaller semi-conductor structures and greater integration of components on computer chips is increasingly reaching its physical limits. "Quantum computers, which are based on the laws of quantum mechanics, will be able to increase computing power in the foreseeable future," says Professor Reinhold Egger from HHU's Institute of Theoretical Physics IV.

Different working principles

Because they work in a completely different way, these computers allow the scientists to tackle specific problems. As Professor Dagmar Bruß from the Institute of Theoretical Physics III highlights: "Quantum networks can make a major contribution to fast and above all inher-



Photo: HHU/Christoph Kawan

Professor Dagmar Bruß and Professor Reinhold Egger from HHU are in charge of two sub-projects in the new "ML4Q" Cluster of Excellence of the universities of Aachen, Bonn and Cologne.

ently secure communication." The universities of Aachen, Bonn and Cologne, together with Forschungszentrum Jülich, joined forces to submit a joint application for the "ML4Q" Cluster of Excellence, in the framework of which theoretical

Secure data communication

and experimental working groups are together conducting research work aimed at making the technology ready for application in practice. The theoretical physicists at HHU will examine two important aspects. The working group led by Professor Bruß will study "Multiparticle Quantum Networks". It is asking how data interchange can be made more secure with quantum systems and how it can improve the stability, speed and com-

plexity of the networks. "We want to develop fundamentally new quantum information protocols that describe secure communication between several stakeholders," explains Professor Bruß. Professor Egger and his team are working on a special structure with which "qubits" can be produced, the equivalent to bits in a conventional computer: "What are known as 'Majorana fermions' are pairs of particles where the two individual partners can be far apart from each other and are protected against ambient influences by this spatial separation." The Düsseldorf researchers are creating models of such qubits, which will allow a better understanding of the planned experiments. A. C.

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A city full of opportunities and space for innovation

Research project at the Department of Media and Culture Studies

BY VICTORIA MEINSCHÄFER

Are certain cities the birthplace for certain styles of music? Is there a connection between topography and innovation? Should cities such as Düsseldorf even create opportunities and space beyond entrenched structures in order to stimulate innovation? A research project in the field of media and culture studies led by Professor Dirk Matejovski is examining Düsseldorf – city of fashion and driver of modernity.

A long-term research project on Düsseldorf's media and cultural history evolved more or less inevitably out of the highly regarded congress

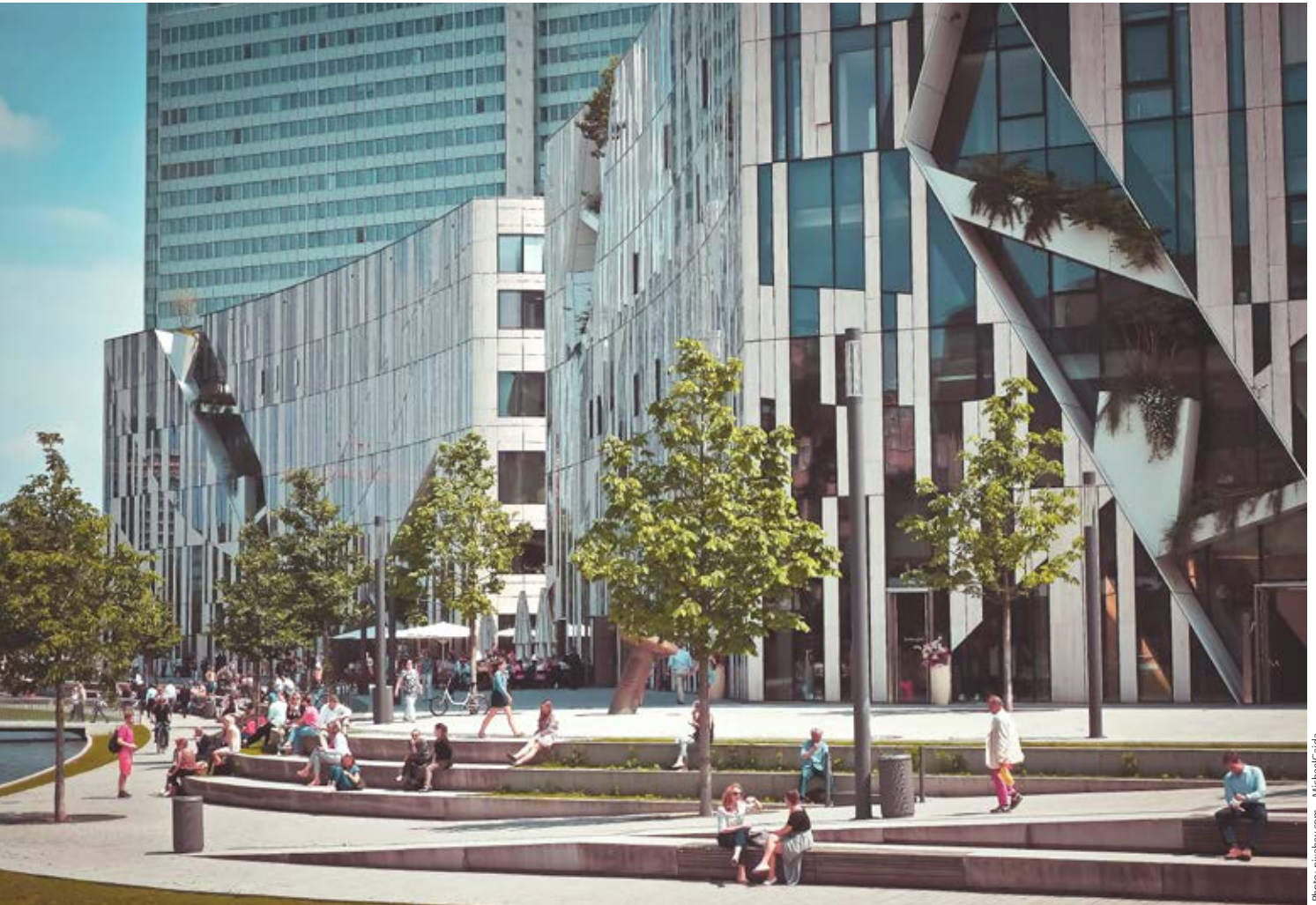
that took place in 2013 and was dedicated to "Kraftwerk", a Düsseldorf band. "During our research work on 'Kraftwerk', the considerable extent to which their appeal is to be seen as rooted in the complex network relationships in Düsseldorf became clear to us," says Matejovski.

