



A large, high-angle black and white photograph showing the University of Konstanz campus in the foreground, characterized by its modern, interconnected building complex. Beyond the campus, a town with traditional houses and a church is nestled along a lake. The background features rolling hills under a clear sky.

University of Konstanz – **creative.together**

Proposal for the Universities of Excellence Funding Line

University of Konstanz

Excellence Strategy of the Federal and State Governments

Universities of Excellence Funding Line

University of Konstanz – creative.together

University of Konstanz

Commencement of funding 1 November 2019

**Overall Strategy
for Funding in the Excellence Strategy of the Federal and
State Governments**

University of Konstanz – creative.together

University of Konstanz

Konstanz, 10 December 2018

**Prof. Dr. Kerstin Kriegstein
Rector**

Brief profile of the university

Established in (year): 1966

3 Academic structural units (3 faculties with their 13 departments): *Faculty of Sciences:* Mathematics and Statistics; Computer and Information Science; Physics; Chemistry; Biology; Psychology; *Faculty of Humanities:* Philosophy; History, Sociology, Sport Science and Empirical Educational Research; Literature, Art and Media Studies; Linguistics; *Faculty of Politics, Law and Economics:* Politics and Public Administration; Law; Economics

134 Study programmes: 42 bachelor, 29 master, 17 bachelor of education, 16 master of education, 1 first state examination in law, 26 doctoral programmes, 3 continuing education programmes

2 New Clusters of Excellence: EXC 2035 “The Politics of Inequality: Perceptions, Participation and Policies”; EXC 2117 “Centre for the Advanced Study of Collective Behaviour”

7 Profile-forming areas: *Research priorities:* (1) Cultural Studies, (2) Social and Cognitive Sciences with a Special Focus on Inequality Research, (3) Collective Behaviour and Ecology, (4) Chemical Biology, (5) Nano and Materials Science; *Emerging fields of research:* (A) Health Sciences, (B) Data Science

Data for 2017

Total budget including medicine (revenues) [Dr137]	€ 189 million
of which third-party funding (revenues/proceeds) [Dr1a or Dr1b]	€ 68 million
Total budget excluding medicine (revenues) [Dr137]	€ 189 million
of which third-party funding (revenues/proceeds) [Dr1a or Dr1b]	€ 68 million
Professors [Be19]	210.1 FTE [Be1] 211 persons [Be2]
of which male/female/not specified [Be7]	71.6 % m 28.4 % f 0 % n.s.
of which from other countries [Na58]	16.6 %
Academic staff (excluding professors) [Be68 minus Be19 minus Be18]	840.6 FTE [Be1]
of which male/female/not specified [Be7]	61 % m 39 % f 0 % n.s.
Doctoral students [Na46/Na38a]	1,175 persons [Be2]
of which male/female/not specified [Be7]	56 % m 44 % f 0 % n.s.
of which from other countries [Na58]	20.8 %
Academic support and administrative staff [Be63 plus Be28]	825.3 FTE [Be1]
of which male/female/not specified [Be7]	40.5 % m 59.5 % f 0 % n.s.
Students (excluding doctoral students, 1st subject in 1st course, full-time students in winter semester 2017/18)	10,641 persons [Be2]
of which male/female/not specified [Be7]	44 % m 56 % f 0 % n.s.
of which foreign students	10 %

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A Text of proposal

A.1 Summary

Agile, dynamic and pointedly committed to excellence in research, teaching and transfer, the University of Konstanz is a leading German research-intensive university and applies to remain a member of the group of Excellence Universities. Founded in 1966 as a reform university, it is one of only six universities to have been successful in all three funding lines during both periods of the German Excellence Initiative. Building on its past successes as well as its established institutional norms, values and practices, the University of Konstanz with this proposal targets the next level of its institutional development.

Our strategy **creative.together** is based on the conviction that excellent research and innovation thrive when different people and ideas come together in a supportive and inclusive environment. As a small- to medium-sized organisation, we strongly believe in the merits of collaborative research across disciplines, including international colleagues at different career levels and from diverse personal backgrounds. Our concerted strategy will allow us to provide even more excellent working conditions, such as general access to state-of-the-art research infrastructure and highly professional support services.

The catalogue of measures for reaching our objectives was devised in an open and inclusive university-wide process. Most importantly, it contains three lighthouse projects which consist of (1) advancing our Institute for Advanced Study for early career researchers, the *Zukunftscolleg*, (2) designing and implementing a comprehensive e-science strategy covering research, teaching and administration and (3) transforming our central campus area through the construction of a new and interactive *Forum Konstanz*. This latter measure adapts our experiences with institutional and research creativity to the needs of today's researchers and will become a prime location to foster serendipity. For the financing of this major investment, a matching fund including private benefactors is proposed. Our comprehensive set of measures is designed to entice excellent colleagues from around the world to contribute to our continuing "Culture of Creativity".

As an organisation which enjoys high levels of identification from its members, and which possesses solid quality assurance measures, we feel confident that *creative.together* will enable us to successfully take the next step in our institutional development to further improve our research output and visibility, the quality of our research-oriented teaching and our outreach to society, industry and administration.

A.2 Status quo and prior achievements

A.2.1 Overall profile and starting situation

The University of Konstanz is a research university that has secured a place for itself within the leading group of young innovative universities in the world. Founded in 1966 as a reform university, it is one of only six institutions to have been successful in all three funding lines during both funding periods of the German Excellence Initiative (2007-2019). In 2016 – the year of our university's 50th anniversary – the THE 150 Under 50 Rankings rated the University of Konstanz as the seventh best young university in the world, and number one in Germany. In 2018, THE World University Rankings placed our university in the top 200 in the world while the Funding Atlas of the German Research Foundation (DFG) confirmed our number one position with respect to acquiring DFG funding per researcher.

International positioning

Our remarkable success derives from our **core institutional values** that have guided the strategic development of our university since its foundation and continue to inspire us to this day:

- **Interdisciplinarity.** We believe that collaboration between researchers from different disciplines is a key factor for promoting creative top-level research and innovation. Our university was designed to facilitate such collaboration; its compact structure combined with its interconnecting architecture brings people from different academic disciplines together “under one roof”.
- **Performance orientation.** To sustain our high standards in research, we recruit, train and rely on highly qualified researchers, students and support staff. Our strong performance orientation is reflected in the competitive allocation of internal research funds, the strategic and interdisciplinary recruitment of top-level researchers in our core research areas (research priorities) and the systematic and comprehensive implementation of quality assurance measures.
- **Flexible structures.** As a reform university, our mission is to anticipate change and to continuously address new challenges. We constantly review and rethink our structures and processes. Our successful institutional renewal is aided by our compact size and, most importantly, by our inclusive decision-making processes, which combine top-down and bottom-up mechanisms engaging all relevant university groups.
- **Organisational efficiency.** Our campus university features centrally organised units that are valued for their proficiency, service orientation and accessibility, while avoiding duplication of effort. These central support services and core facilities

pool competencies and allow our researchers to focus on excellence in research, teaching and transfer.

— **Social responsibility.** We are convinced that our research can contribute to solving some of the most salient societal challenges of our time and we therefore actively encourage and support our university members to develop and advance innovation, in close exchange with (global) society. We are strongly committed to public accountability, high ethical standards and the promotion of transparency in research, governance and (science) communications.

Our core institutional values form the basis of several cross-cutting, closely-interlinked areas of activity. We are committed to promoting **early career researchers**, advancing **internationalisation** and **equal opportunity**, providing **access to outstanding services and infrastructure** as well as effective **internal and external communication**.

Our current **research priorities** are (1) Cultural Studies, (2) Social and Cognitive Sciences with a Special Focus on Inequality Research, (3) Collective Behaviour and Ecology, (4) Chemical Biology and (5) Nano and Materials Science. **Emerging fields of research** are (A) Health Sciences and (B) Data Science. All of these fields share an interdisciplinary orientation and outlook. These research priorities were developed through **close research collaboration at departmental interfaces within and beyond single faculties**, strategically guided by the Rectorate and supported by the state of Baden-Württemberg.

Research

For us, all four **performance areas of the Excellence Strategy – research, research infrastructure, teaching and transfer** – are intrinsically interlinked and mutually reinforcing (cf. A.2.2.2). In our **research-oriented teaching**, for instance, we expose students early on to research projects and to our research infrastructure, drawing content from on-going research and simultaneously bringing in new impulses. Our **research infrastructure** contributes significantly to our **research performance** and is also used for teaching and training purposes. For the University of Konstanz, **transfer** is an integral component of research and teaching.

While our visibility and our outreach are global, we still are profoundly anchored in the region. Besides being among the largest employers in the region, we interact closely with stakeholders in the city of Konstanz and the international Lake Constance region. We have close ties to the HTWG Konstanz – University of Applied Sciences as well as the Thurgau University of Teacher Education (PHTG) in the neighbouring Swiss canton Thurgau, located just across the border in Kreuzlingen. Two of our three affiliated institutes, the Thurgau Institute of Economics (TWI) and the Biotechnology Institute Thurgau (BITg), are also located there. In addition, we work closely with the Max Planck Institute for Ornithology (MPIO) in Radolfzell near Konstanz.

As the smallest and second youngest university successful in the third funding line of the Excellence Initiative, we have leveraged our success very effectively: We utilised our funding (from all three funding lines) – which comprised as much as 10% of our entire budget – to benefit our entire university community. The Ministry of Science, Research and the Arts Baden-Württemberg (MWK) has committed to help us sustain the strategic measures that have shaped us into the innovative research university we are today. In addition, our sustained success has convinced several sponsors with high standards for research excellence – such as the Hector Foundation II, the Gips-Schüle and the Dr K. H. Eberle Foundations – to support our university and our researchers with significant donations.

With the institutional maturity of a community-driven and research-intensive institution of higher education, our university is now ready to take the next step on its enduring path of excellence: By implementing our long-term strategy “**University of Konstanz – creative.together**”, we will further consolidate our university-wide efforts in support of innovative, internationally-recognised and collaborative research.

Institutional
renewal

A.2.2 Analysis of strengths and weaknesses based on previous achievements and successes

Our **analysis of strengths and weaknesses** encompassed all **strategic areas of activity** that shape our profile as a research university, including research, research infrastructure, teaching, transfer and science communication, support of early career researchers, internationalisation, equal opportunity and governance.

Governance,
Institutional
renewal

First, we formed **working groups** in each of these areas composed of members of the Rectorate, researchers at all career levels, students and support staff. These groups assessed our past and current performance from a **qualitative point of view**, but also used **quantitative data** supplied by our administrative and support units via the Controlling Data Portal (CDP). In a next step, the working groups formulated recommendations regarding future strategies and measures to further promote our university’s strengths and to counteract potential weaknesses. Additional input was solicited from the broader university community through direct interaction and online formats. The aim was to obtain an up-to-date and comprehensive picture of our members’ views and opinions. The working groups then reported their results to the Rectorate and the **steering committee**. The latter was convened by the Senate and comprised representatives from the three faculties, all larger joint research projects and the Rectorate. The entire process was overseen by the **Rectorate** and, in an advisory capacity, by the **University Council** and the **Senate**.

A.2.2.1 Organisation and quality of research

A.2.2.1.1 Strategic orientation of research and research profile

At the University of Konstanz, we aspire to conduct research at the highest international Research level. We believe that it is at the interfaces between disciplines and individual research agendas that creativity thrives. We pride ourselves on our ability to unlock potential by bringing researchers with mutual interests and research agendas together, irrespective of their disciplinary backgrounds. The success of two highly interdisciplinary Clusters of Excellence in the first funding line of the Excellence Strategy confirms our university's capacity for quick and decisive strategic action. Our success in all three funding lines of the past Excellence Initiative has enabled us to constantly enhance and at the same time expand our research profile. Currently, our research efforts revolve around the five research priorities described below. Together, they constitute a comprehensive agenda, enabling us to develop creative solutions in research, industry and society by bringing together excellent researchers and ideas.

Cultural Studies

Cultural Studies at the University of Konstanz are based on innovative research and theory building in the humanities and benefit from interdisciplinary collaboration between historians, philosophers, literary scholars, ethnologists, legal experts, sociologists, political scientists and public administration researchers (cf. C.2.8). Within the framework of the Cluster of Excellence "Cultural Foundations of Social Integration" (EXC 16, 2006-2019), research in this area has focused on one of the most pressing social, political and cultural challenges of our time: Society's capacity for integration and the various mechanisms that drive both integration and disintegration. Cluster scholars are involved in public debates and policy consulting, especially in the wake of the recent migration crisis and related political and societal debates (cf. A.2.2.3). EXC 16 will be succeeded by the Cultural Studies Research Centre (ZKF), which is currently being established. An integral part of both EXC 16 and the ZKF, and a future hub for (inter)national cooperation and exchange, is the university's *Kulturwissenschaftliches Kolleg*, which has so far hosted more than 100 visiting scholars from more than a dozen countries. Research in this area will be carried forward by a new research centre on "European Cultures in a Multipolar World" (funded by the K. H. Eberle Foundation). In addition, professors and postdoctoral researchers specialising in history, law, literature and sociology are currently participating in the creation of a trans-regional "Institute for Social Cohesion" for which the Federal Ministry of Education and Research (BMBF) has granted seed money in a nationwide competition.

Social and Cognitive Sciences with a Special Focus on Inequality Research

Since its foundation, the University of Konstanz has been strong in the social and cognitive sciences (cf. C.2.8). In the university's early years, we acquired two of the very first CRCs in the social sciences and linguistics (CRC 23 and CRC 99). In later years, our linguists, who have traditionally focused on the cognitive aspects of linguistic processes, were awarded three Research Units, one of which led to the establishment of CRC 471. During the Excellence Initiative, we successfully applied for a Graduate School of Decision Sciences in 2012 (GSDS, GSC 1019), which brings together doctoral candidates from economics, political science, psychology, sociology and statistics for interdisciplinary research into different levels and types of human decision-making. A cross-cutting topic that emerged out of past and ongoing research at the GSDS is the study of the political dimensions of inequality. Researchers in this area study the relationship between educational institutions and socio-economic inequality, investigate the integration of refugees and migrants into education systems and labour market structures, or analyse mobilisation processes among ethnic minorities in non-democratic countries. Beginning in 2019, our new Cluster of Excellence "The Politics of Inequality: Perceptions, Participation and Preferences" (EXC 2035) will provide a shared platform for political scientists, economists, empirical educational researchers, linguists, sociologists and psychologists to investigate relevant cycles regarding the perception of inequality, political mobilisation and policy-making. To reinforce the "Inequality" team, a prestigious Alexander von Humboldt Professorship has recently been awarded to Anke Hoeffler from the University of Oxford.

Collective Behaviour and Ecology

Research in the area of Collective Behaviour and Ecology leverages synergies between a range of disciplines, including biology, computer science, economy and psychology. In the past, we received funding for a number of CRCs, Research Units, Research Training Groups (RTGs) and individual projects in this area, studying, for instance, the distribution of invasive plant species as well as animal migration and its impact on global ecosystems (cf. C.2.8). Currently, we are taking advantage of a generational transition of professorships in our Limnological Institute to strengthen this research area. Our latest major success is the new Cluster of Excellence "Centre for the Advanced Study of Collective Behaviour" (EXC 2117), which expands upon our university's existing collaboration with the Max Planck Institute for Ornithology (MPIO) in Radolfzell and which is now set to emerge as a vibrant and globally attractive research hotspot for the study of collective behaviour in humans and animals. Our research in collective behaviour has garnered broad public attention, especially following the recent installation of our ICARUS ("International Cooperation for Animal Research Using Space") technology on

the International Space Station (ISS) (cf. p. 21).

Collective Behaviour – Genesis of a research priority

Our successful cluster application is the result of important strategic choices and our unwavering commitment to this research priority over a period of approximately ten years. Starting points were the successful appointments of internationally leading researchers Martin Wikelski (2007) and Iain Couzin (2015), both previously at Princeton University, who are members of both the University of Konstanz and the MPIO and have been instrumental in expanding the existing partnership between these two institutions. We have made significant efforts to create new state-of-the-art infrastructure, including the forthcoming EUR 32 million Centre for Visual Computing of Collectives (VCC), due for completion in 2021 (cf. p. 21 below), which was acquired through the federal and state governments' Programme on Research Buildings. This new research centre will house revolutionary technologies such as the Imaging Hangar, which will allow our researchers to expose animals to and track them in globally unique virtual reality environments, and also include a new Virtual Reality Lab. Additional world-leading expertise will be provided by Margaret C. Crofoot, who, as of 2019, will join our university as an Alexander von Humboldt Professor and become director of a newly established unit at the MPIO. To further advance research in this area, plans have been made to replace this institute with a new Max Planck Institute for Animal Behaviour on our university's campus in the long term. All of this will place collective behaviour research at the University of Konstanz on the map of cutting-edge research in this field. Our long-term strategic commitment to Collective Behaviour and Ecology illustrates by way of example how we, at the University of Konstanz, connect people, disciplines and research infrastructure in a manner that is both creative and dynamic.

