

Belgium and EMBO in numbers^a

31
EMBO Members

- 1 Antwerp
- 10 Brussels
- 1 Crupet
- 7 Ghent
- 11 Leuven
- 1 Liège

25
EMBO Scientific Exchange Grants

25 researchers from Belgian institutions were awarded a Short Exchange Grant to another institution from 2019 to 2024

55 researchers from other nations received grants to attend Belgian institutions

7
EMBO Young Investigators

Current or former

EMBO Courses & Workshops

695 attendees from Belgian institutions attended EMBO-funded courses and workshops from 2019 to 2024

259 researchers from other countries attended courses and workshops in Belgium

55
EMBO Postdoctoral Fellows

Current or former

EMBC Delegates

Alain Heynen,
Laurent Ghys,
Marleen Bosschaerts,
Cédric Blanpain (Advisor),
Savvas Savvides (Advisor)
Belgian Science Policy Office

The EMBO Programmes are funded by the European Molecular Biology Conference (EMBC), an inter-governmental organization that comprises 31 members states.

Belgium has been an EMBC Member State since 1970.

EMBO opportunities in Belgium

EMBO Postdoctoral Fellowships

fund internationally mobile researchers for a period of up to two years. Applications open all year around.

EMBO Scientific Exchange Grants

fund research exchanges of up to three months. The grants facilitate collaborations with research groups with expertise, techniques or infrastructure that is unavailable in the applicant's laboratory. Applications open all year around.

The EMBO Young Investigator Programme

supports group leaders in the early stages of setting up their independent laboratories for a period of four years. Networking is a key aspect. Application deadline: 1 April.

EMBO Courses & Workshops

stimulate exchanges of the latest scientific knowledge and provide training in experimental techniques. Application deadlines: 1 March and 1 July.

EMBO Press

publishes five journals that serve the global life science community: The EMBO Journal, EMBO Reports, EMBO Molecular Medicine, Molecular Systems Biology and Life Science Alliance, which is published in partnership with Rockefeller University Press and Cold Spring Harbor Laboratory Press.

Find more EMBO schemes at embo.org/funding

embo.org
Information as of April 2025
Contact: communications@embo.org
Cover: Original image courtesy of VIB/Ghent University – Helena E. Arents and EMBO Young Investigator Bert De Rybel

Focus on Belgium



^a As at December 2024

Perspectives from Jean-Christophe Marine

Science director of VIB - KU Leuven Center for Cancer Biology and EMBO Member



Can you tell us about your research and its aims?

Our research group focuses on the study of cancer evolution using melanoma, a highly aggressive form of skin cancer, as a paradigm. We study fundamental aspects of cancer biology from the identification of the cell-of-origin and understanding how tumours develop, investigating how cancer spreads, and become resistant to therapy.

Our interest in melanoma research began while studying the p53 tumour suppressor, a critical protein that prevents the proliferation of cells with a damaged genome. This function is most important as damaged cells are more likely to contain mutations and exhibit abnormal cell growth, potentially leading to the development of cancer. While mutations in this protein are common (50% of patients have mutations in p53), it has become evident that p53 was inactivated in the other 50% of patients. We therefore started wondering what the leading force behind this inactivation is and identified a mechanism in which p53 is inactivated in wild-type tumours. And it turns out that this mechanism is extremely prominent in melanoma, pushing us to study this disease and develop new models.

The study of melanoma is an increasingly changing field. Survival rates surged dramatically to 80% over the last 10 years thanks to the development of targeted therapies and immunotherapies. Yet, some patients do not respond to treatments and others develop resistance. We still need to de-

termine why this occurs and explore other ways to make treatments more effective.

Can you tell us more about translational approaches in your lab?

We transitioned from basic research to clinical applications as we first collaborated with pathologists and clinicians. Our colleagues pointed out that our mice models did not fully replicate human diseases, which prompted us to refine and improve our work and which in turn helped us bridge the gap between the lab and patient care. We now work regularly with clinicians on campus and our students gain experience in both clinical and research settings, strengthening our translational research efforts.

Recently, we have also contributed to the creation of a company dedicated to clinical trials. They are working on antisense therapy, which is a form a treatment that uses antisense oligonucleotides to target messenger RNA, and the goal is to bring some of our laboratory's findings to patients. Another of our ongoing initiatives is a clinical trial that evaluates multiple drug combinations within a single patient, rather than sequentially testing individual drugs. This approach aims to improve efficiency in identifying effective combination treatment strategies. We are hoping to develop more personalized therapies by integrating laboratory models with patient data.

How has EMBO impacted your career?

EMBO played an instrumental role in the development of my career. I became part of the EMBO Young Investigator Network (YIN) in 2006, shortly after starting my lab. I had returned to Belgium from my postdoctoral experiences at the St Jude Children's Research Hospital in Memphis, USA and the European Institute of Oncology in Milano, Italy, and the YIN helped me connect with peers facing similar challenges. When you are starting a lab you may feel a bit lost, facing

issues from managing a team to grant writing. Connecting with people at the same career stage as you and facing similar issues was very helpful. I built lifelong friendships through the YIN and learned much from EMBO's support programmes and soft-skills trainings.