Creative milieus

With the new research project, he wants now to illuminate the interrelationship between topography, innovation and creativity: How did urban architecture look at that time, what influence did urban planning have on the development of the indie scene, what role did patrons from urban society play and what impact did this have on the birth of new art forms and music styles? What significance did the Art Academy, the University and other higher education institutions have for the emergence of creative milieus and a site-specific cultural climate? "Düsseldorf has always been 'work in progress' and a city of unique modernity. In Düsseldorf, urban development has never stopped,

“DÜSSELDORF HAS ALWAYS BEEN ‘WORK IN PROGRESS’ AND A CITY OF UNIQUE MODERNITY.”

Professor Dirk Matejovski, media and cultural studies researcher



Düsseldorf's latest large-scale project: The 'Kö-Bogen'.

as can be seen, for example, in the construction of the Rhine Embankment Tunnel, the creation of the Media Harbour, the demolition of the 'Tausendfüßler' flyover and the development of the 'Kö-Bogen' site," says media and cultural studies researcher Matejovski. This always had

Alternative scene left its mark

(and still has?) an impact on the city's populace and its cultural scene. "Think about Fluxus, Beuys, Nam June Paik, the Düsseldorf photography school, formations such as Kraftwerk and Neu! as well as punk and post-punk at the Ratinger Hof club." This all left its mark for years on how the city was perceived, even if it is sometimes overlooked in its self-conception as

a city of fashion, an advertising hotspot or the Ruhr Valley's 'back office'. "For a long while, Düsseldorf was itself unaware that for many years it had had something like an alternative scene that left its cultural stamp on the city," says Matejovski. Yet it is precisely this mixture of distinctive urban development, a solid financial base and creative milieus which produced unique space for cultural innovations.

For the Media and Cultural Studies students involved, the research project was the start of a journey into a - for them - long-distant past. "Our students were all born in or after 1995. For them, the Düsseldorf of the 1970s and 1980s is ancient history," says Matejovski. In the framework of research seminars and Masters courses, the students interviewed contemporary witnesses and talked about the era, for example with journalist Hans Hoff, musician Ralf Dörper and artist Emil Schult, who were associated with Kraft-

werk. “The contemporary witness as a media figure is a relatively new invention and becoming a key authority in cultural history and pop culture research,” says Matejovski. “However, descriptions of cultural processes where the

Contextualisation of memories

contemporary witness is the medium only work when these descriptions are contextualised, annotated and verified.” A complex process which, however, ensures that it is not the usual golden memory books which surface during research

“DÜSSELDORF AS AN URBAN SPACE IS BECOMING A MEDIA SPACE.”