Chemical Biology

The researchers working in the area of Chemical Biology aim to understand how physiological processes can be steered at the molecular and atomic levels by characterising and exploring the interactions between the building blocks of cells. This includes efforts to explore how biological systems adapt to changing conditions on the molecular and networking level and to create new hybrid systems with customised properties. Since 2013, five principal investigators in this area have been recognised with ERC Grants from the European Research Council in the overall amount of EUR 10 million. The Konstanz Research School Chemical Biology (KoRS-CB, GSC 218), which has been funded in the Excellence Initiative since 2007, has played a key role in the development of this research area, as did CRC 969 "Chemical and Biological Principles of Cellular Proteostasis", which was launched with start-up funding provided in the context of our Research Initiative pro-

gramme within the third funding line of the Excellence Initiative (cf. C.2.8). The university successfully applied for funding in the federal and state government's Programme on Research Buildings in the amount of EUR 20 million for the Centre for Chemical Biology (CCB), which was completed in 2013. Our researchers cooperate with internationally leading partners such as Nanyang Technological University in Singapore, Harvard Medical School, Carl Zeiss AG, Boehringer Ingelheim GmbH and Bayer AG.

Nano and Materials Science

In the area of Nano and Materials Science, we address challenging questions in the field of condensed matter and materials, ranging from fundamental questions on the quantum properties of matter to advanced materials and high-level applications. Fundamental quantum technologies present a new paradigm by making – often elusive – quantum effects accessible for sensing, computing and information applications. Creating materials with novel mechanical, optical, electronic or magnetic properties by controlling the assembly of nanostructures and their interaction will make new functionalities available for a broad range of applications, including high-tech materials and nanoscale energy management. Our research in this field is driven by CRC 767 "Controlled Nanosystems: Interaction and Interfacing to the Macroscale" and CRC 1214 "Anisotropic Particles as Building Blocks: Tailoring Shape, Interactions, and Structures", in combination with our Centre for Applied Photonics (CAP). Researchers in this area have been awarded two ERC Grants and participate in a multitude of European and national networks.

Emerging fields of research

At the University of Konstanz, we continuously observe current theoretical, technological and societal developments and identify new fields of research that we can contribute to. To that end, we bring together our interdisciplinary expertise across our faculties. Two such emerging fields are (1) Health Sciences and (2) Data Science.

Health Sciences at the University of Konstanz focus on one of the most pressing questions of our time, i.e. how people can preserve their health. Through interdisciplinary cooperation between biology/toxicology, psychology, sport science and computer science, researchers in this area examine challenges and threats to human health caused by ageing, toxic exposure, risk behaviours, inactivity or stress across molecular and behavioural scales. Important contributions are currently made by the DFG-funded Research Unit "The Dynamics of Risk – Perception and Behavior in the Context of Mental and Physical Health" (FOR 2374), and by "SMARTACT", which explores interventions promoting normal eating and physical activity through mobile technology, as well as the MARK-AGE project, which identifies biomarkers of human ageing. As recently as 2018, a new Human Performance Research Centre (HPRC) was inaugurated on campus fea-

turing state-of-the-art technology for large-scale health studies. While our university does not have its own Faculty of Medicine, our Health Sciences can rely on strong partnerships at the national, regional and local level, for instance with the German Aerospace Center (DLR), Schmieder Clinic (neurology and neurological rehabilitation), the Lurija Institute (rehabilitation and health sciences) and the Centre for Psychiatry Reichenau (ZfP).

Data Science at the University of Konstanz brings together computer and information scientists, social scientists and economists, among others, to develop methods and systems to visualise, analyse, explore and process large quantities of data generated in the natural and social sciences as well as in the humanities. It draws on expertise in data mining/big data, interactive systems and visual computing provided by our Department of Computer and Information Science. Since 2015, CRC/TRR 161 “Quantitative Methods for Visual Computing” has been instrumental in advancing our expertise in Data Science, developing conceptual metrics and models for quantification as well as new techniques and algorithms for visual computing. As a particularly interdisciplinary and context-sensitive field of inquiry, Data Science is key to the research carried out in our new “Centre for the Advanced Study of Collective Behaviour” and in our Cluster of Excellence “The Politics of Inequality”, both of which face methodological challenges related to the collection, processing and visualisation of big data. Our innovative master’s programmes in Social and Economic Data Science (SEDS), which is offered by the Departments of Economics and Politics and Public Administration, and in Financial Data Science (FIDS, currently in preparation) attest to the importance we attach to promoting data literacy and information skills among our researchers and students.

Strategic support of our research priorities

We have implemented various strategic measures to consolidate and advance our existing and emergent research areas. These include, above all, the **strategic appointment** of outstanding international staff whose research interests complement our own research priorities. The Excellence Initiative further enabled us to establish **(1) Research Initiatives**, which provide start-up funding for interdisciplinary research projects that enhance our research profile, increase our international visibility and open up new opportunities for additional third-party-funded research projects in our priority areas, **(2) Transfer Platforms** that support projects involving partners from industry, public institutions or organisations, as well as **(3) Network Platforms**, which serve to initiate and intensify academic exchange with external partners in Germany and abroad to generate joint projects and publications. This has led to a range of strategic partnerships within networks such as the Young European Research Universities Network (YERUN), an association of 18 young research-oriented universities in Europe. Equally important is our **(4) Freedoms for Creativity** programme, which provides excellent researchers with the opportunity to advance

Research,
International
positioning,
Transfer

their research projects by significantly reducing their administrative and teaching duties for up to two semesters. All of these measures have contributed to our recent successes in research, most notably our two new Clusters of Excellence as well as several other outstanding research projects (cf. A.2.2.3). **(5) Strategic fundraising and relationship management** activities have proven key to our successful efforts to secure the support of important sponsors whose donations promote research in our research priorities and help us attract and retain excellent researchers. In 2011 and 2013, for instance, we secured funding in the amount of EUR six million through the “Hector Personnel Fund” (from the Hector Foundation II) for strategic professorial appointments and retentions in our MINT and economics disciplines. Another crucial success factor are our comprehensive **(6) academic support services** (cf. A.2.2.1.2).

Our understanding of excellence also extends to providing state-of-the-art research infrastructure. University researchers, students and external users have access to a range of **(7) core facilities** (cf. A.2.2.2.1). Communications measures as well as additional **(8) transfer activities** (cf. A.2.2.2.3) support our efforts to share the cutting-edge research carried out at our university. We have been successful in the federal and state governments’ **Programme on Research Buildings**, securing funding for buildings such as the above-mentioned **Centre for Chemical Biology** (CCB) and the **Centre for Visual Computing of Collectives** (VCC, also generously supported by the Hector Foundation II). Strategic support is also provided by the state of Baden-Württemberg’s **Ministry of Science, Research and the Arts (MWK)**, a reliable partner for planning issues, budget matters and funding applications in our research priorities.

Infrastructure,
Transfer

Quality of research and quality assurance

The quality of our research is reflected above all by our ability to acquire third-party funding (cf. C.1.2), by the large number and quality of research prizes awarded to our researchers (cf. C.2.6) and by our university’s highly visible publications (cf. A.2.2.3 and C.2.5). In the 2018 DFG Funding Atlas, the University of Konstanz was ranked 1st nationally as a whole in per-capita DFG funding of all academic staff. We achieved first place per capita in the humanities, social sciences and in the life sciences – results that surpass our outstanding 2015 ranking and prove our excellence across disciplines.

Research,
Governance

Since its foundation, the University of Konstanz has hosted a total of 19 CRCs, including four current ones. University researchers have collaborated across disciplinary boundaries in eight DFG-funded Research Units since 2006 (six of them ongoing) and have been awarded a total of 19 ERC Grants: six ERC Advanced Grants, four ERC Consolidator Grants, eight ERC Starting Grants and one ERC Synergy Grant. Five of the particularly innovative and high-risk research enterprises carried out at our university have been recognised with Reinhart Koselleck Projects, including one in cultural stud-

ies and two in the social sciences. As one of only six universities in Germany, we have been successful in all three funding lines during both funding periods of the Excellence Initiative, with one Cluster of Excellence, two Graduate Schools and our *Zukunftskonzept* approved. In 2018, we acquired two new Clusters of Excellence in the first funding line of the Excellence Strategy. As mentioned above, these are “The Politics of Inequality” and the “Centre for the Advanced Study of Collective Behaviour”. This means that two of our three full cluster proposals will receive funding – an exceptionally successful result for a university of our size.

However, we still continuously seek to improve the quality of our research. To that end, we employ various quality assurance measures to monitor, review and, if necessary, reorient our research activities:

Governance,
Institutional
renewal

(1) Competitive allocation of internal resources: In our experience, healthy competition for research funding helps raise university-wide standards and fosters a performance-oriented mindset. Both factors are prerequisites for excellence. Internal resources are allocated in a competitive internal peer review process overseen by the **Committee on Research (AFF)**. Our researchers submit project proposals that are assessed by the AFF according to the following criteria: originality, quality and topicality of the applicant’s research, research intensity, publications, successful applications for third-party funding and cost intensity. All our professors and postdoctoral researchers are eligible to apply for funding via an annual call for publications issued by the AFF. Postdoctoral researchers and *Juniorprofessors* may additionally apply for funding through the Young Scholar Fund (YSF), which is also managed by the AFF and which we were able to launch with funds from the Excellence Initiative (cf. A.2.2.1.2).

(2) Quality assurance: Our comprehensive quality management system is composed of data-based self-assessments and external peer reviews that all departments and research teams undergo at regular intervals in different monitoring and evaluation cycles. Decisive for assessing our departments’ research performance is the **peer review cycle**. Every eight years, external experts are called in to assess the departments’ research profiles, strategies and concepts, for instance with regard to the promotion of early career researchers, internationalisation and equal opportunity. Based on discipline-specific standards and the external peers’ recommendations, we then take action to further improve and strategically develop our research efforts. Concrete measures are determined in strategic discussions between the departments and the Rectorate that take place every four years. The peer review cycle is based on clearly defined criteria and key performance indicators specified in various university-wide quality matrices that are currently being phased in. Matrices specifically for research and the promotion of early career researchers have just been passed by the Senate.

We are committed to the principles of **academic integrity** and have introduced a range of processes that uphold them. The Ethics Committee is our central body for reviewing research project proposals that potentially affect the health, dignity or rights of human test subjects. Its work is complemented by the Commission for Responsibility in Research, which provides advice on all matters of research ethics, including, for instance, dual use issues, and by the Commission of Inquiry into Scientific Misconduct, which investigates allegations and cases of potential scientific misconduct. However, we have yet to implement a university-wide ethics strategy that pools existing expertise and provides one-stop advice to all status groups.

A.2.2.1.2 Promotion of top-level research: Processes and framework conditions

A primary aim of our *ZukunftsKonzept* has been to provide our researchers optimal conditions for top-level research. Our comprehensive **support services**, the **promotion of early career researchers** – especially with our **ZukunftsKolleg** – as well as our **equal opportunity and family support** contribute to achieving this aim.

Research

Support services

One key idea set out in our *ZukunftsKonzept* is the concept of **institutional creativity**, our strategy for establishing an institutional environment that encourages and actively promotes creative research at the highest international level. Part of this strategy has been to provide our researchers with outstanding working conditions, for instance through comprehensive support services (cf. C.7) that meet their specific needs in all four performance areas. These services promote excellence in research by reducing administrative workloads, by freeing up valuable time and resources for our researchers and by enabling a sound balance between work and family responsibilities. They include the following services that are central to our *ZukunftsKonzept* and have been highly commended in all evaluations of our Clusters of Excellence proposals.

(1) Research Support: In 2008, we launched a Research Support unit to assist our researchers with their proposals for third-party funding. The unit provides advice on national and international funding opportunities to all researchers starting at the postdoctoral level, for instance by identifying suitable funding formats and offering guidance on planning and writing applications. Our researchers benefit from extensive assistance during the entire writing process, which includes expert advice on administrative aspects – such as how to complete applications forms or draw up a research budget – as well as comprehensive feedback on the text of the proposal. With its expert advice, our Research Support assists our university in developing profile-building large-scale research projects – especially CRCs and EU-funded projects – and guides these projects from the conceptual to the funding stages. Every year, our Research Support unit processes

Research

around 1,000 requests for consultation submitted by approximately 400 applicants. Its efforts have contributed to an increased readiness among our researchers to submit applications for third-party funding and to contend with others in highly competitive funding programmes. Since 2008, our university's third-party-related revenues have increased by 45% and currently amount to 36% of the university's overall budget.

(2) Academic Staff Development (ASD): The ASD is our university's central service provider in the area of academic staff development, especially the promotion of early career researchers and educational development. Through a comprehensive yet flexible scheme it supports all academic career levels: Coaching, training and team development is available to individuals, while strategic consultation on staff development in university structures and processes is offered to the university's institutions and leadership. Particularly successful is the in-house coaching service provided by trained academic coaches with more than 500 counselling sessions and more than 70 seminars and events per year. Since 2012, the ASD has also offered advice, training and information to individuals considering a career outside academia. Within the ASD, the didactics team supports both teaching staff and departments in improving teaching competency, including advice on media-assisted or digitally enhanced teaching formats. The ASD initiated the first network for university staff development in Germany (*Netzwerk für Personalentwicklung an Universitäten, UniNetzPE*). In 2018, the ASD was commended as a best-practice example in the context of the EURAXESS Pilot Programme of Career Development Centres.

Early career
researchers,
Teaching

Human resources development for non-academic staff is coordinated by the university's Division of Human Resources. Professional leadership as well as health-promoting work structures are two overarching focus areas. The two staff development units worked together to implement our university-wide staff development concept.

Governance

(3) Office for Equal Opportunity, Family Affairs and Diversity: Our equal opportunity office provides comprehensive services in the area of equal opportunity, gender consulting, family support and diversity. A detailed description is available below (cf. p. 18).

Equal
opportunity

(4) Welcome Center: The university supports its researchers and their families in planning their move or visit to Konstanz. The Welcome Center provides comprehensive assistance with all non-academic issues, including finding suitable accommodation, and, for our international guests, visa matters and interacting with German authorities. In collaboration with our university's tax and social security services, it assists all staff members with regard to bureaucratic paperwork, e.g. employment contracts and tax documents. More than 2,500 researchers have benefited from the Welcome Center's support since its establishment in 2008. Today, it is a sought-after partner when it comes to providing advice to other German and European universities that intend to introduce similar structures. Increasingly, the services provided by our Welcome Center are not only requested by incoming researchers, but also by University of Konstanz scholars who require admin-

International
positioning

istrative support ahead of their research stay abroad. Meeting our researchers' demand in this area poses a challenge that we are just beginning to address.

(5) International Communications: To bridge potential language divides, a dedicated International Communications team was established as part of our *Zukunftskonzept*. It advises all university members on international communications issues. Virtually all of our institutional forms, texts, documents and websites as well as our internal and external news channels are now available in both German and English. Besides language support, the team provides assistance with all aspects of intercultural communication, including differences in imagery. The International Communications team also provides a range of translation and proof-reading services as well as support for our internal and external English-language communication, including templates and a university-wide glossary. Since the implementation of this service in 2013, approximately 1,500 requests have been processed, in addition to the two years of work invested in translating our researchers' websites as part of our website relaunch, which took place in 2015 and 2016.

International positioning

(6) Event and Conference Management: The Event and Conference Management team supports our researchers with planning and organising conferences, meetings and other academic events. Its services range from initial consultations to the organisation and implementation of large international conferences, which enables our researchers to focus entirely on the content of their event, rather than its administrative aspects. This has repeatedly encouraged our researchers to host major internationally recognised conferences at the University of Konstanz. These conferences promote dialogue with other researchers and institutions from Germany and abroad and increase our university's international visibility. Among the large academic conferences hosted since 2012 is the IUPAC International Symposium on Bioorganic Chemistry (ISBOC-11) (in 2017) in our research priority Chemical Biology as well as the Human and Computer conference of the German Informatics Society (in 2012). In 2018, for example, the team organised 13 major university events, two large international academic meetings and provided participant management and website services for another ten.

Research,
International
positioning

(7) Communication, Information, Media Centre (KIM): The KIM comprises our university's library as well as its IT services. It provides expert support and consultation services in the area of Research Data Management and Open Access publishing (cf. also A.2.2.2.1, p. 22).

Infrastructure

(8) University of Konstanz Innovation Centre (UKIC): The University of Konstanz Innovation Centre is our central service provider for promoting the engagement between research and industry partners (cf. also A.2.2.2.3, p. 30).

Transfer

(9) Process Management: We have developed an online process portal documenting important administrative processes and responsibilities for all university service areas, offering links to further information, such as documents, forms or contact information. It

Governance,
Institutional
renewal

documents our internal processes, increases transparency and allows us to improve, transform and optimise workflows. The portal helps to streamline administrative workflows based on process management methods. To avoid duplicate investments at other universities in Baden-Württemberg, we share this IT infrastructure with them.

