KU Leuven was founded in 1425. In addition to being one of the oldest universities, it is also the most innovative university in Europe (Reuters). With more than 65,000 students from over 140 countries and – the university hospital included – more than 20,000 employees, it is also the largest university in Belgium. 15 faculties offer bachelor's and master's programmes at 10 locations in Flanders. The programmes are based on the research of more than 8,000 researchers.

KU Leuven is ranked 43th in the Times Higher Education rankings and 63th in the QS World University Rankings and remains the highest-ranked Belgian university. It also hosts several important international networks, such as the League of European Research Universities (LERU). KU Leuven is a co-founder of this organisation. Its members are leading European universities such as Cambridge, Oxford, Heidelberg, Sorbonne and Zurich.

In recent years KU Leuven has invested in joint doctoral programmes. "Such programmes not only lead to an expansion of our own research capacity, but also play an important role in the further development of research, innovation and international anchoring of the Flemish region," says Jan D'hooge, Vice Rector Research Policy. Currently, research at KU Leuven was the source for 861 patents – and 184 spinoffs. During the period 2002-2023, these spinoffs collected more than 2.1 billion euro in external investment money.



© Rob Stevens / KU Leuven - Vice Rector Jan D'hooge

"We focus our research on scientific excellence and at the same time aim for the research results – possibly in the long term – to have a positive impact on society, especially on the major challenges of our time such as health issues, energy

consumption, climate change and food supply. These wicked problems can only be effectively tackled through a multidisciplinary approach. In order to build bridges between different scientific disciplines, we have created 21 thematic ‘KU Leuven Institutes’.”



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Balance

“To address the wicked problems of today and anticipate the unknown challenges of the future, we advocate for a balanced approach to funding, ensuring an even distribution between fundamental and applied research, as well as between curiosity-driven and application-driven studies. Ideally, this balance should be approximately 50/50. When research results are translated into applications for the market, the respective researchers play a very active role, which also helps them understand the challenges faced by both industry and society. These insights, in turn, enrich and inform their fundamental research lines. Of course, not every faculty has the same possibilities to translate research into economic applications. But examples do exist across all faculties. For example, in the Faculty of Arts, we work on a valorisation programme aimed at improving the management of museums.”

Bottom-up

Key to the success of the university is the autonomy and creativity of the researchers. “As university board, we therefore do not impose strategic themes on our researchers, but we try to support what is starting to grow. This bottom-up view does not mean that we do not have a number of flagships, linked to for example ERC grants or Methusalem funding by the Flemish government. Only absolute top projects and researchers with a strong proven track record are eligible for these programs.” Over 100 ERC grants for example involve KU Leuven researchers, who are creating value for society with their groundbreaking discoveries.

Teamwork encouraged for initiating international collaborations

“We are making grants of 30k euro available internally for initiating international collaborations. A research council decides whether or not to award them. The successful applicants can use this money to organize workshops, conduct pilot experiments or buy off employees’ time.” The judging is no longer based on purely quantitative metrics such as the number of publications. “We are now adding more nuances to the evaluation. Our HR department is working on implementing this new approach. In doing so, we also look at – amongst others – whether the applicant can provide sound leadership and is a good team player.”



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European success

KU Leuven has been highly successful in obtaining funding from Horizon Europe, the European framework programme for research and innovation. It is the highest ranked university in Horizon Europe and the first university to succeed in securing more than 250 million euro in funding. “The Flemish research and innovation policy provides the necessary support. Flanders makes research budgets available that allows universities to develop policies and support researchers. In this context, we have created the necessary internal structures to encourage our researchers to submit proposals that qualify for European subsidies and to help them write their proposals. From the resources that we

are allowed to use ourselves, we give an extra 50,000 euro to researchers who coordinate European multi-partner project as a top-up," explains D'hooge.

Dynamic Leuven researchers can enjoy more incentives. "25% of European grants go to the institution where the research is done, to cover the so-called indirect costs. We apply the policy of allocating 8% of the direct cost as free resources to the research group after successful completion of the project in question. With this, they can, for example, start a follow-up study or initiate a new study. This can incentivize researchers to apply although it implies a financial contribution to the project of the university as the total amount of indirect costs is more than the 25% of the EU grant's direct cost."

Feedback

"For project calls issued by the internal funds of the university as provided by the Flemish government, we employ a highly systematic approach. A group of excellent researchers and innovators within the university serve as members of evaluation councils, the Research Council and Industrial Research Council. These councils review all research proposals, usually assisted by external reviews, and provide feedback to applicants, so that people who apply for research grants receive valuable guidance and are better informed about the expectations of funding bodies."

"Our researchers have to tackle various obstacles in their day-to-day activities and are increasingly confronted with red tape because of new regulation imposed by governments and/or funding agencies. Many of them have to combine their research with sometimes quite large teaching assignments. Compiling the necessary files to apply for projects and grants and to report on their research, give presentations and lectures increases their workload further. To reduce this pressure, we have started an internal service in 2024 to evaluate which project calls are best suited to which researchers, then pass on that information in a targeted manner and assist in drawing up the necessary applications. We are experimenting with artificial intelligence in this regard. In this way, we also limit the tendency of researchers to outsource these types of tasks externally."

Blood spatter patterns at crime scenes

Investigating crime scenes is essential for police services to determine exactly what happened. Unfortunately, this often involves manual work that takes a lot of time. KU Leuven has developed a new tool called HemoVision that, using smart algorithms, can analyse a blood spatter pattern in less than fifteen minutes and display the possible impact on the victim in 3D. The technology was optimised and tested on real crime scenes.

“With the help of smart algorithms, we trained our tool to generate various impact possibilities based on a particular blood spatter pattern. Detectives can use these to test and, if necessary, exclude their various hypotheses. With the expertise of the UZ Leuven department of forensic medicine and through collaboration with the Federal Judicial Police, we were able to test HemoVision on real crime scenes and adapt it to the needs of future users,” explains researcher Philip Joris, who founded Forentrics, the spinoff behind HemoVision.

“The advantage of HemoVision is that the tool not only works quickly but also very accurately. This saves detectives a tremendous amount of time and effort,” adds cofounder Ruben Moermans. The KU Leuven researchers hope to convince various international players to use HemoVision.

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