Tomy Brautschek, media and cultural studies researcher

work and which glorify the supposedly good old days but instead a scientific analysis of recent

Photo: Ralf Zeigermann



▶ 1978 – Ratinger Hof in Düsseldorf, legendary punk rock club

◀ Built in 1962, demolished in 2013: The ‘Tausendfüßler’ flyover



Photo: Presseamt



Photo: Wilfried Meyer / Stadtarchiv

▶ The Rhine Embankment Tunnel opened in 1993.



Photo: istockphoto.com – justhavealook

◀ The promenade created by the Rhine Embankment Tunnel opened up new opportunities for leisure and recreation as well as changing city life.

urban history is produced. So is Düsseldorf today still the city with the bustling art scene where new art forms and music styles originate?

Incubator for aesthetic innovations

“While indeed physical spaces disappear as a result of gentrification,” says Tomy Brautschek, who has studied the hip-hop scene over the last few years and works as a research associate in the department, “but in fact they don’t really disappear but instead shift to a media-based setting, such as YouTube. In this way, Düsseldorf

as an urban space is becoming a media space.” And anyone who looks closely will spot specific references to places, milieus and the city’s pop history in the videos of Düsseldorf bands. To this extent, Düsseldorf still acts as an incubator for aesthetic innovations.

In the near future, the media and cultural studies researchers want to further expand their research on Düsseldorf and also take a look at other places. “So far, it’s hardly known that the Faculty of Arts and Humanities here in Düsseldorf was home in the late 1970s and early 1980s to one of the first German centres open to the reception of post-structuralism,” says Matejovski. Another research field waiting to be explored.

Plant research in Düsseldorf remains excellent!



CEPLAS Cluster of Excellence awarded funding and moves into new building

BY ARNE CLAUSSEN

With great anticipation, a large group gathered at HHU to follow the live transmission of the German Research Foundation's press conference on 27 September 2018. The good news came at 16:20: The Düsseldorf Cluster of Excellence CEPLAS ("Smart Plants to Meet the Needs of Tomorrow"; spokesperson: Professor Andreas Weber) will receive further funding in the framework of the Excellence Strategy! The new "Centre for Synthetic Life Sciences", which will be home to some of the CEPLAS researchers, was inaugurated and opened its doors in the summer of 2018.

The start of the press conference was announced for 16:00 and representatives of a total of 88 Cluster of Excellence applications throughout Germany waited eagerly for the results. Twenty minutes later, Anja Karliczek, Federal Minister for Education and Research, appeared on the screen with the long-awaited words: "We have today selected 57 Clusters of Excellence at 34 universities. I'm not going to read out the list. It's going online at this very moment on the websites of the German Research Foundation and the German Council of Sci-

ence and the Humanities." The Foundation's server promptly crashed and only after a few long minutes did the yearned for list finally load on smartphones and notebooks. And there it stood: "CEPLAS Cluster of Excellence on Plant Sciences, submitted by Heinrich Heine University Düsseldorf and the University of Cologne."

Live transmission of the press conference

Everyone cheered: "We did it!" A few minutes later, Professor Anja Steinbeck, HHU President, who was watching the live transmission, put it in nutshell and tweeted: "#CEPLAS was successful. #HHU remains excellent." After the literally excellent news the President went on to say: "We're very happy! Thumbs up and many thanks to Professor Weber and his team, who have worked on this application with tremendous dedication. Heinrich Heine University will now be able to further develop its research activities in the field of plant sciences



Photo: Jörn Menen

and expand our close and tried-and-tested collaboration with our three project partners.” From 2019 onwards, the researchers in Düsseldorf will be able to study the genetic fundamentals of plant traits for a further seven years, together with their colleagues from the University of Cologne, the Max Planck Institute of Plant Breeding Research in Cologne and Forschungszentrum Jülich. Together they applied for about € 57 million for this basic research project.

Food supplies for the world's population

One of the aims of CEPLAS is to lay the foundation for secure food supplies for the global population. Professor Andreas Weber, the cluster's spokesperson, highlights how urgent the project's approach is: “A look back at the record summer of 2018 shows that climate change is a problem facing agriculture worldwide.” High temperatures and a prolonged drought left cereals, vegetables and forage crops withering in the fields in Germany as well as other countries. The harvest from fields and meadows was far lower in 2018 than in previous years. Global warming not only makes it increasingly difficult to irrigate crop plants. Agriculture is also threatened by

more and more frequent extreme weather events, which not only endanger harvests but also damage usable cropland through erosion and salinisation. Weber: “In view of climate change, this summer will not remain the exception, but instead presumably become the rule.”

