

# Research

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KU Leuven has created a distinct profile as one of the leading research-intensive universities in Europe. In its research, it places a strong stress on quality, creativity and innovation. In its research policy, it wishes to create an ideal climate needed to reach these goals. At the present moment, KU Leuven is in an excellent position to contribute actively and competitively in helping Flanders to play an important role in the European knowledge society and economy.

Scientific research forms the central task of our university and this goes hand-in-hand with training its BA, MA and PhD students. Academic research, in all its disciplines, creates knowledge and contributes to our culture and civilisation, to our welfare and wellbeing and it drives the debate in and on society. Scientific research has a binding effect and is a shared responsibility of all academics with a view to a sustainable future.

My 2013 electoral programme contained the main outline of a new research policy: a clear choice for more quality and less quantity, support for talented young people, attention for both disciplinary and interdisciplinary research all carried out according to the highest ethical standards. This would also involve a facilitating bottom-up policy with considerable trust in the researchers who take the initiative. We have taken considerable steps together the last four years in renewing research policy. This work is still not complete. This is why we are asking you to put your trust in us and to work together in taking further and new steps over the coming four years.

## 1. Internal Research Funding: Continuity and Adjustments

To prevent researchers from spending too much time writing out applications for internal, more often than not through different channels and for small sums of money and always with little chance of success, we have reformed KU Leuven internal funding. The new funding system, 'Internal Funds' put an end to piecemeal project funding, made room and time for external project applications, and created levers for external funding and multi-disciplinary projects. Evaluation criteria apply specifically to the three funding categories (C1 for curiosity- and hypothesis-driven research; C2 and C3 for projects with a long-term or short-term social or economic impact). Cooperation is rewarded without restricting individual initiative.

In recent years, we have also extended possible participation by young researchers in Internal Funding. Information sessions and workshops on writing project applications have created the necessary impetus for beginning applicants.

The reformed funding model offers opportunities to all and has yielded the following results:

- Chances of success are favourable on the whole (between 33% and 51%).
- Young (tenure track) researchers supervise more than a quarter of the awarded projects.
- External peer reviewers consider one third of the initiated projects to be 'strongly interdisciplinary cooperative projects'. The recently introduced evaluation bonus considerably increases the chances of success of interdisciplinary projects.

Despite government cutbacks, research expenditure is on the increase: EUR 466.6 million this year. This shows the tremendous power and impact of research at our university. The recently included levers in the new funding model have borne fruit. We are attracting external funding at an increasing rate. The share allotted to KU Leuven has increased substantially both in terms of approvals for FWO funding for junior candidates (up by 7.7% since 2014) and in terms of strategic SB doctoral grants (up by 12% since 2014). We have also moved forward in terms of FWO project funding (up by 4.3% since 2014). Next to this, KU Leuven teams have been successful in Hercules, SBO and TBM projects. More than 81% of our total research expenditure is financed by external funding. Project research through LRD also continues to rise. According to Reuters, KU Leuven is the most innovative university in Europe.

Research advisers were brought into the Humanities to help guide interdisciplinary project applications like Horizon 2020 for example. Extra funding for small-scale research equipment was awarded to teams working within Biomedical Sciences and in Science, Engineering and Technology.

We wish to work together with the faculties and departments in improving PhD efficiency, not only with a view to keeping our share of the BOF 'key' (distribution mechanism).

Next to the above, to guarantee the objectivity of evaluations and to reduce the administrative burden, the review system for project and mandate applications needs to be simplified and improved.

## 2. Young Research Talent

Young talent is the future of our university. Good guidance is essential in this respect. Our three doctoral schools are responsible for recruiting, training and supporting doctoral students. The renewed university-wide doctoral regulations guarantee more clarity and structure in the doctoral process. Through its extended network of confidential advisers and the strengthened role of the ombudsperson, it is now easier to draw attention to and solve problems. The 'PhD student and supervisor charter' sets out both the guidance required from the supervisor and effort required from the student. From now on there is only one application for enrolment, progress and completion of a doctorate.

A start credit was put in place in 2014 for young newly appointed members of the senior academic staff. Each of the 141 young colleagues received a credit of EUR 100,000 and the beginning of their mandate. In this way, they can develop their own line of research and become competitive in acquiring further funding.

## 3. Basic Funding

We will continue to optimize the 'Internal Funding' model and adapt to new requirements and requests. To do so we will remain in dialogue with the Research Council, the Research Policy Council, the IOF Council and the Impulse Council with a view to expanding start funding.

A thorough-going analysis brought to light forms of acute underfunding among some members of the senior academic staff. Without putting the policy of excellence in danger, we wish to make sure that all members of the senior academic staff have sufficient funds at their disposal to conduct research in a practicable way. This is a logical consequence of the building onto the system of non-competitive start funding for young senior academic staff members.

#### 4. Research in a Multi-Campus Model

KU Leuven has been a multi-campus university for a number of years. Research is on the increase in the new campuses. We will continue to follow our active policy of helping to increase their research capacity and effectivity. The new campuses must be able to set out their own profile by following their own avenues of importance while bearing in mind external development such as the Flemish Cluster Policy and European initiatives.