Now, as an EMBO Member and a selection committee member for the EMBO Young Investigator Network, I can give back to the community that provided me with so much support in the beginning of my career. We are promoting EMBO's soft-skills trainings and grants to our students and colleagues and we also organized a research integrity workshop in 2023 with Sandra Bendiscioli, EMBO's Senior Policy Officer. The best part of this is that we are still talking about the EMBO research integrity workshop in our institute, trying to define and implement new policies that will help us progress.

I think being part of a community is fun. You feel that you somehow contribute and that you exist outside of your own bubble.

What makes Belgium an attractive place for researchers, especially early-career ones?

Belgium, and more specifically Leuven where I have been working for now 15 years, offers an outstanding environment for scientific research. Governmental funding in Flanders is stronger than most other European countries, thanks to institutions like VIB which have spearheaded tech transfer and research valorisation in our ecosystem. The KU Leuven campus is built around a structure where clinicians, researchers and students collaborate closely. Researchers benefit not only from both financial support and professional development programmes, but they also have access to top-tier research infrastructures and cutting-edge technologies.

On a more country-wide stance, Belgium's central location allows us to access major European cities like Paris, London and Amsterdam for both personal and professional journeys. English is widely spoken and allows our numerous PIs and students to thrive and, unlike countries and cities with higher living costs, researchers here can enjoy a comfortable life close to their workplace. It is the perfect base for a career in life sciences.

Meet scientists from the EMBO communities



Anna Sablina

Full professor, VIB-KU Leuven Center for Brain & Disease Research, Belgium | Former EMBO Young Investigator

"Moving from the United States to Europe was an endearing career move", recalls former EMBO Young Investigator Anna Sablina. She completed her PhD at the Cancer Research Center in Moscow before taking a postdoctoral opportunity at the Cleveland Clinic in Ohio, then moving to Boston to work for the Dana-Farber Cancer Institute and finally landing in Leuven in less than seven years. "I had no connections or whatsoever with researchers in Europe when I started working in Belgium", says Sablina, "as my career focus had always been the United States. I felt very isolated. The EMBO Young Investigator Network was almost a necessary opportunity to apply to in that regard."

Being part of the Young Investigator Network connected Sablina's work with patient communities to an international community of researchers. "I got the opportunity to meet new people, build a network and be part of a wider community", she recalls. "It was a difficult decision to leave the United States. But over there, all my postdoctoral salary went into child-care whereas KU-Leuven provided me with better benefits and a better quality of life. And the Young Investigator Programme happened in my career like a breath of fresh air. I built lifelong connections with other Young Investigators, learned new skills through the trainings and was able to better manage my laboratory."

A biochemist by training, Sablina's work nowadays intersects with cancer biology. Her laboratory focuses on elucidating the role of ubiquitin system in human diseases and how various alterations of the ubiquitin system can affect cancer development and profession, as well as in drug responses and therapy resistance mechanisms. Working at KU Leuven allows her team to interact with chemists, structural biologists and to run clinical trials. "I particularly enjoy working with patients", Anna Sablina notes. "To give you one example, we receive funding from the Children's Tumor Foundation in the US. Their grant models ask us to always meet with families, and I think it is tremendously important for us researchers to hear from patients what kind of challenges they face in their daily lives. It is grounding. It reminds you of why you are going to the lab and why you cannot abandon your work when difficulties arise."



Camille Goemans

Tenure track assistant professor | École Polytechnique Fédérale de Lausanne (EPFL), Lausanne, Switzerland

Camille Goemans started her lab at EPFL in Lausanne in 2023 to better understand how antibiotics and non-antibiotic drugs affect the diverse bacteria from the human gut

microbiota and how they contribute to dysbiosis and the development of antibiotic resistance. "Antimicrobial resistance is directly responsible for at least one million deaths per year globally and projections indicate a twofold surge in resistance to last-resort antibiotics by 2035," she says. "It is one of the top global health threats and it has become increasingly urgent to develop robust antimicrobial medicines."

Her PhD at the de Duve Institute, UCLouvain in Belgium focussed on microbiology and biochemistry, before her EMBO Postdoctoral Fellowship at EMBL in Heidelberg expanded her expertise into systems biology and specifically the impact of antibiotics on the human gut microbiota. "EMBO was the stepping stone that allowed me to start my postdoctoral research," she says. "I worked on a global screen of 40 bacteria and 144 antibiotics, allowing me to delve into what is still today my main motivation to get into the lab."

Goemans' EMBO fellowship came during the COVID-19 pandemic and as a result she missed the traditional in-person networking opportunities that form a key component of the award but was able to attend for the online course from EMBO Solutions in Lab Leadership. "We are a small team of a dozen people," Goemans says of her current lab. "There are skills that you need to run a lab that are not taught in traditional settings. EMBO has been in this way particularly instrumental in supporting me and my career."