Promotion of early career researchers

Supporting early career researchers is our university's declared goal and is coordinated at senior management level (cf. C.2.7). Early career researchers are important to our pursuit of excellence and we are committed to providing all status groups that fall under this category, including doctoral and postdoctoral researchers as well as *Juniorprofessors*, with the resources and support structures they need. We take part in several networks dedicated to the promotion of early career researchers including the Network of European Institutes for Advanced Study (NetIAS) and University-Based Institutes for Advanced Study (UBIAS).

Early career
researchers,
Research,
International
positioning

We aim to achieve a sound balance between **independence** and support. We encourage our early career researchers to assume teaching responsibilities early on, for instance by accepting teaching assignments at the doctoral stages of their career, followed by supervision and examination responsibilities in the postdoctoral phase. Our postdoctoral researchers enjoy comprehensive access to core facilities and research infrastructure (cf. A.2.2.2.1) to conduct unsupervised and independently funded research projects. All of our early career researchers continue to benefit from appropriate support structures provided through their respective departments, especially during the early stages of their careers. Since 2006, the University of Konstanz has hosted 23 Emmy Noether junior research groups and three Heisenberg fellows, and our researchers were recognised with eight ERC Starting Grants, three Sofja Kovalevskaja Awards as well as three Heinz Maier-Leibnitz Prizes.

(1) Doctoral researchers: At the University of Konstanz, doctoral researchers have long been regarded as an important group. Standards and guidelines for their supervision, their institutional representation and their support for career advancement are laid down in the **Code of Practice for Doctoral Researchers at the University of Konstanz**. Furthermore, our university has established transdisciplinary doctoral regulations that ensure university-wide quality standards. The University of Konstanz has established 26 **structured doctoral programmes**, which it continuously develops. We promote our doctoral researchers' competitive edge through various internationalisation measures, including a joint doctoral programme offered by the Konstanz Research School Chemical Biology (KoRS-CB) in collaboration with Nanyang Technological University (NTU) in Singapore. However, as per our analysis of strengths and weaknesses, there is potential for

further development regarding outgoing mobility and funding as well as internal funding programmes.

(2) Postdoctoral researchers and *Juniorprofessors*: The period of time between doctoral research and a first professorship is particularly crucial in any researcher's biography: It is during this time that the course is set for a successful academic career; it is also at this stage that researchers tend to experience their "innovation peak". We seek to capitalise on this innovative energy to promote international top-level research at our university and to provide new talent with the opportunity to fully unfold their intellectual and career potential (cf. C.2.7).

Postdoctoral researchers at the University of Konstanz are eligible to apply for funding through the **Young Scholar Fund** (YSF, cf. C.2.7), which awards start-up and co-funding for individual research projects. YSF resources are allocated in a competitive internal review process coordinated by the **Committee on Research (AFF)** and range from travel grants for conference attendance to larger grants for additional academic staff and student assistants as well as research infrastructure. Additional financial support is available in the form of **transitional positions** that provide bridge funding to outstanding non-tenured researchers. Since 2007, 27 of these positions have been awarded. Our cross-departmental standards and guidelines for the promotion of early career researchers are set out in the **Konstanz Code of Practice for Postdoctoral Researchers** as well as in our tenure track statutes.

Our university was one of the first in Germany to introduce the ***Juniorprofessur*** in 2002 and has steadily expanded the tenure track professorship model since 2010. Recently, our tenure track scheme was recognised with additional tenure-track positions in the federal and state programme for the promotion of early career researchers (cf. C.2.1). We are now preparing a proposal for the second round of this programme. The ***Juniorprofessur*** has proven to be an effective model for career advancement: Of our 49 ***Juniorprofessors***, 39 (80%) have so far accepted permanent professorships in Germany and abroad.

The Zukunftscolleg

Our **Zukunftscolleg** is both our central model and development lab for the promotion of early career researchers. It was highly commended in all of our Clusters of Excellence evaluations. Founded as an Institute for Advanced Study, it is regarded in Germany and beyond as a pioneer.¹ Other comparable institutions have since been founded around the world that were inspired by our **Zukunftscolleg** model, such as the Martin Buber Society at the Hebrew University in Jerusalem.

Research,
Early career
researchers

¹Wissenschaftsrat (ed.), *Empfehlungen zu Karrierezielen und -wegen an Universitäten* (2014), p. 119. Retrieved from <https://www.wissenschaftsrat.de/download/archiv/4009-14.pdf>

The *Zukunftscolleg* provides its postdoctoral Fellows with a supportive and stimulating environment, combining **independent** research with a strong **international, intergenerational, intra-university** and **interdisciplinary** community as per its “**5-i strategy**” (cf. C.2.7). It brings together experienced researchers and – through the Senior Fellowship and Mentorship Programme – leading experts from different fields to create a strong network of academic excellence, direct communication and interdisciplinary discussion. Weekly research-based meetings (“Jour fixe”) and informal gatherings allow for frequent exchange, leading to unusual and pioneering projects that transcend the borders of individual disciplines. The *Zukunftscolleg* is an intrinsic part of the university and all Fellows are simultaneously integrated into the university’s departments.

The *Zukunftscolleg* offers two-year **Postdoctoral Fellowships** for researchers in the early postdoctoral phase as well as five-year **Research Fellowships** for postdoctoral researchers who have already developed an advanced, independent research profile. The prerequisite for a five-year Research Fellowship is the acquisition of a research project that is financed via an external research grant or comparable third-party funding of at least EUR 50,000. With its successful application for funding in the amount of EUR 6.24 million to the EU programme Marie Curie Actions COFUND, the *Zukunftscolleg* was able to establish its **Zukunftscolleg Incoming Fellowship Programme** in 2012 for the targeted recruitment of outstanding international early career researchers. Our analysis of strengths and weaknesses has shown that the admission requirements mentioned above represent a greater hurdle for international applicants from some countries when compared to applicants from Germany, Europe and the United States, a risk — and opportunity — that we intend to address in the future.

With its flexible structures and through the participation of its Fellows, the *Zukunftscolleg* is in a position to react to current developments quickly and to either adapt or create new funding programmes and other measures if necessary. Programmes such as the **Independent Research Grant** programme can be tested within the institution and, if successful, can then be adapted within the entire university. Importantly, the *Zukunftscolleg* acts as a hotbed for innovative ideas by developing new funding instruments for postdoctoral researchers, such as the Interdisciplinary Collaborative Projects and the Transdepartmental Collaborative Teaching Programmes.

Since 2007, the *Zukunftscolleg* has awarded 107 fellowships: 40% to female and 59% to international researchers. 84% of all former Fellows have gone on to careers in academia: Of all former five-year Research Fellows (37 in total), 92% of the alumni are active in academia. 54% have accepted a full professorship, another 14% a tenure-track professorship. The Fellows have raised a total of EUR 32 million in third-party funding, including DFG funding for nine Emmy Noether independent junior research groups, two Heisenberg fellowships and one Heisenberg professorship, one Sofja Kovalevskaia Prize

awarded through the Alexander von Humboldt Foundation, four ERC Starting Grants awarded through the European Commission as well as one Freigeist Fellowship awarded through the Volkswagen Foundation.

Equal opportunity and family support

The University of Konstanz is an equal opportunity employer. We believe in creativity, diversity and the lively exchange of ideas and points of view. To promote and maintain excellence in research, our strategy is to attract and recruit individuals who thrive in – and enrich – our research community, irrespective of personal background or circumstances. Equal opportunity, diversity and family friendliness are thus key criteria of quality and excellence in all university areas and processes.

[Equal opportunity](#)

(1) **Equal opportunity** concerns are addressed at senior management level by the Vice Rector for International Affairs and Equal Opportunities, the Equal Opportunity Council, as well as by Equal Opportunity Representatives appointed across all organisational levels. We were the first German university to introduce a formal Code of Practice on Gender Equality and we are a leader in nation-wide networks that champion equal opportunity and family support. We actively work to eliminate disadvantages based, e.g. on gender, and support diverse personalities, career paths and lifestyles.

Our central unit for developing and implementing our equal opportunity standards is the **Office for Equal Opportunity, Family Affairs and Diversity**. It promotes equal opportunities, especially for women, and helps all university members to balance work and family responsibilities. It develops rules and regulations to prevent and counteract discrimination and sexualised violence. It provides structural advice to our university's management on the gender-equitable and diversity-compliant development of our organisational structures and processes. To that end, it took part in a range of **strategic audits**, such as the "Familienfreundliche Hochschule" audit (family-friendly university) and the Stifterverband für die Deutsche Wissenschaft diversity audit. The equal opportunity office is further responsible for devising a regularly updated equal opportunity plan with specific departmental targets and concepts. An university-wide quality matrix, which is part of the university's overall quality management system (cf. A.2.2.1.1), has been introduced to ensure that these targets are met.

Both our **active recruitment strategy** and our **respectful appointment procedures** were adopted for the express purpose of increasing the number of female researchers in all thirteen departments and to ensure transparency and fairness during appointment procedures. We practise active recruiting especially in areas with an unbalanced gender ratio in order to increase the number of female applicants. Since 2008, we have been successful in all three rounds of the **Professorinnenprogramm** (female professors pro-

gramme), which was initiated by the **BMBF** and has since helped us increase the overall number of female professors at our university (cf. C.1.3).

We have been commended consistently by the **German Research Foundation (DFG)** as a national leader in the area of equal opportunity. However, we have not yet achieved our gender and diversity targets in all areas. The percentage of female students (55%) and female employees working in the academic support services and in the administration (60%) is outstanding (cf. C.1.10), but we have not yet achieved a balanced gender ratio among our researchers. 44% of our doctoral and postdoctoral researchers are female (cf. C.1.9), but only 28% of our professors (incl. *Juniorprofessors*) – which is nevertheless above the German average of 24% (cf. C.1.3). An unequal gender-balance also exists in our decision-making bodies and committees.

As our analysis of strengths and weaknesses further suggests, gender aspects have not yet been fully integrated into our varied disciplinary cultures. The same is true for diversity: While we, alongside HTWG Konstanz and the city of Konstanz, signed the **Charta der Vielfalt (diversity charter)** in 2015, we have not yet achieved our diversity targets at all organisational levels.

(2) **Family support** at the University of Konstanz is overseen by the *Kanzler* (director of the university administration), who is the university's Family Affairs Representative. As a particularly **family-friendly university**, it is a top priority for us to ensure that our members and their families feel at home in Konstanz. To that end, we have implemented a **Dual Career Policy** and established a **dual career network** together with the city of Konstanz and employers in the region. Our *Kinderhaus* facility offers comprehensive childcare services to all university members, including students, employees and professors. It can accommodate up to 120 children between the ages of six months and six years and its backup service is also available at an ad-hoc basis in case of emergency. Additional assistance with balancing work and family responsibilities is available through the **Science Goes Family** programme, which provides advice and support to working parents in academia. Our experience shows that it is often family support services such as these that prove decisive in appointment or retention negotiations.

A.2.2.2 Structure and quality of other performance areas

At the University of Konstanz, all performance areas – research, research infrastructure, teaching and transfer – are intrinsically interlinked. They mutually benefit from one another in a synergetic process that the entire university community ultimately profits from.

A.2.2.2.1 Research infrastructure

Top-level research requires first-rate and custom-made infrastructure. We consider our research infrastructure to be a profile-building element that supports the formation and

[Infrastructure](#)

consolidation of our research priorities. Our research infrastructure is comprised of our core facilities, other specialist equipment, as well as our central service units such as the Communication, Information, Media Centre (KIM).

Core facilities: Centrally located and collectively shared

The shared use of our infrastructure has always been part of our institutional strategy. It is a matter of course that we do not set up separate libraries, scientific engineering services and data processing centres for our departments, but instead provide centrally located, collectively shared infrastructure centres that pool equipment, laboratories and technical competencies, especially those in our research priorities. These core facilities are open to researchers from all departments and are also used for teaching purposes. They include technology hubs in the natural sciences and research labs in the humanities and social sciences. Core facilities generate synergies on several levels.

First, they pool available technologies and services in a cost-effective and resource-saving manner, ensuring that all University of Konstanz researchers – irrespective of their discipline, career level and individual resources – have access to first-class research infrastructure. The universal availability of cutting-edge technologies provides new impulses for innovative research projects, strengthens our research both with regard to scope and quality while allowing the university to focus on providing modern and high-quality equipment when procuring new research infrastructure. Second, our core facilities bundle competencies and expertise. Our technical support staff are highly trained and specialised, providing outstanding support to research endeavours. However, it is not only the researchers who profit from our core facilities. These facilities also offer attractive career choices to current and prospective academic staff. Finally, our core facilities support research-oriented teaching by providing our students access to cutting-edge technologies, for instance in the context of teaching or research projects. As a result, they are introduced to practice-oriented research approaches early on.

Ideally, our core facilities would work hand in glove with each other, which requires physical proximity between various facilities. A weakness in this area is that some of our core facilities are spread across campus within different buildings. Among other things, this poses a risk to highly sensitive samples and interferes with the coordination processes between interacting core facilities.

Strategically relevant infrastructure

Our research infrastructure is crucial to the scientific work performed in our research priorities and provides important impulses for their continued development.

Our research priority Social and Cognitive Sciences with a Special Focus on Inequality Research is supported by the SurveyLab, LakeLab and the LingLab. Together, they

will form the new Methods Hub, the methodological backbone of our new Cluster of Excellence “The Politics of Inequality”. The **SurveyLab** specialises in surveys and provides support with designing and implementing online and telephone surveys, including sample management and documentation. The **LakeLab** focuses on experimental economics. The **LingLab** facility includes, among others, the Computational Linguistics, Neurolinguistics and Psycholinguistics Labs as well as the Baby Speech Lab.

The forthcoming Centre for Visual Computing of Collectives (VCC) will support our efforts in our research priority Collective Behaviour and Ecology, and especially our new Cluster of Excellence “Centre for the Advanced Study of Collective Behaviour”. This new state-of-the-art research centre will feature the pioneering **Imaging Hangar**, a globally unique technology suite that will enable our collective behaviour experts to study collective animal behaviour in a fully-adjustable 1,800 cubic metre virtual reality environment. The VCC will also provide infrastructure for the evaluation and visualisation of data, including a Virtual Reality Lab and our Powerwall (a high-resolution data screen measuring seven by three metres). Another one-of-a-kind research infrastructure installation is the **space-based ICARUS antenna system**, which was mounted to the International Space Station (ISS) in August 2018. ICARUS tracks globally migrating animals and sends its data to be stored in the Konstanz Movebank research database, which researchers from around the world can access and utilise for their research purposes.

Our research priority Chemical Biology and our CRC 969 “Chemical and Biological Principles of Proteostasis” benefit from access to a range of closely integrated core facilities, including the **Bioimaging Centre** (light microscopy, see below), the **Proteomics Centre** (mass spectrometry), the **Flow Cytometry Centre “FlowKon”** (flow cytometry and cell sorting), the **Electron Microscopy Centre** as well as the **NMR Core Facility** (nuclear magnetic resonance spectroscopy). Since 2014, these core facilities have contributed to a large share of our publications in the life sciences (more than 350).

The research priority Nano and Materials Science and both our CRC 767 “Controlled Nanosystems” and CRC 1214 “Anisotropic Particles as Building Blocks” are supported by the **Nanostructure Laboratory** (electron microscopes, lithography systems, coating lines and dry etching facilities), the highly transfer-oriented **Centre for Applied Photonics** (condensed matter and solid state nanostructures), the **Particle Analysis Centre** (particle characterisation and fractionation), the **Scientific Compute Cluster** (high performance computing and high throughput computing) as well as those facilities mentioned in the previous paragraph. The Nanostructure Laboratory alone has contributed to 214 publications since 2014.

The Bioimaging Centre – a best practice example

The Bioimaging Centre is our core facility for highly-advanced light microscopy and a nation-wide best-practice example for research infrastructure. The BMBF is currently considering an inclusion of the national infrastructure for biological imaging coordinated by the Bioimaging Centre in its Roadmap for Research Infrastructures, which serves to prioritise federal investments in leading research infrastructures in Germany. Our state-of-the-art microscopy centre provides access to first-class equipment as well as support for the analysis of visual data. Among other things, the Bioimaging Centre uses highly specialised and world-leading femtosecond fibre lasers developed at the University of Konstanz's Centre for Applied Photonics that are only available in Konstanz. In doing so, it combines the instrument-based development of microscopy systems, their application in scientific contexts as well as professional image analysis and data management services. The Bioimaging Centre initiated the launch of the nationwide network "German Biolmaging" and assumes a leading role in the further development of quality standards for imaging research infrastructures. Research carried out with the support of the Bioimaging Centre has contributed to 90 publications since 2014.

The **Communication, Information, Media Centre (KIM)** combines our library and IT services. These areas were merged in the context of our *ZukunftsKonzept*. KIM provides our university's central **IT infrastructure** for research, study, teaching and administration, with a portfolio that comprises basic services, digital teaching and learning platforms as well as specialised services for research such as Research Data Management.

