

Safety in the lab: One for all and all for one

While handling hazardous chemicals or biological agents is often an integral part of working in the lab, it should not affect the health of scientists. This is where biosafety officers come in. They are experts at assessing risks in a laboratory and they can help researchers stay safe while doing experiments. “Every research institution must have safety procedures to deal with risks,” explains Marie Fossépré, biosafety officer at the LCSB since 2018. “Our role is to systematically develop mitigation strategies so that everyone is protected at any time or location.”



The job of a biosafety officer takes many forms, from fulfilling legal requirements to approving chemical purchase for example. “Providing protective equipment goes hand in hand with implementing best practices in the lab and thinking about sustainability in the long run. The outcome of all these measures put together is a good work environment coupled with high quality results.” says Marie Fossépré.

At the LCSB, the biosafety officers raise awareness among researchers right from the start: they organise trainings for newcomers, provide essential information to staff members working in the lab and help them to adopt the correct habits early on. “We are here to facilitate research and ensure that it is done in a safe way, but safety is everyone’s responsibility,” Marie Fossépré points out. “Following the safety measures is compulsory to protect both yourself and your colleagues.”

After the first trainings, the collaboration between scientific staff and the biosafety officers goes on. The latter rely on the feedback from researchers and lab technicians to pinpoint safety issues. Someone is not

comfortable with handling a specific substance: The biosafety officers will study the safety data sheet, which comes with every hazardous material, and implement the relevant safety precautions. A research team would like to start a novel experiment: Marie Fossépré and her colleagues will perform a risk assessment before it starts and introduce new safety processes if needed. They also organise collaborative exercises called “safety mapping” on a regular basis to review the activities of a given research group and identify areas of improvement. And what if – despite all the precautions – there is an incident, a chemical spill for example? Of course, the biosafety officers will be there to assist.

They visit the labs as often as possible to ensure that the protective equipment is working properly or that rules are being upheld. “But we are not a sort of police,” assures Marie Fossépré. “We are partners who can provide expertise, advise the researchers and contribute to everybody’s safety at the LCSB.” Everyone has a role to play, it is a joint effort: working together to build a common and sustainable safety culture. ■

Invaluable support



The Finance & Grants team

At the LCSB, the Finance & Grants team plays a key role: They help the centre's principal investigators (PI) navigate the funding and financing process for their research projects, ensuring that they can focus on their scientific endeavours while making the most efficient use of available resources.

In order to best support the researchers, the team's approach covers every stage of a project's lifecycle, starting at the very beginning: "Once a PI expresses interest in submitting a funding proposal for a project, our research facilitators can guide them toward the best-suited funding opportunities," explains Mounir Maaoui, team leader of Finance & Grants. "While our grants experts give some helpful input during the proposal writing process, our financial controllers provide assistance in estimating various costs, be it staff salaries, consumables or larger one-off purchases."

Once a project has been approved, a kick-off meeting is held with the PI, the researchers working on the project and the Finance & Grants team to set out the scientific expectations and the precise budget framework. The team's support continues throughout the project, including monthly or quarterly budget reviews and regular meetings. "These meetings help us establish a trusting

relationship between the PIs and their dedicated research facilitators and financial controllers. This enables smooth communication and allows us to stay on top of potential issues," details Mounir Maaoui.

The importance of the Finance & Grants team becomes even more apparent in the pre-closing phase, when remaining budgets are assessed and measures are taken to ensure that these funds remain available for necessary purchases. The team's proactive involvement in reallocation and budget management comes into play. "Keeping up to date with a project's progress and remaining funds, especially towards the end, helps to ensure that resources are used efficiently," adds Mounir Maaoui. "By thoughtfully managing finances, we also maintain the LCSB reputation and high standing with funding bodies, that can trust that the resources they provide are used according to their expectations."