As a consequence, the development of new types of plant is crucial to securing food supplies for the world's rapidly growing population. New varieties must not only be far higher yielding than today's varieties but also less sensitive to drought, soil erosion and extreme weather. These new types of plant are the starting point for the CEPLAS Cluster of Excellence (“Smart Plants to Meet the Needs of Tomorrow”).

To develop such varieties, the CEPLAS researchers want to study the interaction of complex plant traits that influence their yield and how they adapt to limited resources. This includes, amongst others, important questions about metabolism and the influence of the microbiome, the symbiotic community that plants form together with bacteria and fungi, on plant growth and signalling pathways. These questions will be tackled in an interdisciplinary consortium with the help of experimental and theoretical methods.

The new project builds on the predecessor project EXC 1028 “CEPLAS – Cluster of Excellence on Plant Sciences”, which has been running since 2012 and is also concerned with plant research. Over the past years, the researchers have

published over 450 articles in renowned scientific journals across this very broad field. How does the new cluster differ from the successful predecessor project, which will be funded

Over 450 CEPLAS publications

up until the end of 2018? Professor Weber explains the main differences: “The new research programme builds on the work of the last six years. In the meantime, the four research areas to date have merged together to such a degree that we’ve condensed them into two. What’s more, we’ve seen that we need to further expand the two areas of ‘Synthetic Biology’ and ‘Theoretical/Quantitative Biology’, since these fields can enable us to make much faster and more targeted progress. They are organised as independent research areas in the new CEPLAS.” Overall, four new areas of activity have been identified where researchers will work very closely together. Support structures, such as assistance for early career researchers and public relations work, will be continued and expanded.

The predecessor project gave a considerable boost to molecular plant research at HHU. In the past six years, a total of five new professorships with the respective working groups were installed. Alongside the funding from the German Research Foundation, the University has also intensified its

Sustainable research infrastructure

activities in this area, as Professor Steinbeck reports: “The University is putting in place a sustainable infrastructure in the shape of two new research buildings: The ‘Centre for Synthetic Life Sciences’ will be up and running before the end of

2018 and the ‘Plant Environmental Adaptation Centre’ (PEAC) will follow in a couple of years.” About 80 percent of the total of about 3,800 m² of laboratory, office and service space in the ‘Centre for Synthetic Life Sciences’ inaugurated in July 2018 are at the disposal of the CEPLAS team. The centre will host the entire synthetic biology test facility: From experiment design together with the research groups engaged in theoretical work to the actual experiments to data analysis and computer-based modelling. Particularly important for plant research will be a ‘phytotron’ to be developed at the centre. In this high-tech growth chamber, experimental plants can be cultivated under controlled environmental conditions with the help of state-of-the-art LED technology.

The centre was built at the initiative of Professor Klaus Pfeffer, Vice-President for Strategic Management, who was also responsible for coordinating its development and con-

First tenants in the winter of 2018

struction on behalf of HHU’s management: “The Centre for Synthetic Life Sciences with its symbolic shape is a further landmark on our campus.” It is shaped like an X chromosome and thus already symbolises the centre’s thematic priority, the study of plant and animal genomes and the effects of specific genetic modifications on living organisms.

“In future, researchers at the Centre for Synthetic Life Sciences will have at their disposal the best and most modern working conditions in the area of life sciences,” says Professor Pfeffer. Apart from CEPLAS, the central laboratories of the Biological-Medical Research Centre (BMFZ) will move into the centre in the 2018/19 winter semester. The national government in Berlin and the federal state government of North

“A LOOK BACK AT THE RECORD SUMMER OF 2018 SHOWS THAT CLIMATE CHANGE IS A PROBLEM FACING AGRICULTURE WORLDWIDE.”

Professor Andreas Weber, spokesperson for the CEPLAS Cluster of Excellence



1: The Centre for Synthetic Life Sciences was built at the initiative of Professor Klaus Pfeffer.

2: Annette Storsberg, State Secretary at North Rhine-Westphalia's Ministry of Culture and Science.

3: Professor Anja Steinbeck welcomed the guests in the centre's spacious foyer.



