

Evolution of KU Leuven Research & Development (LRD), one of the first Technology Transfer Offices in Europe

The structure of KU Leuven is multi-layered and is divided into the following areas: educational policy, research policy and sixteen faculties. There is no formal hierarchical structure - each entity has its own board, develops its own strategy and each professor is free to design his or her own research agenda. The Research Policy Council is in charge of preparing the research policy and of evaluating the proposals from KU Leuven researchers who apply for funding from the University Research Fund.

At the operational level, KU Leuven Research & Development (LRD) is responsible for the exploitation of research and the management of industrial research projects. LRD's activities are, however, not limited to the University, but widely implemented in coherence with the regional context; hence the University has numerous active collaborations with research institutions, other HEIs, local SMEs and major international firms.

Innovative Features

- HEI - Business/External Relationships for Knowledge Exchange
- Pathways for Entrepreneurs

The KU Leuven is situated in Flanders, the Dutch-speaking Northern part of Belgium which accounts for about 60 per cent of Belgian businesses. The most widely used anti-HIV drug¹ and the international standard for online encryption (AES)² are just two of the highly impactful breakthroughs to come out of this university's research. KU Leuven was created in 1425 and is the oldest existing Catholic university in the world. It is a comprehensive multidisciplinary institution with a large number of faculties and departments organised across ten campuses throughout a number of decentralised locations. It is also the largest university in Belgium, with over 65,000 students and more than 13,000 staff.

LRD, Leuven Research & Development was founded in 1972, and was among the first technology transfer offices (TTOs) in Europe. It is an entity separate from the rest of the University that operates as an autonomous business unit with its own budgetary and human resources structure. LRD has significantly evolved over the years to adapt to the University's complex structure. It has shifted from a specialised division towards a matrix structure and has transformed into a cross-university TTO that offers its services for the entire KU Leuven Association, which also includes four University Colleges and one School of Arts.

LRD consists of a central multidisciplinary team composed of over 140 experts supporting technology transfer and researchers, numerous research divisions that gather together researchers from across the boundaries of departments and faculties, as well as a group of innovation coordinators who act as permanent liaison officers between LRD and its divisions. LRD is in charge of managing the industry component of the KU Leuven's research and development portfolio and offers advice and coordination as well as administrative and legal

¹ See <https://lrd.kuleuven.be/en/ip/cases/the-worlds-leading-anti-hiv-drug>.

² See <https://lrd.kuleuven.be/en/news/over-2-billion-devices-and-the-entire-internet-infrastructure-use-kuleuven-encryption-algorithm>

support for KU Leuven researchers. LRD manages the patent portfolio of the university, including the financial monitoring of the patents. It also provides advisory and support services for any IP-related issues.

LRD collaborates with other technology transfer offices and is, as the only TTO in continental Europe, a member of [TenU](https://www.tenu.eu/), an international collaboration of ten leading TTOs.

Some examples of major initiatives that foster knowledge, entrepreneurship, technology transfer and spin-off creation at KU Leuven include:

- **Developing incentives and reward systems to foster knowledge and technology transfer** – Income from industrial projects is not centralised and redistributed. Instead, academics can perform their research within so-called LRD divisions that are entitled to accumulate financial reserves based on the benefits they generate via industrial collaborations. LRD divisions are also entitled to participate both intellectually and financially in the spin-off companies that they have developed. Individual researchers are entitled to salary supplements based on the net proceeds from their contract research and consultancy activities; they are also entitled to receive a percentage of the income generated from license agreements
- **Provision of access to capital through a financial ecosystem:** the KU Leuven **Industrial Research Fund (IOF)**³ supports innovative research and development projects with clear industrial or societal applications. With about 40 innovation managers in six thematic domains, it facilitates the cooperation between research groups and external partners like SMEs and industry. In addition, LRD has created different financial instruments in order to meet the need for financing projects at an early stage of development. Regarding seed funding, the **Gemma Frisius Fund (GFF)**⁴ was created in 1997 and offers seed capital to stimulate the creation and growth of KU Leuven spin-off companies. Over the years, GFF has invested € 45.6 million in 69 spin-offs (status end 2021). Together with the Wellcome Trust, a British health research foundation that supports science to solve urgent health challenges facing everyone, LRD co-funds the **WT-LRD Ignite Grand**.⁵ It provides researchers access to external expert consultants to help overcome essential barriers in their translational research
- **Encourage student entrepreneurship:** The entrepreneurial community **KU Leuven KICK**⁶, which is part of the Spin-off team of LRD, aims at stimulating the entrepreneurial mindset of students and strengthening entrepreneurial skills. To this end it offers multiple formats: the intracurricular course "Product innovation Project", extracurricular workshops in the format "KICK Essentials" and the "Learning Garage", theoretical courses in the "KICK Academy" and a business plan competition "KICK Challenge". For instance, in the "Product innovation Project" student teams work on a sponsor's problem over an academic year. KU Leuven KICK also provides coaching for students with an existing business idea with the "Incubator Track", where students jointly learn about the next entrepreneurial steps, or individual Coaching & Advice by KICK's experts

