Vrije Universiteit Brussel (VUB) gathers over 22,000 students from 145 countries across more than 150 programmes. With a staff of over 4,000, the university fulfills its mission of education and research. More than 70,000 alumni have made a difference worldwide as motivated entrepreneurs, critical researchers, and engaged citizens.

Among its academic staff of over 2,600, VUB also hosts more than 2,100 PhD students, of whom just over half are international. They contribute to over 3,300 publications per year, with almost 250 PhD defenses annually, not including numerous Joint PhDs.

Research budgets

“Our annual research budget amounts to almost 33 million euros,” states vice-rector of research Pieter Ballon. “Additionally, we receive 18 million euros from the Research Foundation Flanders for fundamental research and 13 million through private sector collaborations. Moreover, 80 million euros come from public project funding, including competitive grants from the European Union and the Brussels Region, often in partnership with the private sector.”

VUB ranks among the top 20 in terms of funding from the EU’s Horizon Europe programme. Between 2014 and 2020, its researchers secured 205 projects worth 103.8 million euros. By the end of 2023, 119 projects had already secured 88 million euros.

© Thierry Geenen - Vice-rector Pieter Ballon

© Thierry Geenen - Until 2024 VUB’s research resulted in more than 49 spin-offs

Patents

VUB research has resulted in numerous patents. “Currently, we manage 216 active patent families, including 71 solely under VUB and the rest with partners like Imec and VIB,” says Ballon. “In 2023 alone, we filed 29 new patent applications. Our research has also led to over 49 spin-offs.”

A specialized team focuses on valorization, scale-up of research results, and intellectual property protection. Scale-up activities are primarily based in the research park in Zellik, near Brussels Airport. “We collaborate with external partners, ensuring spin-offs become independent while maintaining a limited number of shares.”

VUB ranks 20th in Europe for attracting funds for fundamental and applied research. “Considering the total number of students and full-time professors, we were ranked first last year,” Ballon adds.

Internationalisation

VUB is part of Eutopia, a European university alliance that fosters inter-institutional partnerships beyond geographical and traditional academic boundaries. “Eutopia currently includes 10 universities coordinating research policies. Like VUB, they are relatively young institutions, making them agile in multilingual offerings and in attracting international lecturers and students,” explains Ballon.

Being a young university allows VUB to pioneer multidisciplinary research. “For instance, we lead in the chemical dating of archaeological material,” he notes.

Key themes

VUB prioritizes several research themes. “Artificial intelligence is a key focus. In 1983, we were the first European university to establish an AI lab,” Ballon states. Other major areas include decarbonisation, energy, sustainability, and electric mobility, with nearly 300 researchers dedicated to these fields. Future focus areas include IT, robotics, and life sciences, particularly biomedical applications.

VUB researchers design medicine of

the future

Biomedical technologies at VUB are paving the way for new drugs. In 2024, two leading researchers secured ongoing funding from the Flemish government's Methusalem programme, receiving 2.1 million euros each over seven years.

Gene therapy for muscle diseases

Prof. Thierry VandenDriessche (Gene Therapy and Regenerative Medicine) aims to develop a strategy to cure inherited muscle diseases. "We address the root cause by safely delivering functional copies of healthy genes to muscles and the heart, reversing the disease's effects," he explains. This sustainable approach not only improves patient quality of life but also reduces the socio-economic burden on society.

© Thierry Geenen - The VUB research infrastructure is clustered in core facilities and infrastructure platforms

Nanobodies for immunotherapy

Prof. Jan Steyaert (VIB-VUB Centre for Structural Biology) focuses on nanobodies, also known as camelid antibodies. "These were discovered in our labs 30 years ago by Raymond Hamers. Our research has driven a global shift from conventional antibodies to nanobodies," he explains. "We aim to develop immunotherapy drugs that leverage the immune system's natural functions for more effective treatments with fewer side effects."

Steyaert also plans to establish a pharmaceutical company to translate these insights into medical applications. "Starting in 2025, we will consolidate 30 years of nanobody expertise into a global knowledge base, NanoSaurus, to share with the scientific community."

Core facilities and infrastructure platforms

VUB research infrastructure is organized into 11 core facilities and infrastructure platforms:

- **Brubotics Rehabilitation Research Centre (BRRC)**: Interdisciplinary human movement analysis lab specializing in robotic and technology-supported rehabilitation research.
- **In Vivo Cellular and Molecular Imaging (ICMI)**: Core facility for nuclear and optical imaging of small animals, equipped with multi-modality cameras and ex vivo analysis techniques.
- **Flow Cytometry (FlowCore)**: Offers advanced instruments for analyzing and sorting biological materials.
- **Materials Characterisation**: Provides analytical tools for material characterization.
- **Microlab**: A 300 m² cleanroom dedicated to microfabrication of glass and silicon for microfluidics, supporting both research and industry.
- **Square**: Provides complementary statistical and methodological support to researchers and research groups.
- **Animalarium**: Manages the housing and care of research animals.
- **VSTA**: Specializes in DNA aberration detection, multiplex RNA and protein expression analysis, and whole-slide imaging.
- **The Social Survey (TSS)**: A national data infrastructure supporting interdisciplinary research in behavioral and social sciences.
- **Brussels Digital Text Lab (B-TXT)**: Supports digital text analysis, data collection, and archiving for researchers in social sciences and humanities.
- **Humanise (HUMan and ArtIficial miNdS and bodIEs)**: Provides expertise, experimental rooms, and equipment for research on the human mind and body.

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