Rhine-Westphalia each financed 50 percent of the cost of the building, which including initial fittings and equipment amounted to about € 38 million. HHU contributed its own share to the federal state's funding by investing € 15 million in the new research infrastructure. The building is located on the preclinical part of the campus and was set up in close cooperation with Düsseldorf University Hospital. Thomas Rachel, Parliamentary State Secretary at the Federal Ministry of Education and Research, Annette Storsberg, State Secretary at North Rhine-Westphalia's Ministry of Culture and Science, and Christoph Dammermann, State Secretary at North Rhine-Westphalia's Ministry of Economic Affairs and Innovation were amongst the guests who attended the official inauguration and opening on 13 July 2018. They all highlighted the potential of plant sciences and synthetic biology in Düs-

seldorf, which through the new building are being given a particularly innovative centre. Presumably from 2024 onwards, the PEAC building completed by then will give plant research in Düsseldorf a further boost. In the € 18 million facility, which is being funded by the national and federal state governments, research groups will study the interrelationships and interdependencies between plant genome and environmental factors. They will examine which plants have the best survival strategies against heat and flooding and in which genes these traits are encoded. "These insights can also be used to develop new, more resilient crops," underlines Professor Rüdiger Simon, PEAC spokesperson.

► **Contact:** Professor Andreas Weber, Plant Biochemistry, aweber@hhu.de

How just is law?

Morlok broaches aspects of the discussion on justice

Ardent champion of “just law”: On the occasion of his retirement, renowned lawyer and party law expert Professor Martin Morlok said “Goodbye” on 26 October with a lecture on “How just is law?”

BY CAROLIN GRAPE

As Chair of Public Law, Legal Theory and Legal Sociology, for 16 years (since 2002) he was head of the “Institute of German and International Party Law and Party Research”, first of all together with political scientist Professor Ulrich von Alemann and later with von Alemann’s successor Professor Thomas Poguntke. In this role, Morlok influenced both the reform of political

party financing as well as the legal framework allowing political parties to qualify for elections. Here is a short summary by Professor Morlok of his lecture:

“Justice” is not a legal term but far more a term used by outsiders in their (critical) description of law. Nevertheless, justice is one of the objec-



Professor Martin Morlok at his farewell lecture.

Photo: Wilfried Meyer



Photo: Wilfried Meyer

Auditorium 5E in Building 25.21 of Heinrich Heine University proved too small for the audience: In addition to Thomas Geisel, Mayor of the City of Düsseldorf, representatives from the judiciary, companions and colleagues even from Rome and Paris and many students also came. Professor Anja Steinbeck, lawyer and HHU President, said in her welcome address: “No-one has left their mark on the institute like you have. Under your leadership, it has developed into an internationally visible platform for an exchange between academia, political practice and interested members of the public.”

tives of law. Why should law be just? Because of the factuality of social expectations: Law as an instrument only works when it aspires to produce just decisions.

Justice as an objective

A few aspects of the justice problem: The discussion on justice takes place only where there is a mandatorily imposed, intersubjective order. Robinson Crusoe did not have a problem with justice. Justice issues revolve around the distribution of goods and burdens. What also needs clarifying is which subjects should be included in the analysis. And finally: Which goods and burdens are objects of discussion in terms of justice? Certain advantages and disadvantages are accepted as in the nature of things. The judicial toolkit contains several instruments for work concerned with justice. If justice-related questions only arise in imposed social orders, there is no justice-related problem in the

area of self-determination. An excellent vehicle for advancing justice is therefore civil liberties. Essentially, individual self-determination is ensured through private autonomy; for the collective dimension of self-determination the institutions of democracy can be named. While indeed they do not settle the question of justice, at least the majority decision represents a rapprochement to self-determination. Out of a long tradition, equality is a core element of justice. Equality rights have a prominent role in legal order.

Equality is a core element

By law, losses first of all remain where they are incurred. There must be an imputed reason for passing on these burdens to another person. Law knows several such reasons. In public law, the distribution of benefits and burdens as a rule takes place on a legal basis, insofar as the legislator is the main actor occupying him or

herself with justice. An element of justice lies in the protection of legitimate expectations, i.e. ones which are routinely oriented to law. So that he or she can act rationally, the actor requires that his expectations are protected. The protection of expectations is the main function of law! Essential in this context is that the person with a legitimate expectation is not the fool. If you are driving your car and approach a road junction when the traffic light is green, you must be able to rely on traffic coming from left and right stopping. Protection of expectations is then effected through the sanctioning of unlawful action. From experience, the law is broken again and again. A good legal order is attuned to this. It contains a developed law for the consequences of violation. Apart from the material elements of justice in law, there are also procedural elements. The law must be applied in each respective case. Procedural precautions are highly significant for the ruling, which is why it is also necessary to speak of “procedural justice”.