³ See <https://www.kuleuven.be/english/research/iof/vision-mission/vision>

⁴ See <https://lrd.kuleuven.be/en/spinoff/gemma-frisius-fund>

⁵ See <https://lrd.kuleuven.be/en/wellcome>

⁶ See <https://lrd.kuleuven.be/kuleuvenkick>

- **A proactive attitude towards PhD students and postdoctoral researchers:** early in their scientific career, PhD students and postdoctoral researchers are made aware of the importance of carefully managing (possible) intellectual property stemming from their research. To this end, a Doctoral School training course is organised every year in which student teams develop an exploitation plan of their research under the supervision of coaches with valorisation expertise.

Results/Achievements

There have been many achievements due to the interaction and collaboration of the regional actors from which KU Leuven benefits and to which it significantly contributes. Some of the activities and results include:

- 149 high-tech spin-off companies have been created thus far (end 2021), directly employing more than 7,000 people.
- Support for spin-offs provided by LRD, which builds on the availability of the KU Leuven Innovation and Incubation Centre located on the university's campus. It is jointly owned by the university and the regional development agency.
- Long term investments in infrastructure, allowing valorisation activities to grow together with the expansion of research activities at KU Leuven. This is done through the construction of science parks and incubators, which doubled in number over the past ten years. The establishment of Leuven Bio-incubator in partnership with the Flemish Institute of Biotechnology (VIB) and a local biotech company (AVEVE) to support biotech spin-offs from the university, is but one example. Two science parks were developed around KU Leuven by the region and the city, another one is under construction. They provide space and services for university and business spin-off companies.
- Contribution to the establishment of the foundation Leuven.Inc⁷ and subsequently Leuven MindGate⁸, an organisation that highlights the leading international role of the Leuven Innovation Region in the fields of health, high tech and creativity. MindGate promotes the Leuven Innovation Region via communication activities and supports networking and collaboration initiatives. MindGate's network has more than 330 member organisations.
- LRD supports the development of a strong ecosystem for research on viruses and other diseases by being involved in the patent and licence portfolio and connecting it to the industry. Among the relevant KU Leuven institutions in this field are the renowned Rega Institute (including the laboratory VirusBank Platform that works on viral epidemics/pandemics) and the Centre for Drug Design and Discovery⁹. An example of a successful KU Leuven spin-off in this field is AstriVax, a company that develops novel vaccines and that raised € 30 million seed capital in its start-up phase.¹⁰
- Creation of a legal framework by the Flemish Government to regulate IP-related issues and foster technology transfer

⁷ See <https://www.leuveninc.com/about>

⁸ See <https://www.leuvenmindgate.be/>

⁹ See <https://www.cd3.be/>

¹⁰ See <https://nieuws.kuleuven.be/en/content/2022/ku-leuven-spin-off-astrivax-raises-30-million-euros-to-build-vaccine-platform>

Further Reading

Website of KU Leuven Research & Development: <https://lrd.kuleuven.be/en>

Technopolis: Institutional Case Studies on the Links Between Higher Education Institutions and Business

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