KIM is also responsible for acquiring and providing access to our university's literature and information resources. Our 24/7 library holds about two million print items and over one million electronic formats. Over the past years, it has consistently placed at the top of national rankings and benchmarks such as the CHE University Ranking and the BIX Library Index. In 2010, it was elected library of the year. It has been designed to provide a shared space for communication and exchange, boasting its own café, areas for group work as well as 1,600 modern workstations.

The University of Konstanz is a national leader in the area of **Open Access**. We have the highest proportion of Open Access publications in Germany, with more than 50% of our journal publications made available through Open Access formats. Our university's Open Access Policy demonstrates our strong commitment to providing free and unrestricted online access to scientific and scholarly information. KIM manages a publication fund that remunerates publication fees charged by Open Access journals and also provides our researchers with access to the Konstanz Online Publication System (KOPS), which makes their publications freely available to audiences around the world.

Over the past years, the topic of **Research Data Management (RDM)** has become increasingly important, prompting us to pass our Research Data Management Policy in

2018. KIM assists our researchers in managing their research data efficiently, to optimise approaches to using data, and to ensure that their research results can be accessed, reproduced and used in the long term (Open Science). In 2012, the Movebank Data Repository, which is hosted by KIM, was launched in collaboration with the Max Planck Institute for Ornithology. It supports the data-based research conducted in our research priority Collective Behaviour and Ecology, constituting a global repository for animal movement data that is among the research data repositories recommended by the scientific journal “Nature”². A weakness that we have identified regarding our RDM is that it is currently focused primarily on the natural sciences.

Current procedures for establishing new research infrastructure

Using funds obtained through the Excellence Initiative, we launched a dedicated **research infrastructure programme (Infrastructural Platforms)** to finance new equipment and laboratories. Since 2007, 20 such projects have been realised, including most of the core facilities described above. Proposals for new research and laboratory equipment are assessed via a **competitive allocation process** overseen by the Committee on Research (AFF) (cf. A.2.2.1.1).

Governance,
Institutional
renewal,
Infrastructure

The **main criterion for purchasing** large equipment is its relevance to our research priorities. Access to research infrastructure that we cannot or do not want to maintain on campus (due to cost, space constraints or a short technological innovation cycle) is provided through our partner networks. To this end, we maintain close ties with research and industrial partners that have some of the best and most innovative technologies in the world. An example is GATC Biotech in the area of DNA and RNA sequencing.

Core facilities face the challenge of having to keep up with the continuous rise of technological standards, requiring a steady stream of **reinvestments**. We have thus far made demand-driven decisions – based on usage figures – in regard to reinvestments, expansion, downsizing or, in some cases, the discontinuation of core facilities. The latter became necessary with regard to our Genomics Centre, a specialist facility for next-generation sequencing. It soon became clear that considerable long-term reinvestments would be necessary to keep the Genomics Centre abreast of technological advances. It thus seemed more economical and scientifically prudent to outsource our services in this area to external specialists and to close the Genomics Centre. This experience has shown us that we lack a comprehensive and standardised evaluation procedure for our core facilities.

²“Recommended Data Repositories” (2 Dec. 2018). Retrieved from <https://www.nature.com/sdata/policies/repositories#tax>.

A.2.2.2.2 **Teaching**

At the University of Konstanz, we aspire to educate and nurture the next generation of leaders in academia, industry and society based on the most recent state of research. That what makes us strong in research also enriches our teaching: active collaboration across disciplinary boundaries and status groups, performance-orientation and readily available incentives as well as steady innovation and efficient structures. Our teaching is thus strongly **research-oriented**. It is inspired by our research efforts and feeds back into these, with a strong focus on transfer activities that carry important scientific insights out of the classroom and into society.

Few universities have been as successful in the past years as the University of Konstanz in obtaining third-party funding for teaching. Since 2012, we have obtained EUR 16 million through the *Bund-Länder-Programm Qualitätspakt Lehre (QPL)* alone (cf. C.3.1), which places us in the top group of German universities in acquiring funding for teaching. Due to our recent successes in all relevant calls for proposals published by the state of Baden-Württemberg, we have managed to continuously improve our performance in the area of study, teaching and transfer-oriented teaching.

Our study programmes

We offer a total of 108 study programmes (excluding doctoral programmes) across the humanities, social and natural sciences, many of them interdisciplinary, such as our bachelor's and master's programmes in Life Science, Nanoscience or Mathematical Finance and our master's programmes in Political Economy or Studies in European Culture. While our bachelor's programmes have a wide topical focus, providing first-class education in the various disciplines represented at our university, our master's programmes are more specialised, with a strong focus on the research carried out in our research priorities and emerging fields. Our students have access to the university's research infrastructure especially at master's level and are thus exposed early on to research content, methodologies and results at the cutting edge of modern science.

They benefit from **15 double degree options** available in **five study programmes** offered in collaboration with partner universities in Europe as well as China, the United States and Russia. We offer several international study programmes that are either taught in English or include a **study abroad experience** with one of our 230 Erasmus partners or our 59 other global partner universities. In addition, the University of Konstanz engages in seven programmes with universities in the United States, Canada and Mexico and offers **research internships** through the Erasmus+ programme and in partnership with a range of North American institutions. In the winter semester 2017/2018, we counted a total of 515 outgoing and 449 incoming students. 42% of our students have completed a study abroad experience by the time they graduate.

Teaching

The development and implementation of our study programmes is accompanied by a range of **student marketing activities** coordinated by our Communications and Marketing unit. These take into account (1) the particular requirements associated with all of our thirteen departments and (2) study at bachelor's and master's level, (3) qualitative and quantitative recruitment targets, as well as (4) national and international target groups. To successfully recruit outstanding new candidates, we take care to align the characteristic features of our study programmes and departments with our university's research profile and other unique institutional features.

Our university consistently achieves top placements in the CHE University Ranking, especially in departments and study programmes with close ties to our research priorities. In 2018 alone we received **top ratings** in chemistry, biology and politics and public administration and were almost consistently ranked in the leading group of German universities across all subjects in such categories as feasibility to complete the study programme, support for new students as well as the international orientation of the master's programmes.

We endeavour to improve our study programmes continuously and have created suitable structures for instituting changes in a timely manner: Often, it takes us less than 15 months from the first advancement of an idea for a new study programme to its implementation. We continue to design and develop our study programmes in close collaboration with our students and have also had excellent experience with replacing the traditional lecture with more innovative course formats. Our students' satisfaction with their studies is above-average, as reflected in the "Sag's uns!" ("Tell us!") student survey and the graduate surveys: In 2018, 79% of our current students and 80% of our graduates said that they were very satisfied with their studies at the University of Konstanz.

Our teaching staff benefit from teaching competency workshops and additional consultation services provided by our **university didactics** team. To develop innovative new teaching concepts for their study programmes and the course curriculum, our teaching staff may apply for **Freedoms for Teaching**. This finances a temporary reduction of the applicant's teaching load for a maximum of two semesters. The teaching staff we recruit to substitute is frequently from abroad, which provides us with an opportunity to drive forward our internationalisation efforts in the area of teaching and, at the same time, to benefit from new impulses. Since 2012, a total of 37 Freedoms have been approved, many of them focusing on topics such as the digital transformation of teaching or transfer.

In the field of digital transformation, we have successfully been supporting individual teaching activities in selected study programmes. However, we lack a university-wide strategy with tailored components to teach students from all disciplines data and algorithm skills.

Quality assurance

Our **Code of Practice for Effective Teaching** defines research- and competency-orientation as overarching strategic targets and sets out guiding principles and quality criteria for all study programmes. These criteria are based on the guidelines of the Qualifications Framework for German Higher Education and the criteria for the accreditation of study programmes.

The University of Konstanz was **system-accredited** by the Swiss Agency for Accreditation and Quality Assurance in 2014. This confirms the effectiveness of our quality management system and authorises us to accredit our own study programmes. System accreditation at the University of Konstanz is based on our comprehensive **quality management system** that is built around a multi-tiered, university-wide monitoring process (cf. A.2.2.1.1). We carry out additional **course evaluations as well as student and graduate surveys** that also include dropouts and prospective students who waive their offer of a place at our university.

As a research-oriented university and a founding member of the European Network for Academic Integrity, we implement measures to ensure that our students comply with the principles of academic integrity and are committed to instilling in them the importance of good academic practice.

The digital transformation of teaching and related challenges

In light of the digital transformation of academia and society, we have taken steps to integrate **digitally enhanced formats** into our teaching practice. Our campus provides classrooms that support advanced digital and virtual formats, but not nearly as many as are needed, as our analysis of strengths and weaknesses clearly shows. Our students and lecturers share digital course materials, assignments as well as scheduling information using our online teaching and learning platform ILIAS. **Shared classroom** formats, partially funded by the Dr K. H. Eberle Foundation, allow our teaching staff to work with international partners to implement e-learning formats (e.g. flipped classrooms) and to hold them simultaneously at several universities in the world. In addition, we have ample experience with blended learning formats, such as in our continuing education programme for school teachers of computer science, mathematics and physics (cf. p. 31). We currently lack the resources, however, for meeting the special needs of diversity groups (e.g. students with impairments) and for the development of innovative digital concepts. To begin to remedy this situation, we have already successfully applied for a BMBF-funded peer-to-peer consultation as one of only six universities in Germany.

Teaching and transfer

Through our transfer projects, students learn to contextualise research results, to devise practical applications and to develop awareness of the social impact of their disciplines.

Transfer,
Teaching

Transfer-oriented teaching is carried out in all departments and takes the mutually beneficial connections between academia, industry and society into account. Since 2017, our transfer activities have received additional support from a team that assists instructors and students with organising, financing and implementing projects that bring together institutions and individuals from academic and non-academic contexts. **Service learning** projects, for instance, on corporate sustainability and the digital transformation of public administration help us meet our responsibility to society (cf. A.2.2.2.3, p. 30).

A.2.2.2.3 Transfer

Many global challenges can only be resolved through intensive cooperation between academia, industry, society, and politics. Innovative solutions arise at the interfaces between these stakeholders. It is at these interfaces that our research and teaching impact society. At the same time, engagement with external stakeholders enriches and stimulates our research and teaching. This mutually beneficial exchange of ideas, knowledge, and methods between researchers at the University of Konstanz and external stakeholders is the foundation of our understanding of knowledge and technology transfer.

Transfer

During the Excellence Initiative, we successfully achieved the fourth strategic aim of our *Zukunftskonzept* – to promote public dialogue – by implementing effective science communication, marketing and fundraising measures. We strengthened transfer at our university considerably during the second funding phase by introducing Transfer Platforms (see below) and incorporated it as an essential element within our institutional strategy (cf. C.4.2): We took part in a Transfer Audit in 2015-2016 and adopted a **new institutional identity and vision for transfer** in 2017. We were one of only five universities nationwide to be selected for the Transfer Audit (funded by *Stifterverband für die Deutsche Wissenschaft*/Heinz Nixdorf Foundation). As a result, we were able to further consolidate our strategy for effective knowledge and technology transfer and we now highlight innovative transfer projects of our university members with a newly implemented, annual Transfer Award by the University of Konstanz Society (UGK).

At the University of Konstanz, transfer is an integral component of all our performance areas and not a third mission. We advance a wide and heterogeneous understanding of transfer. This allows us to implement our concept university-wide, in all departments, and beyond the traditional technology-oriented disciplines. In line with the German Council

of Science and Humanities,³ we categorise our transfer activities into three domains of activity: **communication, application and advice.**

Communication

Our university aims to continuously strengthen the **direct exchange between science and society**. We strive to sustain the public's trust in science, counteract the proliferation of pseudoscience, and expand scientific literacy within society by promoting truthfulness, credibility and openness in all of our science communication activities. We are committed to maintaining transparency, ethical practices and Open Science: For example, we disclose third-party sponsors and we provide the public unrestricted access to scientific information. For that, our media work also focuses on the methods and processes of research. Along with our research outcomes and successes, we report intermediate and negative results.

International
positioning,
Transfer

With support from the third funding line of the Excellence Initiative, the university implemented a number of **science communication measures** that have enhanced our university's national and international visibility. One of the highlights, for example, was our exhibition "Rebuild Palmyra?", created in 2017 by students from both the university and the HTWG Konstanz. Using innovative digital media, the exhibition traced the history of this Middle Eastern city, its culture and trade relationships from its foundation to the destruction of its ruins by terrorists. It is being hosted by museums around Germany.

Our university communication is coordinated by our **Communications and Marketing (KuM)** staff unit, bringing together – among others – science communication including online and international communication, relationship management and fundraising, conference and event management, marketing as well as the *Konstanzer Wissenschaftsforum* (Konstanz Science Forum). By realigning the structures, methods and our understanding of science communication during the Excellence Initiative, our university has taken on a leading role in the field of science communication in Germany. Media resonance analyses regularly confirm our high visibility across all print and online media on the national and international levels. In addition, a research project funded by the BMBF demonstrated that our university has a similar media visibility (in total) as the Free University of Berlin, one of Germany's most visible universities.⁴ Our director of Communications and Marketing is regularly appointed to expert committees on the status and future prospects of science communication, e.g. by the *Bundestag* (German federal par-

³Wissenschaftsrat (ed.), *Wissens- und Technologietransfer als Gegenstand institutioneller Strategien*, Positionspapier (2014). Retrieved from <https://www.wissenschaftsrat.de/download/archiv/5665-16.pdf>

⁴Andres Friedrichsmeyer et al., "Mediensichtbarkeit und Neue Steuerung. Die strategische Bedeutung der Pressestellen im Spiegel empirischer Befunde", presentation of the results of the BMBF-funded research project "Öffentlichkeit und Hochschulperformanz", led by Frank Marcinkowski, annual conference of the German association of communications professionals in higher education, 10/11 Sept. 2013.

liament; in 2015) and by the BMBF (since 2018) – and she is the director of the German association of communications professionals in higher education (*BV_HKom*; sind 2014).

Relationship management and fundraising are essential elements of our university's communications strategy. These areas include the alumni relations, fundraising and foundation management teams. Together, they represent our university to both current and future internal and external stakeholders for the purpose of building and strengthening mutually beneficial relationships. They work together with our Alumni Association (VEUK) and the UGK in order to recruit and manage sponsors and charitable friends. Since mid-2012, their efforts have enabled our university to raise EUR 19 million in financial donations from such sponsors. For example, the Hector Foundation II has donated a total of EUR 12 million, which allows our university to both continue to recruit and retain excellent staff and help to finance the building of the Centre for Visual Computing of Collectives (VCC). The Gips-Schüle Foundation is contributing to the new early career research group Animal Social Networks in our research priority Collective Behaviour and Ecology with EUR 875,000. One weakness we have identified is that these fundraising activities have so far been biased towards the natural sciences. Networking events organised by our relationship management team, such as the research alumni meeting at Tel Aviv University in 2017 and at the Charles University in Prague in 2015, are prized by our researchers.

The Konstanz Science Forum (KWF) was founded in 2006 before many other universities created similar public dialogue platforms. It has since established itself as both a distinctive feature of our university and as a national brand. Its strength lies in facilitating strategically important dialogue between experts in academia, politics, business, industry and society. The KWF provides an internal advisory function to our university and incorporates external perspectives through its interactions with society. Cooperation partners include the Brandenburg Academy of Sciences and Humanities, Körber Foundation, Prussian Cultural Heritage Foundation, Volkswagen Foundation and other comparable institutions. Since the KWF was founded, it has organised 54 events in Konstanz and all over Germany. The analysis of strengths and weaknesses has identified development potential in regard to the inclusion of more diverse and international perspectives into the KWF's management and activities.

Application

The University of Konstanz strives to advance and promote the application of its researchers' scientific achievements. Since 2010, we have continuously developed corresponding support structures. Our **Transfer Platforms**, a funding mechanism for application-oriented spin-off and research projects, were developed and supported in the second funding phase of the Excellence Initiative. Eight projects were funded, including

[Transfer](#)

spin-off companies and collaborative projects with public institutions. The Transfer Platforms were a successful model for the internal funding of transfer activities, which can be further developed across a broader scope of activities. An example of a transfer project that led to a **successful spin-off** is myPOLS Biotec GmbH (development of custom-made DNA polymerases by Professor Andreas Marx). With financial support from the UKG, another Transfer Platform led to the development of an education app designed by our cultural scientist Dr Diana Schmidt-Pfister to teach sign language to mentally impaired children and teenagers. Further examples of successful spin-offs not related to these Transfer Platforms include KNIME AG (open-source software that supports data scientists in identifying new connections in large amounts of existing data, developed by Professor Michael Berthold), which recently received an investment of EUR 20 million from the French venture capital firm INVUS, and GATC Biotech AG (DNA and RNA sequencing for academic and industrial partners worldwide developed by former professor Fritz Pohl), which was recently acquired by Eurofins Scientific SE. Since 2007, our university has disclosed 97 inventions, of which 52 were successfully registered as patents.