Law must generalise

Law must generalise. This leads to unforeseen and unwanted effects. That is why exceptional

provisions allow routine derogation from the standard routine. In addition, decision-making leeway should be used for justice in individual cases. Proportionality functions as a general “diluter”. Finding a just ruling is often difficult due to a collision of rights. Solutions must then be found on a case-by-case basis. The individual case is the place where the complexity of the notion of justice comes to light.

Complex notion of justice

The constitutional state has brought about a new situation: The constitution contains positivised principles of justice: Civil liberties, equality rights, democracy, rule of law, welfare state. The constitution controls and directs simple law, i.e. law below the level of the constitution. The radiance of constitutional principles is a preferred path for justice. Through the constitutionalisation of the legal order, the constitution becomes a reserve of justice. As a consequence, it is possible to occupy oneself with justice as a lawyer and not just as a philosophical thinker who worries in his free time about the justness of the law: Sound legal work is work concerned with justice.



Photo: Wilfried Meyer

◀ Past and future: 16 years of the institute and its board of directors (from the left): Professor Ulrich von Alemann, Professor Sophie Schönberger (Morlok's successor), Professor Martin Morlok and Professor Thomas Poguntke

DIGITALISATION AND ARTIFICIAL INTELLIGENCE

Santander sponsors endowed junior professorship

In the framework of its corporate division “Santander Universities”, Santander Consumer Bank AG will sponsor an “Endowed Junior Professorship for Legal Ethics in Artificial Intelligence” at the Faculty of Law of Heinrich Heine University Düsseldorf. Santander will also finance ten scholarships for talented students within the “Deutschlandstipendium” programme.

Professor Anja Steinbeck, HHU President, and Oliver Burda, Deputy CEO of Santander, signed a corresponding cooperation agreement at HHU in September. Professor Steinbeck at the signing of the contract: „I would like to thank Santander most sincerely for this extremely generous support. It enables us to install a junior professorship which will deal with highly topical legal and legal-ethical questions related to artificial intelligence. This will give us a pioneering role in Germany. In addition, the professorship dovetails perfectly with our digitalisation strategy. Furthermore, the University of Düsseldorf is awarding scholarships for parent students for the first time this year in the framework of its ‘Opportunities’ programme. Part of the funding provided by Santander will be invested there.”

Santander wants to profit from the endowed professorship

Oliver Burda said: “We are proud to welcome another important university in the shape of Heinrich Heine University to the global network of Santander Universities and one which is located right next to our corporate headquarters. Digitalisation is not just a catchword for Santander but instead everyday practice and the route forward – one along which we want to keep ethical issues in mind. This is another reason why supporting the endowed professorship is important to us, since we as a bank hope to gain new know-how through regular exchange.”

Santander has promised funding for the new “Endowed Junior Professorship for Legal Ethics in Artificial Intelligence”



Professor Lothar Michael, Vice-Dean, and Professor Nicola Preuß, Dean, in discussion with Oliver Burda on the new “Endowed Junior Professorship for Legal Ethics in Artificial Intelligence”.

and a half-time post for a research associate for six years. The aim is to advance legal research in the area of artificial intelligence (AI), starting with the fundamentals. Both in research and in teaching, the junior professorship will address AI issues in all areas of private law, criminal law and public law, and also encompass interdisciplinary research with the other faculties at HHU. The call for applications and the appointment of a suitable candidate are planned for the coming year.

Ideal conditions

The Faculty of Law offers ideal conditions for dealing with legal and legal-ethical issues in connection with AI: It has a clear focus on corporate law, is closely networked with Düsseldorf as a legal, financial and insurance location and is part of a university with numerous projects in the field of digitalisation and artificial intelligence in very different faculties. C. G.

FIRST HR FORUM AT HEINRICH
HEINE UNIVERSITY

The future of work: Digitalisation and shortage of skilled personnel

Photo: Jochen Müller

“What will work look like in the future?” This was the question tackled at the first HR Forum at Heinrich Heine University in Düsseldorf, which was organised for the first time this year by the Chair of Business Administration, in particular Organisation Studies and Human Resource Management.

Skilled personnel and managerial staff, HR consultants and practice-oriented researchers in the field of HR management met in June 2018 at University House at the initiative of Professor Stefan Süß to discuss pivotal questions of present and future practice in the area of human resources. An intensive exchange of ideas between science and practice took place in the framework of various lectures, inspiring discussions during the breaks and the concluding panel debate.