The Impulse Fund was set up for these purposes, its goal being to stimulate participation of researchers in these campuses in internal and external funding. Additional means provided by the Flemish Government will make new applications possible in the future.

Our researchers on the campuses should not miss the opportunity to anticipate and respond to new social challenges and questions.

We want to be present regionally in Flemish Government programmes such as its spearhead clusters and Tetra projects. Our cooperation in *Flanders' Food*, *Energyville*, *Flanders Make* and other projects has created important added value.

Next to this, we will take the steps needed to help academize art programmes in a balanced and adequate way.

#### 5. Taking the Lead in the Field of Flemish and Federal Research

25 years ago, public government investment in scientific research amounted to 0.67% of the gross domestic product. This dramatically low amount has hardly risen and now stands at a mere 0.73%. That is why we will not rest until the Flemish Government reaches the long-promised 1% norm of investment. In real terms, this means that from today until 2020, the government should invest up to EUR 250 million per annum accumulatively in scientific research and knowledge institutions.

KU Leuven has played a key role in forming the new regulations concerning the FWO Council, including an increased presence of our university in the council. We bring weight to bear on planned reforms to the FWO, such as in the evaluation and funding of mandates and projects and in the composition of FWO panels.

We play a role in the VLIR in tracing and following research and innovation affairs in Flanders. Our points of focus are: optimal proportionality in attributing research funding across universities and companies, balanced funding for fundamental and applied research, the protection of doctoral statutes and balanced BOF and IOF (Industrial Research Fund) distribution systems.

In the near future, the Flemish Government will award additional senior academic BOF staff mandates. We will not miss these opportunities.

The initiatives taken by the Flemish Government to cluster scientific and industrial competences into a limited number of research domains will probably have a considerable impact on the field of innovation in Flanders. This portfolio has received our full attention, among other things, through our cooperation with LRD and through our *'entrepreneurial ambassadors'*, an inter-disciplinary IOF team at KU Leuven.

To conclude, we have set up stimulation initiatives to respond to the opportunities offered by the federal FED-tWIN programme. This programme aims to set up cooperation between universities and federal scientific institutions and includes the prospect of creating 125 permanent mandates here in Belgium. The Federal Government will finance the mandates for a full 100% for the first five years and for 50% for the following five years. If the faculties succeed in coupling the FED-tWIN positions with their 'regular' senior academic staff mandates, this will open up new budgetary possibilities. The job descriptions that need to be written should correspond as much as possible with the current research profiles at KU Leuven.

## 6. KU Leuven as a Leading European University

The internationalisation of research runs like a golden thread through our research policy. We have invested a lot in raising our level of participation in EU applications, among other things through such initiatives as the VES programme (preparatory funding for coordinators) and runners-up funding (for researchers on the allocation reserve list). This has borne fruit. KU Leuven has acquired 194 Horizon 2020 projects so far and holds a prominent position in the ranking for successful applicants and is in the company of such universities as Oxford, Cambridge, Copenhagen, Imperial College and University College London. In the last three years we also have the highest number of Marie Curie *Innovative Training Networks* in Europe. This shows the competitiveness and international renown of our researchers.

Consolidating and strengthening our excellent position requires paying permanent attention to the quality of our research output, research climate and the training of young researchers. We are making an all-out effort to attract high-level talent through such channels as ERC, Odysseus, Marie Curie *Innovative Training Networks* and post-doctoral grants. In the last few years, the number of ERC mandates has become a benchmark for an institution's level of excellence and KU Leuven's various performances at this level has made it highly visible in the international academic community. To maintain the strong position of KU Leuven we have worked out a targeted policy with the departments and faculties, among other things by opening up positions for senior academic staff for researchers with ERC- or Odysseus grants.

Cooperation with specific EU partners has also been intensified. CELSA (Central Europe Leuven Strategic Alliance), which was formed in May 2016 between universities in Budapest, Leuven, Ljubljana and Prague, is designed to mobilize researchers for Horizon 2020 and for education programmes (Erasmus+). The new *CELSA Research Fund* is part of a European broadening strategy and finances cooperation between CELSA partner institutions. These projects should lead to quality applications within Horizon 2020 and FP9.

We are also working on a new international initiative for cooperation with leading European universities through bilateral research projects.

The consequences of the Brexit are as yet unclear. It is my firm conviction that KU Leuven should maintain its close relations with the British academic world. The level, culture progressive research policies of British universities form an unmissable trump card. Together with the LERU, KU Leuven devotes itself to making sure that the European institutions propose a Brexit that will not stand in the way of cooperation in research and education. In this respect, see my interview in the [Times Higher Education](#).