The **University of Konstanz Innovation Centre (UKIC)** was established as a result of the Transfer Audit. UKIC aims to support engagement between researchers and industry partners as well as the use of intellectual property by providing assistance in finding partners, initiating collaborative activities, legal support, entrepreneurship support, and funding advice. Through the start-up initiative *Kilometer 1* (funded by the MWK Baden-Württemberg), UKIC not only supports student start-up ideas, but it also strengthens the university's involvement in regional and international entrepreneurship networks. To gain access to expertise from external partners, our university also **supports strategic partnerships with non-academic institutions** such as the Centre for Psychiatry Reichenau (ZfP) (a specialty hospital and psychiatric nursing home) and Schmieder Clinic (specialist neurological rehabilitation clinics). Examples here include joint research for developing methods for the early detection of psychosis (initiated by Professor Brigitte Rockstroh, now continued by Professor Daniela Mier). This collaboration also includes partners from other countries: For instance, the large-scale implementation of treatment for traumatised survivors of gender-based and sexual violence in East African crisis regions is realised in joint projects with the Social Fund of the Democratic Republic of Congo, the Université Lumière of Burundi and the NGO vivo international. The respective development of psychotherapeutic interventions by Professor Thomas Elbert and Dr Maggie Schauer has been recognised by the German National Academy of Sciences Leopoldina. In a different field, Professor Ines Mergel recently implemented a teaching concept at our university through which her students developed recommendations in regard to the digital transformation of public administration for the city of Konstanz.

Our researchers interact within a number of networks and cooperation projects. These include research and technology networks such as BioLago (cross-border health network linking science to industry) and cyberLAGO (regional IT and digital media network), as well as research-industry partnerships with, for instance, BASF AG, Airbus SE, SAP SE, Boehringer Ingelheim GmbH.

While all of these aforementioned measures represent constructive developments in our application transfer domain, there are still weaknesses. We lack the space to be able to further consolidate transfer competencies and activities on our campus. Furthermore, we have not yet fully exploited the available expertise of our start-up networks.

Advice

Our researchers and staff play an **active role in sharing their expert knowledge** with politicians and other public servants and administrators, from local schools to the *Bundestag* (German federal parliament) and European Union decision-making bodies (cf. A.2.2.3). A recent highlight is the “Leadership for Syria” programme for Syrians who intend to help rebuild war-torn Syria. This scholarship programme, coordinated by the German Academic Exchange Service (DAAD) on behalf of Germany’s Federal Foreign Office, combined a specialist course of study with an accompanying programme on the rule of law and good governance. This programme, comprised of e-learning and on-campus events, was developed and hosted by the University of Konstanz. Professor Wolfgang Seibel and 17 other instructors advised Syrian students and doctoral researchers on how to promote democratic values and sustainable economic policies in post-war Syria. Under the directorship of Professor Michael Grossniklaus (Computer Science) the University of Konstanz launched the new continuing education programme *Informatik Mathematik Physik (IMP)* in 2018. It is a blended learning programme designed to prepare secondary school teachers to teach the new focus area IMP (computer science, mathematics and physics). Designed on behalf of the Ministry of Education, Youth and Sports Baden-Württemberg, the programme consists of 22 compulsory modules through which participants will acquire subject-specific foundations, interwoven with aspects on teaching methodology. Organisational support for this and other continuing education programmes is provided by our Academy for Advanced Studies at the University of Konstanz (AWW).

International
positioning,
Transfer

The Centre for Alternatives to Animal Testing Europe (CAAT-Europe) at the University of Konstanz, directed by Professor Marcel Leist, advises decision-makers from industry and politics at the international level in regard to the animal-free testing of chemicals. In 2014, the CAAT-Europe was recognised for its scientific consultancy to Members of the European Parliament when it received the Lush Prize, the highest endowed award for non-animal testing methods. Another prominent example from our community of re-

searchers who advise public institutions is Professor Kirsten Mahlke. With funding from an ERC Proof of Concept grant and together with her students, she developed a blended learning module for police training, through which future officers are trained in the difficult task of conveying death notifications.

Quality of transfer and quality assurance

As in all other performance areas, we strive to evaluate the success of our transfer measures. We are currently preparing a quality assurance system that is tailor-made for our transfer performance area and that is based on a quality matrix encompassing all three transfer domains. As a result of our strengths and weaknesses analysis, we have identified further development potential in regard to coordinating the evaluation of proposals for internally funded transfer projects.

Governance

Additionally, we regularly carry out media resonance analyses in our communication domain. The University of Konstanz closely observes the guidelines for good science communication (*Leitlinien zur guten Wissenschaftskommunikation*) issued by the *BV_HKom* and Science in Dialogue (WiD).

A.2.2.2.4 Summary of strengths and weaknesses

As described in the previous chapters, our major strengths are the following:

Summary of strengths
Interdisciplinary, collaborative research across our faculties and their departments as part of our institutional identity.
Continuous successes in acquiring third-party funding, combined with our performance-oriented allocation of internal university funds.
Exemplary support of early career researchers, e. g. via the <i>Zukunftscolleg</i> .
A broad range of centrally organised support services that reduce our researchers' administrative responsibilities and free up time for research and teaching.
State-of-the-art research infrastructure that enables collaboration across disciplinary boundaries.
Flexible and strategic action based on reform-oriented innovative thinking.
Welcoming atmosphere and excellent working conditions on campus.

However, as the previous chapters have made clear, in the coming years we have yet to address a number of challenges if we are to enhance our status as a leading research university:

Summary of weaknesses

Creating opportunities: We have achieved excellent results in the past with the limited means available to us, but need additional space for research, teaching and other activities if we are to realise the university's potential for innovation even more successfully.

Research infrastructure: We have yet to streamline workflows and further professionalise our monitoring and governance structures.

Digital transformation: We need to bring the various activities responding to this challenge together in an overall e-science strategy; among the most pressing issues are Research Data Management and electronic workflows.

Support of early career researchers: The Zukunftskolleg's internationalisation efforts have, until now, focused too strongly on the Northern hemisphere.

Transfer: We have not yet developed all three dimensions of our transfer strategy to an equal extent.

Fundraising: The fundraising activities to date have been biased towards the natural sciences.

Research ethics: We have yet to implement a university-wide ethics strategy that pools existing expertise and provides one-stop advice to all status groups.

Internationalisation: We currently lack the organisational structures to support and increase outgoing researcher mobility.

Equal opportunity: We have not yet completely reached our own gender equality targets and still need to coordinate our measures for gender and diversity into an overall mainstreaming strategy.

These, and a range of concomitant challenges, will be addressed with the catalogue of measures introduced in Chapter A.3.2.

A.2.2.3 Excellence of researchers and framework conditions

Research excellence at the University of Konstanz is measured via mutually dependent quantitative and qualitative criteria. Important **quantitative criteria** include the number of our publications and citations, successfully acquired third-party funding as well as awards and honours. Our researchers' outstanding **performance in the area of publications** is illustrated by rankings such as the CWTS Leiden Ranking, in which we currently place sixth nationwide and 169th in the world. It ranks universities by the number of publications in the top 10% of the most widely cited publications worldwide. Both the **2015 and 2018 DFG Funding Atlas** confirmed our university's number one position in Germany with respect to the acquisition of DFG funding per professor and researcher, respectively. University of Konstanz researchers are regularly honoured with some of the most prestigious **research awards** (cf. C.2.6).

Research,
International
positioning,
Transfer

A key **qualitative criterion** for us in regard to research excellence is the **role our researchers play within their discipline**. Many of our researchers have advanced their scientific field, opened up new research fields, and amended existing doctrines through their groundbreaking research. Their names are often intrinsically connected to their field

of research. The **demand for their expertise in social, political and economic domains of society** is an additional indicator for their research excellence. A number of our leading researchers distinguish themselves beyond their research achievements through their active role in society. Politicians, journalists and expert committees consistently request their expertise. Another essential quality criterion for our university is the intensive **interdisciplinary and international collaboration** of our top researchers. Especially the best and most renowned of them carry out their research in predominantly interdisciplinary projects with international colleagues. As a result, they establish themselves as key nodes within international and interdisciplinary research networks that allow them to advance scientific innovation on a global scale. The excellence of our researchers is further reflected by the fact that a large percentage is involved in our Clusters of Excellence and CRCs. All our researchers benefit from the excellent framework conditions described in Chapter A.2.2.1.2.

For example, the biologist **Professor Iain Couzin** (formerly Princeton University), with his visionary research on swarm intelligence and swarm behaviour, is shaping interdisciplinary research in the field of Collective Behaviour on an international level. He is one of the most influential biologists of our time: Clarivate Analytics (formerly Thompson Reuters) includes Iain Couzin in its 2018 list of the most highly cited researchers in the world. He investigates the mechanisms through which animal swarms and other collectives coordinate their actions on both the individual and group level. To this end, he combines field and laboratory research with complex data analysis methods. Iain Couzin is well known for his scientific approach of placing animal swarms in virtual environments and then analysing their behaviour via state-of-the-art tracking technology. He is one of the speakers of our Cluster of Excellence “Centre for the Advanced Study of Collective Behaviour” and a Director at the Max Planck Institute for Ornithology (Radolfzell).

Professor Elke Deuerling set new standards through her pioneering work in the life sciences. The microbiologist co-founded the field of cellular proteostasis which, over the past 15 years, she has continuously advanced through her groundbreaking research contributions. The “Deuerling-Wiedmann-Modell” of antagonistic “sort and countersort” of proteins is named after her. Elke Deuerling utilised her Freedoms for Creativity to launch our CRC 969 “Chemical and Biological Principles of Cellular Proteostasis”, which was approved in 2011 and whose speaker she is. Her research is supported by several of our core facilities, including the Proteomics Centre, the Bioimaging Centre and FlowKon.

As a result of his top-level and highly transfer-oriented research in the field of Chemical Biology, **Professor Andreas Marx** has become a global leader in the application-oriented development of individually tailored DNA polymerases and the exploration of their reaction mechanisms. To this effect, he combines research methods from the fields of organic chemistry, biochemistry and molecular and structural biology. Andreas Marx utilised our

Transfer Platform programme to initiate the myPOLS Biotec GmbH spin-off, which applies his research results on DNA polymerases in the wide area of medical diagnostics. For his achievements in knowledge and technology transfer and research on DNA polymerases, he was awarded the Karl Heinz Beckurts Prize and an ERC Advanced Grant. He served as the speaker of the Konstanz Research School Chemical Biology, which was funded from 2007 until 2019 within the Excellence Initiative. He benefited from the Freedoms for Creativity programme and the on-campus childcare facility.

The physicist **Professor Elke Scheer** has made a name for herself well beyond Germany through her research in the field of Nanoscience. Particularly important are her experimental investigations of charge transport in atomic size conductors as well as her contributions to Molecular Electronics. Elke Scheer was instrumental in initiating our university's CRC 767 "Controlled Nanosystems", which is integral to our research priority Nano and Materials Science. She is cofounder (and currently spokesperson) of the excellence-initiative funded Nanostructure Laboratory and spokesperson of our low-temperature physics division. Beyond her research achievements, she is a driving force behind the establishment and development of the *Zukunftscolleg* (cf. A.2.2.1.2).

Professor Miriam Butt is one of the leading and most versatile linguists internationally. She connects theoretical and historical linguistics with methods from computational linguistics and computer science, introducing innovative perspectives and methodology to the field. Her main empirical focus lies on South Asian languages, where she has made instrumental contributions to this under-researched area. At the same time, she has pioneered work in the computational analysis of language as used in political and social discourse (focus on English and German). The "VisArgue" project (see below), which she co-initiated, was a key initiative that has led to a lasting interdisciplinary collaboration of linguistics, computational linguistics and political science at our university. Miriam Butt is spokesperson for the Research Unit FOR 2111 "Questions at the Interfaces" and is a principal investigator in our Cluster of Excellence "The Politics of Inequality".

A top-level scholar in the field of literature is **Professor Albrecht Koschorke**. He is one of the leading cultural researchers of our time and was recognised with the Gottfried Wilhelm Leibniz Prize of the DFG, the most important research award in Germany. Through his exploration of how narratives influence culture and their significance for groups, societies and organisations, Albrecht Koschorke has made groundbreaking contributions to the fields of cultural theory, cultural semiotics and narrative theory. He was instrumental in the development of EXC 16 and had a leading role in RTG 838 "The Figure of the Third".

Emeritus Professor Jürgen Osterhammel is a globally leading historian. Through his influential publications in the field of modern and contemporary history, he made a significant contribution to expanding the traditional discipline of history to include global

processes. His book *The Transformation of the World* is regarded as one of the most important research publications on modern history. The 1500-page bestseller has been received with great enthusiasm both in academia and the public and has thus far been published in six editions and in five languages, with translations into other languages planned. In 2010, Jürgen Osterhammel was honoured with the Gottfried Wilhelm Leibniz Prize and with the Balzan Prize in 2018. His scientific contributions were honoured with the *Pour le Mérite* in 2017.

Professor Urs Fischbacher is one of the most respected researchers in the field of experimental and behavioural economics in the world. According to the 2018 Highly Cited Researchers list from Clarivate Analytics (formerly Thompson Reuters), he is one of the most highly cited researchers in the world. In particular, he experimentally investigates the structure of social preferences, and in interdisciplinary collaborations, the psychological processes of economic decisions. By developing the software z-Tree for conducting economic experiments, he made a significant contribution to the expansion of laboratory experiments in the field of economics. Urs Fischbacher is co-speaker for our Cluster of Excellence “Centre for the Advanced Study of Collective Behaviour” and is the director of the Thurgau Institute of Economics (TWI) and our LakeLab core facility.

Professor Katharina Holzinger is one of the leading political scientists in the field of international politics, focusing her research on the EU, conflict and negotiations. Her current research addresses conflict-prone state and societal structures in Africa. With her Reinhart Koselleck Project “Traditional Governance and Modern Statehood”, she initiated a pioneering study of traditional structures in Africa. She is a co-founder of “MIASA Africa”, a German-African Institute of Advanced Studies investigating the topics of democracy building, conflict resolution and the relationship between natural resources and social development. Together with Professor Miriam Butt and Professor Daniel Keim, Katharina Holzinger analysed political negotiations via their joint project “VisArgue”. This collaboration started the close connection between political science and linguistics at the University of Konstanz, which helped to lay the groundwork for the new Cluster of Excellence “The Politics of Inequality”.

The University of Konstanz legal scholar **Professor Daniel Thym** is not only one of the leading researchers in the field of international migration law, but he has also distinguished himself through his contributions to the public and political discourse on the topic of migration. He advises the German federal government and parliament on migration policy, asylum law and integration. He is often invited by the press to share his expertise with a range of audiences. As speaker of the Konstanz part of the new “Institute for Social Cohesion” funded by the BMBF, Daniel Thym significantly contributes to its development.

A.3 Plans and potential

A.3.1 Strategy and objectives

Excellence in research has been a trademark of the University of Konstanz since its foundation in 1966. In the previous chapter, we presented extensive evidence attesting to the highly successful use of the Excellence funding awarded to us since 2006. The university's achievements in the different performance areas across various disciplines have placed us in the top group of German as well as European universities. This excellent performance is not a coincidence. Our history as a reform university has spurred the creation of a tightly-knit and highly collaborative research community. We pride ourselves on having minimised organisational hierarchies so as to stimulate exchange and motivation for research. We work on a single campus where spatial proximity fosters interaction; for example, students, staff and researchers meet spontaneously in the university foyer or main campus restaurant (the *Mensa*) and discuss societal, academic, or administrative issues. Shared research infrastructures, funding formats geared to promote joint research projects and also, very importantly, the *Zukunftscolleg*, have deeply intensified and augmented the quality of our 'working together'.

It is this togetherness that we place at the heart of this proposal. Our motto *creative.together* is based on the fact that creativity and innovation emerge when different people and also different ideas come 'together' in a supportive, dynamic environment. We here stress the value of people and ideas explicitly, because on the one hand, academic creativity without the will and the ability to work together is hugely limited, especially when we scale to the institutional level; on the other hand creativity remains inseparable from independent thinking. Both components are integral parts of our strategy. We will provide the right conditions to strengthen collaboration even beyond the already established forms, while also protecting individual freedoms and providing both the space and time required to promote individual imagination and original ideas.

Our overall goal is to further promote excellence in research and teaching and we translate this goal into five complementary and mutually reinforcing objectives, forming the basis of our strategy *creative.together*:

- **Objective 1:** We will promote top-level research by optimising the conditions and support for interdisciplinary and intergenerational research collaboration.
- **Objective 2:** We will strengthen the interplay between research and teaching, the implementation of state-of-the-art teaching methods and the further integration of students into cutting-edge research.
- **Objective 3:** We will intensify existing interaction as well as knowledge and technology transfer between academia and society.

- **Objective 4:** We will advance research collaboration across the globe and reinforce inclusive institutional structures that promote diversity and equal opportunity.
- **Objective 5:** We will strengthen our institutional governance and boost our university's capacity for institutional renewal.

In combination, these objectives promote our strategy *creative.together* by further advancing the University of Konstanz as a place for excellence in research and teaching, and by providing an environment attracting world-class colleagues, who will contribute to our growing success and live our “Culture of Creativity”. Our strategy has been developed against the backdrop of more general social and research-related changes such as digital transformation and globalisation; it decisively takes sides for promoting a pluralistic and democratic society.