Apart from Professor Süß, who in his lecture dared to make a prediction for 2030 and spoke, amongst others, about greater flexibility in working arrangements, changing values, change management and employer branding, other selected speakers greatly enriched the one-day event. Kathrin Menges (Henkel AG & Co. KGaA, Düsseldorf) provided an interesting insight into

HR management in her corporation and highlighted the importance of digitalisation and agile working. Focussing on management, Marion Kemmler (HSBC Trinkhaus & Burkhardt AG) also addressed the challenges of a digitalised working world. Professor Ayad Al-Ani (Alexander von Humboldt Institute for Internet and Society

Digitalised working world

(HIIG)) spoke on the role of humans in an automated working world. He proposed thinking about alternative jobs in areas where simple work is rendered superfluous by machines. Behavioural biologist Patrick van Veen (Apemanagement) provided a fascinating and entertaining insight into human behaviour by drawing parallels in his lecture between people's be-

“ONLY HR MANAGEMENT THAT TAKES INTO CONSIDERATION INDIVIDUAL REQUIREMENTS ON A SITUATIONAL BASIS IS CAPABLE OF MASTERING WORK-RELATED CHALLENGES IN THE FUTURE.”

Professor Stefan Süß, Chair of Business Administration

behaviour at work and the behaviour of primates. Overall, the HR Forum produced two key messages. First: The shortage of skilled workers is not pessimistic fiction but reality.

There is already a shortage of craftsmen and care workers in Düsseldorf too. This needs to be counteracted through the controlled immigration of qualified professionals and initiatives for improved working conditions and income in professions which are today unattractive but essential, such as patient care and care for the elderly. Companies will have to make a real effort to attract each individual employee. Professor Süß: “We’re observing that work is not a central priority for the younger generation like it was for earlier ones. In addition and unlike just a few years ago, there is competition for the most talented candidates. Nowadays, firms have to come up with something special in order to be attractive employers. Flexible worktime models, opportunities for personal development, consideration of individual requirements and work-life balance play an important role in this context.”

Second: Digitalisation is not a nightmare scenario. It changes job contents and allows flexibility, can make work easier and reduce typical physical problems. On the other hand, constant

reachability, system-based control or the fear of failing to keep pace with technology trigger new pressures. However, digitalisation cannot be halted; it will affect each and every employee and companies of all sizes and leave its stamp on how we work in future. It is better that we shape it ourselves than let it overwhelm us.

Human resources management 4.0

What are the consequences? Good HR managers will in future have to individualise recruitment, training, career development and jobs for their (potential) employees. They will also bear increasing responsibility for the development of concepts to deal with the pressures resulting from digitalisation and flexibilisation. This will be necessary in order to position themselves as attractive employers and to keep staff capable and healthy. Professor Süß says in conclusion: “For me it’s quite clear: Only HR management that takes into consideration individual requirements on a situational basis is capable of mastering work-related challenges in the future.” Red.



The purpose of the **HR Forum**, which takes place annually in Düsseldorf, is to bring together science and practice in order to discuss HR management questions of importance for the future.

The next HR Forum will take place on 6 June 2019 at University House

www.orgaperso.hhu.de/hr-forum



1: Closing discussion at the 1st HR Forum: Professor Stephan Kaiser (Munich University of the Federal Armed Forces), Jan Paul Giertz (Hans Böckler Foundation), Caterine Schwierz (von Rundstedt & Partner GmbH) and moderator Professor Stefan Süß

2: Patrick van Veen, founder of “Apemanagement”, explained to executives what we can learn from chimpanzees and gorillas.

COLLABORATIVE PROJECT IN THE FUNDING LINE
 “LIFELONG HEALTH AND WELLBEING” OF
 THE FEDERAL MINISTRY OF EDUCATION AND RESEARCH

Stress at work: Prevention in micro and small enterprises

Stress is a common complaint in the modern working world and an ever-present topic amongst employees and in doctors' surgeries. Staff in micro and small enterprises (MSEs) are not spared either. According to the Federal Statistical Office, in 2014 about 42 percent of Germany's total workforce was employed in such companies; in the skilled crafts sector in 2015 it was even 81 percent of all employees.

Small enterprises (i.e. ones with less than 50 employees) are considered to be the backbone of the German economy and in some sectors the key driver for innovation. PragmatiKK (Pragmatic Solutions for the Implementation of Stress Prevention Measures in Micro and Small Enterprises) is a new collaborative research project led by the Institute of Medical Sociology (Director: Professor Nico Dragano), which will receive funding for the coming four years from the Federal Ministry of Education and Research.