Through the use of EU funding, we have also strengthened our role in large international consortia that will become increasingly important in determining the future of science. In this way, we have

contributed to developing a simplified and more accessible FP9 framework programme that mainly funds disruptive ideas. KU Leuven carries out efficient lobby work through the most diverse channels such as the European Parliament, the European Research Council, LERU, EC Advice Council for Marie Curie activities, *Vision2020*, *the Horizon Network*, EARMA, the Flemish Europe Platform, etc. There we plead for a necessary balance between research, innovation, and valorisation and sufficient funding for basic research. To allow for the required creativity and innovation, projects should become less prescriptive and more bottom-up in nature within the framework of broad missions like those against *infectious diseases*, for example.

## 7. Knowledge at the Service of Society and Industry

KU Leuven puts its knowledge to the service of the community in all its aspects.

The resources for project research through LRD have grown impressively, with an exceptional increase of 15 % in 2015 and a continued growth of 2.3% the following year. KU Leuven also plays a key role in the *European Institute for Technology* (EIT). It supports world-class innovation in the framework of Horizon 2020. In this way, the EIT wishes to stimulate economic growth, entrepreneurship and job creation through cooperation with companies, research and education institutions. These forms of cooperation take shape within *Knowledge and Innovation Communities (KICs)*. KU Leuven is actively involved in four of the six KICs that have been set up so far: *Food*, *Health*, *Raw Materials* and *Energy*. KU Leuven plays a leading role in the *Food KIC*.

We also promote entrepreneurship among students and academics. LCIE, the *Leuven Community for Innovation Driven Entrepreneurship* stimulates and facilitates entrepreneurship and business-mindedness among students, researchers and professors and in doing so involve student associations, faculties and departments, LRD, Leuven *MindGate* and the Province of Flemish Brabant.

We continue to expand valorisation training for doctoral students. The five-day course on all aspects of research valorisation and knowledge transfer including cooperation with companies, the protection of intellectual property and licences and the creation of spin-offs, organised by the LRD, IOF and the doctoral schools are all part of this strategy.

## 8. Scientific Integrity and Data Management

KU Leuven feels very strongly about scientific integrity. We wish to be pioneers in our policy and procedures. We have developed a preventive policy by creating a positive research culture. We take immediate action if our ethical standards are not respected, without attacking anyone's human dignity.

Researchers can use the on-line tool, LIRIcs (Leuven Institutional Research Integrity - culture and self-reflection) to learn about standards of integrity or find advice on dilemmas that might arise during their research. Since 2014, all doctoral students have to follow the new course in Research Integrity. University-wide guidelines have been drawn up regarding sound authorship and data management. Our counsellors on research integrity help researchers with questions on integrity. KU Leuven is also involved in drawing up new regulations for the Flemish Commission for Scientific Integrity (VCWI) and in the European code of conduct for research integrity for Allea (All European Academies).

It is absolutely necessary to further this policy on prevention, awareness raising and clear procedures. European and Flemish research funders are justified in demanding stricter ethical norms. We train and support researchers in this respect.

Over the past few years, we have been working on coherent data management including clear regulations about legal ownership of research data. We are obliged to do this ourselves and cannot allow data management to be done by external often commercial providers. The ‘*next generation Lirias*’ publication archive database is part of this policy and is almost ready.

## 9. Further Raising the Visibility of KU Leuven Research

Visibility of the leading KU Leuven research is essential for the creation of international research networks and for attracting post-doctoral researchers and PhD students. For this reason, we ask researchers to dedicate 1% of their budget for large projects to science communication.

The Open Access support desk, set up in 2014, is proactively involved in making *full texts* of KU Leuven publications available for interested parties. This approach together with correct and consistent indication of KU Leuven affiliation also help increase visibility.

Making research findings known to a larger audience is the permanent task of the Science Communication Expertise Unit. Other existing and planned initiatives further heighten the visibility of research at KU Leuven (DOCville, documentaries, open access publishing of books by Leuven University Press, MOOCs). We have to take further steps to develop and distribute digital image and video materials. Limel allows us to do all of this. Creating impact (through *altmetrics*, *digital science media*, *data sharing*, *scholarly communication*) is essential in making our knowledge available.

We are dealing with and communicating about animal experiments in a totally different way now. Transparency is central in this respect. We find alternative means and animal welfare extremely important. At the same time, we show that animal experiments are necessary for progress in science, such as for the treatment of neurodegenerative diseases, for example. Though we find animal welfare extremely important, we refuse to adopt a philosophical vision that makes no distinction at all between the value of a human life and that of an animal. KU Leuven has opted for open and transparent communication on animal experiments and for public dialogue with the community about the how and why of research and about the significant role in preserving human health and life played by research using animal experiments.

The main points of research policy for the next four years are the following: once again making a resolute choice for quality rather than quantity, maintaining the norm of sound high level scientific research, supporting young talent by extending start funding, in a similar vein, making sure that there is sufficient basic funding that can create leverage without threatening excellence, supporting researchers at the various campuses, energetic involvement in politics to make sure that the government achieves the 1% funding norm for academic research by 2020, further developing a more efficient senior BOF academic staff system, fostering academic integrity and promoting business-mindedness among doctoral students and post-doctoral researchers and reducing drop-out rates. To conclude we wish to raise the visibility level of KU Leuven research and strengthen our position as an absolutely top-level European university.