We have developed the strategy *creative.together* in a process which was designed to balance inclusiveness and effectiveness. The Rectorate initiated and steered the intra-university decision-making process. The Senate, in addition to giving advice and formal consent to this proposal, installed an Excellence Strategy steering committee, consisting, among others, of the members of the Rectorate, the deans of the three faculties, the speakers of all our cluster initiatives, the directors of our Graduate Schools and Collaborative Research Centres and an Equal Opportunity Representative. The steering committee proved to be of central importance during the change of the rector during the summer 2018, by guaranteeing legitimacy and providing continuity in our vision.

For the University of Konstanz, also given its size, *creative.together* represents an enormous opportunity, having the potential to greatly enhance our institutional development. The measures introduced below are tailored to make the most of our Konstanz-specific strengths, and to carefully take into account potential challenges and opportunities we may encounter on our way. We have taken great care to assure a sound integration of the measures into our organisational framework and are convinced that they will benefit all university members. The measures are designed so as to facilitate flexible and effective responses to unexpected societal and research-related developments.

Our concept for the university allowance awarded to us in the first funding line of the Excellence Strategy was driven by the same set of strategic objectives as highlighted above; therefore the incorporation of the university allowance measures into the catalogue below proved to be straightforward. In addition, the state of Baden-Württemberg has guaranteed a continuation of its funding share of the former Excellence Initiative. The Excellence Strategy will therefore allow us to build on structures we have successfully established in the past and to materialise our goal to remain a prime location for top-level research and inspiring teaching in Germany and beyond.

A.3.2 Planned measures and anticipated effects

In this section, we describe the catalogue of measures designed to realise our overall strategy of promoting top-level research, research infrastructure, teaching and transfer. We first introduce three “lighthouse projects”, which put a spotlight on key strategic endeavours and interlink all our objectives. They consist of (1) further strengthening and expanding the **Zukunftscolleg**, (2) implementing a comprehensive **e-science strategy** and (3) providing the architecture for our concept by redeveloping part of our central campus area into the new and interactive **Forum Konstanz**. Our plans for the **Zukunftscolleg** largely expand upon its past successes; the other two projects are new. All three lighthouse projects are clearly aligned with our university’s institutional identity and values and respond to current challenges that both our university and society face. After detailing these projects, we present a catalogue of additional measures that directly address the individual objectives outlined above.

A.3.2.1 Lighthouse projects

Zukunftscolleg

The **Zukunftscolleg** is central to our institutional strategy and a model institution at our university. It was created in 2001 (as the *Zentrum für den wissenschaftlichen Nachwuchs*) to establish a new career path for early career researchers (cf. A.2.2.1.2). **Zukunftscolleg** Fellows have produced top-level research across all disciplines represented at the University of Konstanz, providing a highly valued blueprint for independent research that transcends disciplinary and national boundaries, career levels and status groups. Therefore – and given its excellent achievements in different performance dimensions – the **Zukunftscolleg** is an integral part of our strategy *creative.together*. Both the fellowship system and the two-stage selection process have proven to be highly successful; established formats such as workshops, lecture cycles, institutional collaboration, and the **Zukunftscolleg**’s governance structures will likewise be continued. While one aim will be to ensure continuity, we are also adding new measures to the **Zukunftscolleg**’s portfolio.

Research,
Early career
researchers

The **Zukunftscolleg** advances our first objective of promoting top-level research by facilitating intense **collaboration** in a **supportive environment** that brings the Fellows together to discuss their diverse research interests, questions, theories, approaches, methods and experiences. To promote interdisciplinary exchange, thematic calls for fellowships will be launched in the future. However, we will also continue to offer open calls for applications for up to 25 Postdoctoral and Research Fellowships in order to maintain the interdisciplinary culture and ethos required for “creative interference”. Building on the tried and tested **Interdisciplinary Collaborative Projects Programme**, a new **Synergy Fellowship Programme** will be introduced that allows two researchers with

different disciplinary backgrounds to work on a single project, each contributing their own topical or methodological expertise, while having the opportunity to sharpen their individual research profiles. We will further continue to support the collaboration of early career and more senior researchers through the Mentorship Programme. In the future, researchers with an ERC Starting Grant will be offered a five-year Research Fellowship in combination with a temporary **Zukunftscolleg Professorship**: For the duration of their fellowship, these candidates will be permitted to hold the title of professor and will also benefit from an additional fully-funded sixth year. This will help us to remedy a weakness in retaining and attracting outstanding early career researchers.

In the past years, the *Zukunftscolleg* has pioneered a number of new funding formats to promote research-oriented teaching and the transfer of knowledge (cf. A.2.2.1.2). Its **Transdepartmental Collaborative Teaching Programme**, for instance, elicited an enthusiastic response both from lecturers and students. Transfer projects initiated as part of the **Intersectoral Cooperative Programme** included the curation of exhibitions and innovative science communication forms that link science and the arts. We will continue to develop such projects to strengthen interaction between research and teaching as well as between academia and society. While the *Zukunftscolleg* has always promoted inclusiveness and internationalisation, its efforts in these areas have, until now, been biased towards the Global North (cf. A.2.2.1.2, p. 17). To remedy this situation, we intend to award up to five **AAA Fellowships** per year to invite excellent early career researchers from **Africa, Asia** and **Latin America** to complete a research stay of up to six months at the *Zukunftscolleg*. We intend to use our institutional ties within the NetIAS and UBIAS networks (cf. A.2.2.1.2) to fuel intercultural dialogue and to identify suitable candidates. Successful candidates will be supported through tandem and mentorship programmes with our Postdoctoral and Research Fellows. The university's Welcome Center will provide assistance with practical and organisational matters, while the Research Support unit will help with funding applications (cf. A.2.2.1.2).

Teaching,
Transfer,
International
positioning

As illustrated in Chapter A.2.2.1.2, the *Zukunftscolleg* contributes strongly to our **institutional development** and cultivates close ties with the departments and the Rectorate: the Vice Rector for Research and Academic Staff Development, for instance, is a member of the *Zukunftscolleg*'s Executive Committee. The *Zukunftscolleg*'s lasting contributions to our concept *creative.together* will become even more visible as we increase interdisciplinary collaboration (publications, science exhibitions, teaching modules etc.), recruit more researchers from non-OECD countries, and explore new research avenues, teaching and transfer formats. Since it is a well-established university institution, new measures for the *Zukunftscolleg* can be implemented with immediate effect.

Institutional
renewal

EUR 3,150,000 p.a. are required to finance fellowships, research funding and the other programmes highlighted above. This will allow us to continue and advance the *Zukunftscolleg*'s success story.

Towards a comprehensive e-science strategy

The digital transformation of our professional and private worlds and the abundance of diverse and complex data constitute both a challenge and an opportunity for research, industry, politics and society. At the University of Konstanz, data, information and communication are crucial for sustaining excellence in all performance areas. We therefore intend to implement a comprehensive **e-science strategy** for research, teaching and governance that promotes (1) Open Science and Research Data Management, (2) data and information literacy, (3) digital teaching and learning environments, (4) evidence-based and responsible governance as well as (5) the (partial) automation of administrative workflows.

(1) The digital transformation of research: The data revolution significantly affects the way we conduct research. The natural sciences, but also, and increasingly, the social sciences and the humanities, use data-based methodologies. For example, our Cluster of Excellence “The Politics of Inequality” uses large-scale text analyses to study perceptions of inequality in public discourse. Our second Cluster of Excellence, the “Centre for the Advanced Study of Collective Behaviour”, gathers and analyses vast amounts of data derived through the use of cutting-edge imaging and global-positioning technologies. These data must be stored, ordered, analysed and made available to multiple users in the scientific community and the public. To continue to meet such challenges, we will expand our **Research Data Management (RDM)** unit (cf. A.2.2.2.1) to further pool expertise and services dealing with data mining and curation, and to address the legal, ethical, economic and technical aspects of digital data. It will assist in professionalising the collection, organisation, storage and analysis of research data. We will build on existing resources and services in this area, including our RDM advisor, our Movebank data repository, and our state-funded RDM consultation (*bwFDMinfo II*).

Research

RDM can further promote transparency by enhancing the quality of shared input and output data and by providing reliable information on research and data generating processes (**Open Science**). The Excellence Strategy will allow us to make use of local and global data repositories and to develop tailor-made solutions to meet different needs and requirements. We are in the process of launching our Current Research Information System (CRIS), which will be available online and will help us to systematically collect and present all research activities and outcomes to potential partners, funding bodies and the general public. We are also planning to introduce an **Open Educational Resources Policy**, which will allow our teaching staff to legally share teaching content with colleagues

Research,
Teaching

around the world, promoting internationalisation and continuing education while increasing efficiency and assuring the quality of our teaching.

(2) Teaching the digital transformation: It takes specialists in and outside of academia with a solid background in computer science, mathematics and statistics as well as substantive subject-specific expertise to generate value from novel sources of data for research and decision-making. This is why we want our students – the next generation of researchers, employees and leaders – to be able to approach and evaluate data in a critical, informed and responsible manner. To this end, we will introduce a new **Advanced Data and Information Literacy Track** in the course of which students from all disciplines will be taught a range of sophisticated data analysis skills. They will learn to understand how computers are programmed, how data is gathered and analysed via increasingly advanced algorithms and how this data analysis is deployed in society.

Teaching

Advanced Data and Information Literacy Track

This innovative new track will provide our students in all disciplines the opportunity to develop cutting-edge data and information literacy skills. They will be awarded a certificate worth up to 30 ECTS credits, comprised of (1) core courses in data analysis, visualisation and programming, (2) subject-specific courses taking particular disciplinary needs into account, (3) new interdisciplinary formats that bring in relevant ethical, legal, societal and theoretical aspects, as well as (4) events like Data Days that bring students and researchers together to exchange ideas regarding digital opportunities and challenges. These Data Days will help to raise our students' awareness of – and pique their interest in discovering and using – new forms of data analysis and visualisation. Blended learning formats will ensure broad coverage and will allow students to complete this programme according to their individual interests and time constraints.

In contrast to our new Advanced Data and Information Literacy Track, similar courses currently offered at other German universities only provide a general overview of the area and are entirely optional. In a unique step that sharply distinguishes us from others, and following a formal evaluation process, we intend to turn some of our optional courses into mandatory components of all study programmes offered at our university. This will ensure that future generations of students are provided with crucial transferable skills.

(3) The digital transformation of teaching: Researchers, teaching staff and students from all over the world are increasingly communicating via digital media. We want our students to study and work in flexible and digital environments early on in order to prepare them for future careers in research and teaching, industry, education or society. Therefore, we plan to make extensive use of and to expand our **digitally enhanced teaching formats**, including flipped and shared classrooms and blended learning, as

Teaching

well as research-oriented, transfer-oriented and continuing education programmes that promote flexible, open and collaborative learning processes.

A new **Media Production Studio** will assist our teaching staff in producing – or produce on their behalf – interactive multi-media teaching materials for virtual teaching environments. To that end, more classrooms will be transformed into **teaching and learning laboratories** that support digitally enhanced formats. Our existing streaming services for lecture recording and teaching films will be transformed into an interactive media service, providing a virtual work space for lecturers and students.

To maintain our ability to respond flexibly to technical and methodological innovations and changing demands, we will implement a new and adaptive funding instrument, the **Teaching Innovation Fund**, which will be available to both individuals and groups. Resources from this fund will be allocated in a competitive internal review process.

(4) The digital transformation of governance: A powerful **strategic reporting and planning system** is a key prerequisite for informed, fact-based decision-making and the early anticipation of strategic challenges. Recent developments in higher education policy and ever tougher competition for resources, staff and ideas place very specific requirements on our strategic reporting and planning system. We have therefore implemented a **comprehensive data warehouse** and an online portal for **strategic data analysis** to foster evidence-based planning and decision-making processes. Our aim in the coming years will be to further integrate our data, to automate our data collection processes and to promote evidence-based decision-making, e.g. by including longitudinal analyses and planning scenarios, at all organisational levels. We will transform our existing data warehouse and business intelligence unit into a service-oriented **Business Intelligence Competence Centre** (BICC) equipped to consult with and advise our faculties, departments and the Rectorate. This competence centre will include the position of a Chief Data Officer responsible for data quality monitoring. The BICC will act as a testing ground for the opportunities that new research and developments in Data Science afford with respect to improving our strategic planning processes.

Governance,
Institutional
renewal

(5) The (partial) automation of administrative workflows: Our existing online Process Portal documents our administrative processes. We will use it to further optimise them and to automate workflows, where possible. To advance the digital transformation of administrative tasks, we will take steps to translate high-level process descriptions into lower-level ones that lend themselves to ready execution. To this end, the existing document management system will be enhanced with a workflow management component.

We expect to be able to start implementing most of the outlined measures in 2020. In order to further elaborate the programme and components of the Advanced Data and Information Literacy Track, we intend to initiate it in 2022. In total, we are requesting EUR 1,660,000 p.a. to implement our e-science strategy: EUR 300,000 p.a. for Research

Data Management, EUR 500,000 p.a. for the Advanced Data and Information Literacy Track, EUR 350,000 p.a. for digitally enhanced teaching formats, EUR 130,000 p.a. for the Teaching Innovation Fund, EUR 280,000 p.a. for the digital transformation of governance and EUR 100,000 p.a. for the (partial) automation of administrative workflows.

Forum Konstanz

The Excellence Strategy, with its potentially unlimited duration, allows us to develop measures that will have profound impacts. The idea underlying our strategy *creative.together* is to bring people and ideas together and to generate breakthroughs and innovation through both facilitated and serendipitous encounters. This philosophy is encoded in our university's norms, values and practices and is also mirrored by the architecture of our campus, which was designed to promote collaboration and interaction. The most visible manifestation of this conviction is our centrally located library, which is accessible to all disciplines. This approach has been central to our past successes, but we still need to adapt to more recent societal, scientific and technological developments and challenges.

We therefore propose an entirely new building complex, **Forum Konstanz**, to house our vision of a densely networked and interactive university. The *Forum* will provide open spaces for interdisciplinary research teams. It will accommodate a new core facilities hub that will pool a range of technologies in a single location. It will provide spaces for students and researchers to interact in a research-intensive context. It will help to realise spin-off projects and invite students and researchers to simply play around with objects and ideas in a creative environment including a Fabrication Laboratory (Fab Lab). We will also have the facilities to host public events and exhibitions to showcase our research and to interact with society. Finally, communication, informal interactions and productive run-ins will be served by building open meeting places, cafeterias and a restaurant.

Research,
Infrastructure,
Transfer

Forum Konstanz will bring people and ideas together in an environment that lives up to the demands of 21st-century research. It will help to inspire creative thinking and the practical implementation of new ideas. The building complex will offer approximately 10,000 square metres of floor space. We will comply with sustainability principles and observe high ecological standards in the design and construction of *Forum Konstanz*. Digital working places and high-tech core facilities will be integrated along with meeting places for face-to-face interactions in an open and welcoming atmosphere. The architecture will include transparent galleries to signal our commitment to openness in academia and society and to allow colleagues to peek in and gain insight into other research activities. The *Forum* will not contain lecture halls or seminar rooms because teaching and learning here is to explicitly occur on an interactive level. It will be available to researchers across campus and from abroad to hold seminars, presentations or workshops in its open spaces and on its, ideally, accessible roof. Flexible, multifunctional space will encourage

chance and synergistic encounters between diverse people. We plan to relocate several of our core facilities to the *Forum*, among them the Nanostructure Laboratory and the Particle Analysis Center (PAC). This will streamline workflows, create synergies and enable researchers from different departments and disciplines to come together. Moving the Nanostructure Laboratory to the *Forum* will optimise the fabrication of high-end nanostructure devices for the benefit of about 140 users from the Departments of Physics and Chemistry. In addition, moving the PAC will concentrate our expertise in particle characterisation and separation and substantially contribute to CRCs 1214 and 767 at the Chemistry-Physics interface, enhancing synergies, not least with respect to the planning and execution of correlative workflows. The *Forum* will also host the *Zukunftscolleg* and enable us to offer substantial new lab space for early career researchers in the experimental disciplines and promote our interdisciplinary community.

As a marketplace of ideas, the *Forum* physically embodies the objectives of our *creative.together* strategy. It will boost research by bringing researchers from different disciplines together in well-equipped and engaging spaces to interact and jointly carry out their academic projects. This concept will also include partners; for example, the planned Max Planck Institute of Animal Behaviour, which has already been approved by the Senate of the Max Planck Society and which will replace the MPIO in Radolfzell/Konstanz with a new and larger institute, intends to move to the building site next to the *Forum* at the northern parking area of our university to further foster our vision for an integrated, interdisciplinary and world-class research environment.

Our students will profit from the *Forum* by being able to “experience” science in practice through internships, assistant jobs or student projects at core facilities or by directly interacting with the teaching staff. As mentioned above, we will install a Fab Lab equipped with 3D printers, laser cutters and other prototyping tools available to students to readily explore and experiment with new ideas. The Fab Lab will also combine our research and teaching activities thereby enhancing knowledge and technology transfer.