Especially very small companies are hardly able to offset sickness-related absenteeism, which can lead to a long-term fall in productivity. If stress prevention were desirable for this reason alone, attempts to introduce such measures often

Limited leeway

fail nevertheless. “The problem of stress at work still doesn't disappear by itself,” explains Professor Nico Dragano. “There are many reasons why precisely small companies have no measures in place for stress prevention or management: They range from insufficient knowledge to lack of time to fear of additional expense. This is understandable when the owner is also the manager and many different functions, which in larger firms are spread across several shoulders, are the responsibility of one and the same person.” In many cases, small companies do not have the financial leeway to outsource such tasks to external experts.



Owners of small and micro enterprises often have little leeway in terms of time and financial resources.

In its current report on ways to support prevention in MSEs, the European Agency for Safety and Health at Work (EU-OSHA) arrives at a sobering conclusion: Knowledge about efficient interventions in micro and small enterprises can at best be described as fragmentary. This is the starting point for the research consortium's work. The alliance will scientifically assess the reasons for the lack of stress prevention mechanisms in small enterprises and develop practical strategies for supporting companies in a manner adjusted to

Web-based solutions

their needs and possibilities. To date, it is largely unknown which measures are currently successfully in place at all to support psychosocial health at work in small companies. According to the researchers in Düsseldorf, a systematic anal-

“SUCCESSFUL IMPLEMENTATION MUST PRIMARILY BE TAILORED TO THE NEEDS OF THE TARGET GROUP.”

Professor Nico Dragano, medical sociologist

ysis of what is required in order to implement suitable measures is urgently needed. “However, successful implementation must primarily be tailored to the needs of the target group,” says Professor Nico Dragano, who is the spokesperson for the research consortium. The researchers are focusing above all on digital, web-based solutions as a cheap and nonetheless efficient way of organising stress prevention measures in a corporate environment. For example, in the last years they have developed increasingly digitalised, web-based training tools for employees. It has been possible in the meantime to prove that these are very efficient and comparable to one-to-one measures. In health economics analyses, their cost-effectiveness ratio and cost-benefit ratio proved positive.

In cooperation with the Institute of Occupational and Social Medicine (Professor Peter Angerer), HHU’s Faculty of Business Administration and Economics, Chair of Business Administration (Professor Stefan Süß) as well as corporate partners, the last step is an evaluation of how successful the measures have been.

Partnerships

The total third-party funding secured for a period of four years is € 2,072,010, of which € 879,018 alone for the Faculty of Medicine, € 548,211 for the Institute of Medical Sociology (consortium leader) and € 330,807 for the Institute of Occupational and Social Medicine (Professor Peter Angerer). Cooperation partners outside HHU are Leuphana University of Lüneburg, specialists for online anti-stress training, K12 Agentur für Kommunikation und Innovation, Düsseldorf, for the communication strategy and implementation of an entirely web-based tool for stress prevention, and economists at the University of Cologne, who are specialists for corporate management in economic questions related to MSEs. S. D.

Jürgen Manchot Research Professorship 2018

Richard Antony Strugnell, Melbourne

On 27 September, Richard Antony Strugnell, Professor for Microbiology at the University of Melbourne, Australia, gave the lecture entitled “Sensing bacterial metabolism – the intersections between bacterial growth and the host response in Salmonella infections” in the framework of the Jürgen Manchot Research Professorship for Experimental Infection Medicine.

Interface between microbiology and immunology

The Australian microbiologist works at the interface between microbiology and immunology as well as in the area of key microbiological phenomena. This includes bacterial physiology, biofilm development and adaptation to intracellular growth. His research work centres above all on two important human pathogens: Salmonellae (*Salmonella enterica*) and Klebsiellae (*Klebsiella pneumoniae*). He is examining in various model systems how these bacteria interact with their mammalian hosts and how the immune system reacts following a bacterial attack.

The Jürgen Manchot Research Professorship, sponsored by the private Jürgen Manchot Foundation based in Düsseldorf, supports research by young scientists in the field of infection medicine in the framework of the Manchot Graduate School, including the public lecture. Red.



Professor Richard Antony Strugnell and Professor Klaus Pfeffer

Foto: Wilfried Meyer



University House

University House was placed at the disposal of Heinrich Heine University by the van Meeteren Foundation. Its purpose is to provide information and advice as well as foster an exchange between science, culture and education. In the framework of a large spectrum of events, the University offers local citizens the possibility to experience here cutting-edge research as well as its results and shares university life with the city.

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