Teaching

In a rapidly changing world, the ways in which our researchers interact with society, industry and politics are transforming constantly. Creativity is an essential aspect of modern **transfer** and is particularly relevant for developing new entrepreneurial ideas. The *Forum* will enable us to promote creativity through dynamic interactions with external stakeholders. A recent amendment to the state of Baden-Württemberg’s state law on higher education allows us to host start-ups on campus, which we can locate in the *Forum*. For instance, we will relocate the University of Konstanz Innovation Centre to the *Forum*, which will allow us to provide one-stop advice to entrepreneurs. In addition to encouraging creativity and supporting new businesses, the *Forum* will provide multifunctional spaces ideal for hosting other transfer activities related to our transfer dimensions communication and advice (cf. A.2.2.2.3). These will include large and small-scale public

Transfer

events, workshops, exhibitions and other formats on topics of societal relevance such as climate change, migration, the rise of populism or the protection of minority rights.

We are convinced that *Forum Konstanz* in all its multi-dimensionality will evolve into a new centre of campus life that connects ideas, people and organisational structures. Constructing a building of about 10,000 square metres is a very costly endeavour. We are therefore extremely grateful to our long-time benefactors, the Hector Foundation II, and to Hans-Werner and Josephine Hector personally, for generously supporting this project with up to EUR 25 million as part of a **matching-fund**. In addition, we are very grateful to the state of Baden-Württemberg for its readiness to substantively contribute to the *Forum* even beyond its share in Excellence Strategy funding. Drawing EUR two million per year from the Excellence Strategy, matched by funds provided by the Hector Foundation II, the state of Baden-Württemberg and our own resources, will enable us to spend up to EUR 100 million on the new building in the years to come.

Planning for our new *Forum Konstanz* is underway and the city of Konstanz has indicated that it will accept this project in its 2019 revision of the communal development plan. The architectural design competition will be decided in 2020 and, after site development has been completed by 2023, construction will commence. *Forum Konstanz* is scheduled to open in 2025. We are requesting EUR two million p.a. for the *Forum Konstanz*.

Together, these three lighthouse projects illustrate our capacity for decisive strategic action and institutional renewal. Table A.1 summarises important anticipated effects of these projects. In the following chapter, we will introduce specific measures designed to achieve our objectives. These, as well as the lighthouse projects described above, have been deduced from the analysis of strengths and weaknesses described in Chapter A.2.2.

A.3.2.2 Further measures to achieve our objectives

creative.together: strengthening excellent and collaborative research

Our first objective is the promotion of top-level research by intensifying collaboration between researchers of different disciplines and career stages and providing them with a supportive environment. *creative.together* in research means sharing ideas, methods and data across disciplines. It also means bringing the right people together, irrespective of their career levels, their personal origins and backgrounds. Achieving this goal requires a supportive and well-equipped environment.

Research

Excellent and innovative research is typically carried out by groups of outstanding researchers who draw upon their combined perspectives and approaches. In terms of initiating large-scale collaborative research projects, no internal funding instrument has proven more effective than our **Research Initiatives** (cf. A.2.2.1.1). Irrespective of their quality, initial ideas do not necessarily translate into successful joint research projects. Research Initiatives can, however, make funds for such work available, facilitated by

Table A.1: Important anticipated effects of our lighthouse projects

	Zukunftscolleg	Digital Transformation	Forum Konstanz
Objective 1: Top-level research and conditions	25 Zukunftscolleg Fellows and Synergy Fellows define and explore new interdisciplinary research fields.	Open Science: We share research data to accelerate scientific progress. We train data specialists to promote data-driven research.	Centrally located core facilities support collaborative and interdisciplinary top-level research.
Objective 2: Interplay between research and teaching	Our students encounter new and timely teaching topics and benefit from new trans-departmental teaching formats.	We apply an Open Educational Resources Policy and teach students from all disciplines a range of profound data analysis skills.	Our students directly experience science and interact with researchers in the <i>Forum Konstanz</i> .
Objective 3: Interaction and knowledge transfer between academia and society	Zukunftscolleg projects continue to connect academia, the arts and society.	The next generation of leaders is trained to approach and evaluate data in a critical, informed and responsible manner. Our state-of-the-art science communication takes latest developments and media channels into account.	The <i>Forum</i> hosts a number of different start-ups as well as a range of science communication events that highlight our research.
Objective 4: International research collaboration, equal opportunity and diversity	Strong international ties at the early career level and a significant increase of Fellows from non-OECD countries.	We use flexible digital teaching formats and take the individual living conditions of our diverse student body into account.	Close interaction between diverse individuals promotes synergies.
Objective 5: Governance and capacity for institutional renewal	Measures and incentives for developing the university are first tested and further developed in the Zukunftscolleg.	We implement a strategic reporting and planning system for informed, fact-based decision-making and the early anticipation of strategic challenges. We partially automate administrative processes.	The flexible allocation of space promotes innovative collaboration that enhances individual and institutional research profiles. <i>Forum Konstanz</i> as a lab for institutional development.

a process in which concepts are reviewed and awarded funding by the Committee on Research (AFF) and by external reviewers, depending on the amount of the requested sums. Funds can be used to hire staff or to purchase software or other tools necessary to generate first results, e.g. in pilot studies. In the coming years, we also expect our Research Initiatives to contribute to the development of new Clusters of Excellence, CRCs

as well as further collaborative research projects at our university. To promote diverse research approaches and endeavours, we will now open the Research Initiatives up to applicants who want to pursue innovative projects on a smaller scale or blue-sky research more generally (e.g. to apply for ERC Grants or Reinhart Koselleck Projects).

A second tried and tested measure that has proven its merit during the Excellence Initiative is the **Freedoms for Creativity** programme, which supports sabbaticals for professors and provides them additional time to pursue their research (cf. A.2.2.1.1). The 57 Freedoms granted since 2012 have greatly contributed to shaping our university's research profile and earned our researchers across different disciplines international recognition (cf. A.2.2.3). We will therefore continue and extend this programme to include *Juniorprofessors*, as specified in our Clusters of Excellence proposals.

Network Platforms (cf. A.2.2.1.1) constitute another existing measure that is directly related to our overall strategy *creative.together*. As the name implies, these Network Platforms foster exchange with partners from other universities, non-academic research institutes and industry. They provide space to invite guests for workshops, either for book projects or to launch joint research proposals.

Six-monthly calls for these three measures will provide comparatively fast yet quality-evaluated access to funding and thus enable our researchers to quickly develop and implement innovative ideas.

While Research Initiatives, Freedoms for Creativity and Network Platforms provide seed funding for (collaborative) research projects, state-of-the-art **research infrastructure** is also indispensable. Improvements to our infrastructure will be made to provide more integrated and efficient services that promote collaboration (*creative.together*), increase the quality and impact of our research and drive scientific progress. In addition, shared research infrastructure contributes to promoting early career researchers and to raising and profiting from our students' curiosity. Offering the best possible infrastructure means striking a balance between cutting-edge in-house advice and services on the one hand and external services provided by partner institutions on the other.

Infrastructure,
Research

To maintain our ability to respond flexibly to technical innovations and changing demands, we will continue our **Infrastructural Platforms** programme – a particularly responsive funding instrument perfectly suited for implementing state-of-the-art technological solutions for multi-disciplinary research (cf. A.2.2.2.1). A new measure within this programme is **funding for proof-of-concept projects** through which research groups can receive temporary support with and access to specialised technology. Once sufficient demand has been identified, a new core facility can be founded or an existing one expanded to include the required new technology. As a result of our analysis of strengths and weaknesses (cf. A.2.2.2.1, p. 23), we will streamline our governance processes to further facilitate access to and the efficiency and transparency of our research infras-

ture. We further plan to improve our performance in the areas of organisation and governance of our core facilities and will make sure to take the needs of different target groups into account. We will work particularly hard to address the data revolution, which massively affects the way we conduct research today. Accordingly, we now strive for an even closer integration of our Research Data Management services (as introduced above) and our core facilities.

The University of Konstanz has always strongly valued **early career researchers** and acknowledged their contribution to its institutional success. Beyond offering an excellent research environment to them, including equal participation in our core facilities (cf. p. 20), fuelling their visibility through our international networks strategy and Outgoing Centre (cf. p. 54) and granting them early independence while backing them with our support services (cf. pp. 12 ff.), we will introduce a number of measures that will be financed in the context of the Excellence Strategy. The strengths and weaknesses analysis has underlined the success of the already established **Young Scholar Fund** (YSF, cf. A.2.2.1.2, p. 16). The YSF will henceforward pool different funding schemes for postdocs at our university and offer funding lines for high-risk projects and collaborative projects between early career researchers or with partners from industry and society.

Early career
researchers,
Research

Building on our positive evaluation of the YSF, we will launch a similar format for the doctoral level. In particular, we will establish a **Doctoral Fund** to enable doctoral researchers to start building networks in their scientific communities; they will receive grants to travel to conferences or for research visits, and they can apply for money to organise workshops and for data collection. In order to initiate our early career researchers into writing as well as evaluating grant proposals, we will establish a body consisting of doctoral candidates and postdoctoral researchers to evaluate funding proposals submitted by doctoral candidates. For the recruitment of this committee, we will interact with the official representatives of these status groups, including the *Doktorandenkonvente* (doctoral researcher councils).

As a research-intensive university we must aim at offering the best working conditions for early career researchers. To help them in their career management, we will further strengthen our efforts in **academic staff development** through offering personalised counselling, individual job application trainings, starter coachings and assistance for team development. Needless to say, our personalised approach will continue to address most adequately the diverse backgrounds of every one of our researchers and complements our welcoming environment and our equal opportunity and diversity policies (cf. pp. 54 ff.). In the coming years, we will also push forward our **Diverse Career Paths Programme**. We plan to promote career talks between early career researchers and their supervisors, we will expand our career destination surveys and we will use these solid data as a base to create even more targeted support measures and develop subject-specific career sup-

port. One concrete measure will be an **Impulse Mentoring Programme** for doctoral and postdoctoral researchers with business executives (in collaboration with our alumni services) that offers contacts and insights into specific branches and their job opportunities.

We are committed to conducting research that complies with the highest ethical standards. However, we have yet to combine our existing services into a one-stop consultation service (cf. A.2.2.1.1) where researchers can receive guidance in regard to all ethical issues in academia. We will therefore introduce a central **Ethics Advisor** as part of our Research Support unit who will be able to provide assistance with a range of ethics-related questions, including, for instance, the ethical issues that must be addressed when writing a funding application. This work will complement additional measures we intend to implement for the purpose of raising awareness for research ethics among all our status groups. These include workshops, a lecture series and mandatory courses for students and doctoral researchers.

Research

We are requesting EUR 4,080,000 p.a. for all of these measures. This includes EUR two million p.a. to support our Research Initiatives, Freedoms for Creativity and Network Platforms. EUR one million p.a. will be invested in research infrastructure (not including RDM). We will invest EUR 1,080,000 p.a. in the YSF, the Doctoral Fund, the Research Support unit and in diverse training, coaching and mentoring programmes offered by our Academic Staff Development unit.

creative.together: research-oriented teaching

Teaching

Our reform university has been promoting research-oriented teaching since its foundation. In this area, we have identified data and information competency as an important and current cross-sectoral topic. The corresponding teaching measures are part of our “e-science” lighthouse project (cf. p. 41). Additionally, we intend to strengthen our existing support structures for transfer-oriented teaching (including service learning) and to initiate new teaching projects with researchers and external partners. We will develop new continuing education opportunities for our teaching staff and integrate them into our existing university didactics services. With the resources from the Teaching Innovation Fund (cf. p. 43), our staff will be able to design, test and implement entirely new educational formats in the area of research-oriented teaching. For the above-mentioned measures we are requesting funding in the amount of EUR 210,000 p.a.

creative.together: measures in the area of knowledge and technology transfer

Transfer

As we work with our external stakeholders to promote transfer (cf. A.2.2.2.3), we intend to address three key questions: How does our excellent research and teaching impact the world beyond academia? How does an engagement with the world beyond academia enrich our excellent research and teaching? And thus: What can the University of Kon-

stanz do to improve both? Our future efforts will therefore continue to focus on our three corresponding transfer domains: communication, application and advice.

Cycles of innovation develop through the interaction of excellent teaching, cutting-edge research, and productive transfer. Accordingly, we intend to integrate our **support services** (the Transfer in Teaching and UKIC teams) for researchers with transfer projects into one service team. This team will provide specialised support to each faculty, offering customised assistance for its specific areas of research, including legal advice on the exploitation of intellectual property (IP). As such, the team will be able to synergise with existing support expertise in business development, service learning and transfer in teaching, innovative transfer pathways in the humanities, and entrepreneurship.

At the University of Konstanz, we understand that transfer innovations cannot necessarily be monetarised, and that long-term transfer relationships tend to start with small-scale activities. Based on our extensive experience with internal competitive funding for research and teaching, and our successful **Transfer Platforms** during the Excellence Initiative (cf. A.2.2.2.3), we will further develop transfer-specific evaluation criteria and use existing competitive mechanisms to allocate funding for transfer projects. Resources will be made available for early-stage meetings between researchers and potential transfer partners, small-scale transfer activities, transfer activities designed to develop long-term transfer relationships with external stakeholders, outside-of-the-box transfer ideas and proof-of-concept phases (particularly for new business ideas).

In addition to providing space in the new *Forum Konstanz* and assistance with startups, we will promote additional networking activities through a new **Entrepreneurship Mentoring Programme** that will provide researchers with new business ideas access to advice, feedback and encouragement from successful partners in their field.

In order to further enhance the societal impact of our research and teaching excellence, increase the constructive input of target groups, and strengthen the resulting international visibility of our university, we will further **optimise our science communication**. Through our existing best practice communications services provided by the Communications and Marketing unit, combined with our strong commitment to transparency, our university will continue to meet our social responsibility in sustaining the public's trust in science (cf. the "March for Science") and countering pseudoscience. To these ends, we will implement two new measures: Our **new Science Writers** will make the entire life-cycle of our research-projects, including references to external and contradictory results, accessible to non-specialised audiences and embed our research efforts in the context of wider academic debates. A **new Editorial Service for Open Access** publications will provide media and other target groups with easily comprehensible summaries of research results. We further intend to enhance and expand our Event and Conference

Transfer,
International
positioning

Management services (cf. A.2.2.1.2). In the future, we will also **focus on online formats** for selected events in order to reach a wider and more international audience.

To further promote the exchange of knowledge and dialogue between academia and society, we will strengthen the role of our *Konstanzer Wissenschaftsforum* (Konstanz Science Forum – KWF) (cf. A.2.2.2.3) in two ways: First, we will further enhance its international exposure and integrate **more international perspectives** into future KWF events and activities by, for example, staging events outside of Germany. Second, we will create a fourth Executive Board position for a **Director in Residence**, which will be open to both national and international researchers and experts from outside academia. These external experts will supplement the internal academic expertise of the three other board members by bringing their knowledge and experience on the designated forum topics to bear on KWF events and, in extension, on university members and the public.

Transfer,
International
positioning,
Governance

Our university intends to interact more directly and effectively with national and international public audiences, alumni, potential partners and other targets groups. In the future, we will optimise our **relationship management** services by combining our national and international **alumni and networking activities** with our **fundraising strategy**. Furthermore, we plan to expand our **international communications** measures. This will allow us to (1) carry out target-group-specific campaigns to create awareness among existing and potential external partners for research topics and agendas that are important to our university, to (2) expand and intensify collaboration with international research networks and to (3) recruit talented students and researchers from around the world. In addition, we also plan to intensify our fundraising strategy in the humanities and social sciences.

Transfer,
International
positioning

Innovations arising from the dynamic mutual exchange of ideas, expertise and knowledge are difficult to quantify and evaluate. Beyond the traditional quantification of technology transfer (licences, income, products), we believe that a **combination of both quantitative and qualitative evaluation measures** will allow us to best capture and strategically evolve our transfer activities. This also involves including knowledge and technology transfer parameters in our Current Research Information System (cf. p. 41) and introducing a comprehensive quality matrix as part of our university's overall quality management system (cf. A.3.4).

Governance,
Institutional
renewal

For this objective we are requesting EUR 1,395,000 p.a. This includes: EUR 272,000 p.a. for our Transfer Platforms, EUR 250,000 p.a. for the UKIC, EUR 403,000 p.a. for science communications (incl. international visibility; Editorial Service), EUR 115,000 p.a. for conference management, EUR 155,000 p.a. for relationship management (incl. fundraising and alumni) and EUR 200,000 p.a. for the Konstanz Science Forum.

creative.together: excellent, international and inclusive

Excellence in research, teaching and transfer requires productive **international interaction** and collaboration as well as international visibility. Our success in the Excellence Initiative has increased both the university's international exposure and its degree of internationalisation at all institutional levels. The university is already truly international as far as the individual projects of its researchers, its institutional partnerships and its student mobility numbers are concerned. Our researchers are highly integrated into global scientific networks. Hence, and in consequence of the analysis of strengths and weaknesses, we aim both to (1) reinforce our position as an internationally competitive institution of higher education and research through increased internationalisation, and to (2) intensify interaction and collaboration between researchers in Konstanz and partners from around the world. The following measures will support our university's internationalisation efforts, our interconnecting structures and promote communication between countries and regions as well as between academia and society. They correspond to four areas of activity: making research even more international, internationalising teaching to a greater extent, responding to the consequences of internationalisation and defining the university's role in global society.

International positioning

Our recent analysis of Web of Science data has indicated that co-authorships between Konstanz-based and international researchers have doubled and, in some instances, tripled since 2008. So far, however, this internationalisation of research has been driven predominantly by individual researchers and is often confined to individual departments. The University of Konstanz already has strong, strategically selected international partners within and beyond the Young European Research Universities Network (YERUN) (cf. A.2.2.1.1, p. 9) and will continue to build on the numerous and intensive international contacts of its members. Additionally, the university intends to identify new partners for international cooperation across departments and on all levels, including its administrative and service units, in order to strengthen the internationalisation of research at the institutional level. The university is dedicated to **improving its existing support framework for internationalisation**, which is maintained by the **International Office**. In close cooperation with departmental internationalisation coordinators, the International Office will assure existing structures are adapted to the requirements of individual researchers and their departments' cultures. Specifically, these structures are required to increase the number of outgoing researchers on the doctoral and postdoctoral levels. In accordance with our strategy for early career researchers, and through the cooperation between Academic Staff Development and the International Office, the international mobility of doctoral and postdoctoral researchers will become part of their academic training (cf. A.2.2.1.2). Matching workshops and fact-finding missions will help researchers identify common research interests, as will participation in international conferences and

short- or long-term visits to international research institutions. In addition to “windows of mobility”, the university will provide other incentives for outgoing researchers such as mobility grants for visits to those international institutions in particular that the university has identified as future strategic partners. A new **Outgoing Centre**, modelled after our successful Welcome Center (cf. A.2.2.1.2), will provide advice and support with regard to all non-academic aspects of visits abroad. If necessary, the Outgoing Centre will assess risks for visits to specific regions, or under specific circumstances. The Research Support unit will assist prospective incoming and outgoing researchers from Konstanz and abroad with applying for the respective funding.

Due to our university’s exemplary student mobility structures, 42% of our students will have gained international experience by the time they graduate. Likewise, we will also increase our efforts to promote the internationalisation of teaching in Konstanz, in close alignment with measures described in the teaching chapter of this application (cf. A.2.2.2.2). Specifically, the digital transformation of teaching generates especially timely and exciting opportunities for international collaboration: On the one hand, international partnerships can be developed creatively through joint virtual forms of learning such as blended learning or virtual mobility. On the other hand, international partnerships can, in turn, develop and implement innovative international teaching formats. Modelled on existing co-operations with universities in Israel and South Africa, service learning formats will round out the university’s international teaching portfolio, as will an increase in research internships for students. Ultimately, international co-operations in the area of teaching will provide new perspectives not only on how but on what students are taught while contributing to the internationalisation of curricula. The university will further continue to share its support and management structures via capacity building projects such as the one currently implemented at Kyiv National Economic University.

The University of Konstanz invites and welcomes international researchers and students to the university and is committed to adapting its structures so as to facilitate not only the academic but also the social integration of its international members and their families. While the university already provides a number of measures to promote the latter (cf. A.2.2.1.2), a greater awareness needs to be developed for the differences between international academic cultures and systems of learning and teaching. Excellent research and teaching can only be achieved if culturally determined forms of communication are understood and appreciated. The university will therefore develop and offer **intercultural seminars** to facilitate the academic integration of international researchers, and to prepare them for leadership roles in culturally heterogeneous research teams.

In addition to international target groups, we support and welcome individuals with diverse backgrounds, irrespective of their gender, ethnicity or religion. Advancing **equal opportunity** and a positive climate for diversity are key pillars of our excellence in re-

Equal
opportunity

search, teaching and transfer. Experiencing diversity contributes to the ability to see things in a more comprehensive way by including different perspectives and personal experiences; this has also been shown to enhance institutional creativity. Hence, we will consolidate existing programmes and deepen current change processes in four major areas of activity. We will (1) reinforce existing fair and gender equitable structures across all university levels and raise awareness for any forms of explicit or implicit discrimination, we will (2) further promote family friendliness and diversity to foster an inclusive culture that encourages excellence, we will (3) increase female participation, in particular in our recruitment efforts and at the professorial level, and we will (4) further empower female early career researchers to pursue academic careers.

To strengthen the quantitative and qualitative involvement of female researchers, our university has formulated the goal of increasing the proportion of women in full professorships from 26% to 35%, and to reach 50% participation of female *Juniorprofessors* (including tenure track), junior research group leaders, postdoctoral and doctoral researchers by 2025. We will implement a **department-specific reward model** for innovative, effective gender equality measures that will encourage the departments to achieve their gender equality goals. New **contact persons** for gender equality and diversity in the departments will contribute to improved communication flows and participation, provide information about programmes and measures, raise awareness for gender bias, generate competence for gender equality and increase the transparency of decision-making.

We will offer “Meet the University” events for professorial applicants to highlight our welcoming culture and to introduce candidates to support services such as the Welcome Center and the Dual Career Service. **Family support** measures are already well developed, as highlighted most prominently by the *Kinderhaus*, and will continue into the future. Furthermore, measures are planned to better take into account the **individual living conditions of researchers**, for instance by offering diversity mentoring, an inclusion pool and by scheduling committee meetings at family-friendly times. Likewise, in performance evaluations and funding decisions, children, caring responsibilities, disabilities and impairments will all be taken into account. The underlying general values are currently brought together in the form of a **Code of Practice on Diversity**, which will further support efforts to promote diversity at the University of Konstanz (cf. A.2.2.1.2). In order to increase the gender and diversity competence of committee members and in leadership culture, guidelines and support for inclusive leadership will be developed.

To promote equal participation, we will intensify our active recruitment of (international) female applicants and fund **recruitment symposia** within the framework of our Konstanzia Programme (see box). For the **recruitment** of – in particular international – female professors, flexible financial means will be made available by the Rectorate. We aim to attain female participation of at least 40% in important decision-making bodies.

Reaching this goal will be facilitated by a **compensation scheme** intended to support female researchers who take on positions in decision-making bodies. If possible, diversity aspects should also be reflected in the composition of these bodies.

The Konstanzia Programme

The Konstanzia Programme focuses on three target groups: Doctoral students can participate in the **Konstanzia MEiN** (Mentoring with Experts and international Networking) programme that matches them with mentors and provides support for pursuing academic careers, founding spin-offs and taking on non-academic leadership positions. Postdoctoral researchers can take part in the **Konstanzia Fellowship** programme, which provides mentoring and coaching as well as networking, training and co-funding opportunities. **Konstanzia Invitation** (for recruitment) and **Konstanzia Duo** (in-house mentoring) are open to female *Juniorprofessors* and female junior research group leaders. Konstanzia Duo includes a mentoring relationship with established female professors at our university, which aims to provide an optimal introduction to university structures and its culture as well as the development of internal networks. Female professors can strategically network in the **Konstanzia Women's Club** and take advantage of coaching on the topics of committee membership, taking office and applications. **Konstanzia Transition** facilitates the transition between doctoral and postdoctoral phases and between the postdoctoral phase and professorship by offering temporary posts.

We aim to increase the proportion of women at different academic career levels – in other words to mend the “leaky pipeline” – through **gender-appropriate staff development policies and measures**. All measures for female researchers are pooled within the Konstanzia Programme (see box), targeting not only doctoral and postdoctoral researchers, junior research group leaders as well as professors, but also the transition periods between career stages. The modules of the programme are family-oriented and also address gender minorities. Furthermore, flexible job formats, family-friendly mobility offers and networking opportunities improve working conditions.

For this objective we are requesting EUR 1,505,000 p.a.: EUR 690,000 p.a. for our internationalisation strategy, and EUR 815,000 p.a. for our equal opportunity strategy.

creative.together: excellent governance for promoting institutional development

Our vision of a successful, internationally leading reform university is based on our institutional capacity to create new ideas, to address new challenges and to provide a supporting environment for research, teaching and transfer. We believe that well-organised, efficient, but also inclusive governance processes enable, rather than constrain, creativity. Our goal is to further strengthen and advance our university's well-established structures and to adapt them to a changing and increasingly digital environment by fostering

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institutional and employee creativity. We plan to implement measures in four areas, two of which (**Evidence-based and Responsible Governance and Quality Management of Research**) focus on the efficiency and reliability of administrative processes (cf. A.3.3 and A.3.4), while the other two (**Administrative Innovation through Employee Engagement and Strategic Change Management**) aim to foster change and innovation.

The success of any innovation initiative in governance and administration greatly depends on the competencies and motivation of all university members, who are also a core source and motor of creativity and innovation. In order to use this potential, we plan to further invest in our university's **innovation culture**. Following the successes of our Freedom for Creativity programmes in research and teaching, we plan to establish a similar format for administrators. The new **Freedoms for Governance** will allow them to anticipate and successfully shape our institutional development by providing opportunities and resources for developing new or streamlining existing administrative processes. Calls for proposals will be open for specifically tailored plans to enable all staff to adapt efficiently to changing working conditions, to temporarily join project teams, to take part in job rotation plans, to increase their part-time working commitment, or to devise other measures that help to improve their working environment.

Managing change processes at a university with diverse and complex workflows and responsibilities poses specific challenges for infrastructure and personnel. Projects advancing transformation either on the personal or institutional level require rigorous project management efforts, especially when coordinating several at the same time. While the responsibility for change management remains clearly anchored at the Rectorate level, we will install a **Strategic Projects Office** that will assist the Rectorate in supervising the implementation of decisions for change while also coordinating multiple projects and assuring the successful implementation of change at all institutional levels. This office will, for instance, bring together representatives from all hierarchical levels in workshops and area-specific working groups to discuss how to overcome the challenges of transformation and to elaborate measures for implementing new ideas and projects.

We are requesting EUR 1,000,000 p.a. to promote good governance. This includes: EUR 198,000 p.a. for Freedoms for Governance and the Strategic Projects Office, EUR 462,000 p.a. for strategic planning and quality management, EUR 340,000 p.a. for project management Excellence Strategy and administration.

A.3.3 Governance and management structures

The University of Konstanz's organisational structure (cf. C.7) is designed to promote top-level research and teaching. Its lean and efficient governance is highly effective in supporting our scientific disciplines and facilities, while simultaneously preserving the freedom of our researchers. These exceptional conditions allow us to carry out creative

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and globally competitive research. Our three faculties and their departments are at the core of our organisational structure, supported by the central units of the university.

The overall **profiling process** for setting research priorities is necessarily comprised of both bottom-up and top-down interactions, incorporating university members from the Rectorate, the Senate, the faculties and their departments, as well as ad-hoc committees, external peers and/or boards, and the **new Excellence Advisory Board** (cf. A.3.4) on the overall institutional level. Excellence institutions such as the *Zukunftscolleg* and our Clusters of Excellence are typically represented in the governing bodies and have, vice versa, a member of the Rectorate serving on their boards, so that information and strategies can be aligned to have an immediate and constructive effect.

Important **steering decisions**, including those related to structural and development planning, are made by the Senate (academic responsibilities) and the Rectorate (budget and overall responsibility), which is supervised by the University Council. For our governance, three aspects are important: (1) the clear strategic guidance of the university by the Rectorate; (2) a continuous institutional development process that meets the requirements for top-level research, teaching and studies; (3) performance-oriented resource allocation based on competition and peer-review.

In the following, we illustrate our **governance and decision-making processes**. At the University of Konstanz, adjustable resources for research have always been allocated in an annual, performance-oriented process based on internal proposals to the Committee on Research (AFF). Peer reviewing by AFF members leads to a recommendation to the Rectorate, which is responsible for the allocation of funds. This strategy is strongly appreciated by all university members because it enables effective resource utilisation, facilitates strategic reorientation and offers flexibility.

A large number of our measures are designed to be proposal-based (e.g. *Zukunftscolleg* fellowships, the various Freedom programmes) and evaluated on the basis of **internal or external peer-reviewing**. With respect to our core facilities, we will create a separate committee – related to, but not the same as the AFF – to be in charge of recommendations for the establishment, coordination, adjustment, reorientation, and, if necessary, closing of such facilities, based on competitive (peer) reviews and additional evidence provided by the Quality Management unit and the BICC (cf. p. 43).

The University of Konstanz possesses a centralised and very effective administration that closely collaborates with the staff in the faculties and departments. Our university members generally acknowledge this organisational configuration to promote cooperation and effectiveness. This applies to our central administrative units, including our financial, human resources and legal services, as well as to the academic support services highlighted throughout this proposal. Together, they support our researchers by sustaining excellent working conditions and providing them with the space and resources they

need to transform their creative potential into research, teaching and transfer excellence. We are convinced that our university's outstanding organisational and decision-making structures form an ideal starting point for achieving our strategic objectives. The effective implementation of the measures described in this proposal will ensure that our university will continue to successfully anticipate and overcome future challenges.

We affirm that the legal requirements for the measures identified in this proposal – including the construction measures – have been met.

A.3.4 Monitoring for quality assurance and success monitoring

Quality assurance and success monitoring at the University of Konstanz are both essential for ensuring that the implementation processes for its measures are successful.

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It is important to our university, however, that these processes do not lead to a "bureaucratisation" of science and research. At our University, we practise quality assurance that takes the needs of our researchers into consideration and supports our Rectorate in the strategic development of our university. It has become standard practice for us to use a systematic methodology when evaluating our own measures: We have experienced a very good governance during the Excellence Initiative with a multi-dimensional quality management system that draws on the combined expertise of our staff units Quality Management and Controlling as well as the Division of Financial Affairs.

For years, our departments and university institutions have been systematically evaluated by our **Quality Management** staff unit, which reports directly to the Rectorate. Our data-based evaluation procedure (cf. A.2.2.1.1) combines internal and external review processes with strategic development planning. It is based on a comprehensive and university-wide quality matrix system that is currently being phased in across all performance areas and strategic fields of action. The **project management** for our measures and the corresponding data-based evaluation within the framework of the Excellence Strategy will be overseen by the Rectorate and coordinated primarily by our **Controlling** staff unit. The existing project management unit, which has monitored all measures implemented during the Excellence Initiative, will also provide extensive strategic analysis of our performance over the next seven and more years. This strategic analysis will be based on data-based evaluation, a range of key performance and quality criteria including output (direct results), outcome (mediate results) and impact targets. It will be enhanced by the **Business Intelligence Competence Centre** (BICC, cf. A.3.2.1) in the future, which will support the Rectorate in reviewing the effectiveness of our measures. The **Division of Financial Affairs** will continue to support our researchers and the Rectorate by providing the professional financial management of our measures, thereby ensuring that the funds are used in accordance with the funding stipulations. It manages the allocated resources and advises the respective units and facilities on financial issues. The

performance-oriented allocation of funds at the university (cf. A.2.2.1.1 and A.3.3) helps to ensure that the resources are used to maximum effect. In addition, a new **Excellence Advisory Board** will be installed, which will be composed of internationally recognised researchers and research managers, and which will provide an external perspective on our Excellence measures and advise the Rectorate on broader related trends.

These four quality control mechanisms allow us to react quickly if our measures do not achieve the desired results. When measures are found to be ineffective, we do not hesitate to adjust or discontinue them if necessary. We are also flexible enough to implement new measures within the overall strategy, thereby optimising our approach to the selected goal. The introduction, continuation, adjustment or discontinuation of measures is always decided by our Rectorate and Senate in consideration of our overall strategy and in consultation with all involved university groups.

Anticipated effects

Our vision for our university is to be future-oriented, innovative and agile. We believe that new knowledge and solutions for urgent societal challenges are developed in diverse interdisciplinary research contexts. Our overall strategy *creative.together* stands for realising our scientific potential by generating creative opportunities for cooperative and constructive interaction. Our members' identification with our university is high, our management staff well prepared for and sensitive to diversity issues and our working climate excellent – not least because we anticipate potential conflicts and resolve them in a fact-based and solution-oriented manner that is based on respectful dialogue.

We are confident that the interactions and synergies between our five objectives (cf. A.3.1) and their measures will generate a strong creative dynamic for decisively advancing our cutting-edge research and institutional development. Within the next seven years, we will take advantage of our overall strategy *creative.together* to further develop and enhance our research profile so that we are able to submit three to four proposals for Clusters of Excellence in the next round of the competition. Our immediate goal will be to strengthen the interplay between our own performance areas, between academia and society more generally and between our university and its partners around the world, as well as to boost our university's capacity for institutional renewal. In the long term, we expect our measures to sustainably strengthen our top-level and internationally competitive research through the continuous development of our "Culture of Creativity".

Ultimately, the overall strategy outlined in this proposal will help us to safeguard and expand our university's role in academia and society as a place for free and democratic thought and action. With our "Culture of Creativity", we strive to positively impact the course of innovative global research and thus to enhance our status as an internationally competitive research university.



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