The LCSB Finance & Grants team is a cornerstone of the support offered to researchers at the centre. The team's expertise allows a balance to be struck between providing the necessary flexibility in spending to enable researchers to achieve their scientific goal and providing clear and auditable accounts to funding partners in Luxembourg, Europe and beyond. ■

Empowering HealthTech Innovation

The LCSB is committed to being an integral part of the country's evolving biohealth innovation ecosystem. At the heart of this initiative is the Innovation and Partnering team, which enables the efficient transfer of knowledge and technology developed at the LCSB into tangible applications with societal impact.



Dr Silvia Colucci and Dr Clemens Ostrowicz at the Bioincubator.

"We act as a link between researchers and industry partners, facilitating collaborations that enrich the R&D ecosystem and bridge the gap between academia and industry," explains Dr Clemens Ostrowicz who leads the team. "This enhances the LCSB visibility and opens up new avenues for the practical application of research results."

The team aims to leverage the existing healthtech innovation ecosystem in Luxembourg and abroad. "In order to guide our researchers towards the best partnership opportunities, we need to have a good

overview and understanding of possible partners and potential areas of mutual interest," says Léa Delacour, Technology Transfer Officer at the LCSB. "Being part of and contributing to this ecosystem not only enables exciting collaborations but also opens up career options for our staff beyond their immediate academic environment."

One of the team's recent achievement is its involvement in the establishment of Luxembourg's first Bioincubator that provides equipped laboratory space tailored to the

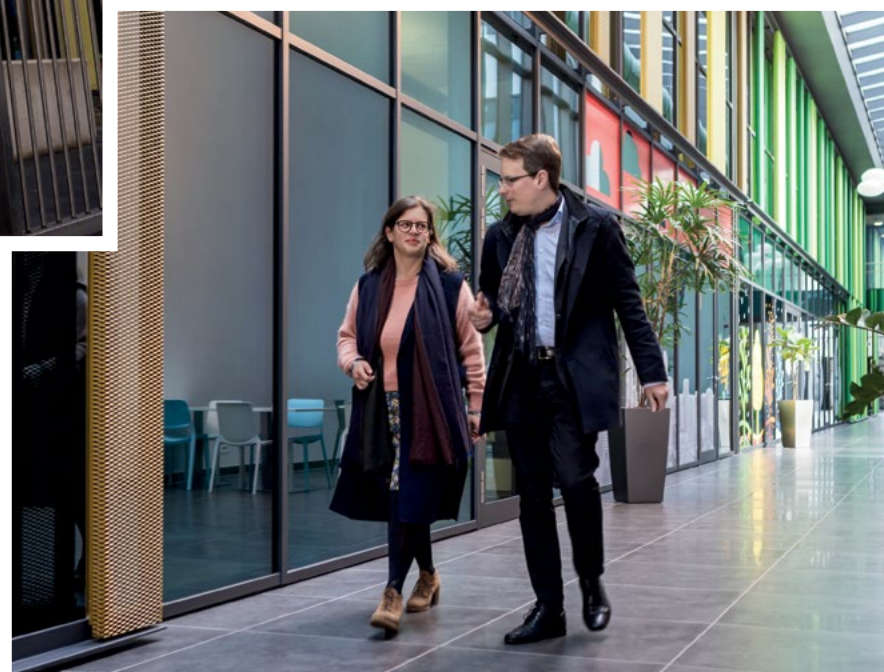
specific needs of health technology start-ups. Supported by the Ministry of the Economy and the Luxembourg National Research Fund (FNR), the Bioincubator is a collaboration between the LCSB, the Luxembourg Institute of Health (LIH) and Technoport, the leading technology incubator in Luxembourg. The management team includes Dr Clemens Ostrowicz in the Executive Committee and Dr Silvia Colucci, Partnership Development Officer at the LCSB, as the current manager. This initiative is a testament to the country's commitment to fostering a robust entrepreneurial ecosystem in the HealthTech sector.

Located in the House of BioHealth in Esch-sur-Alzette, the Bioincubator is part of the larger HE:AL campus currently under construction. It is strategically located near the future Sûdspidol hospital campus, the University of Luxembourg and other national research institutions, providing an ideal environment for HealthTech companies. This unique facility not only offers flexible wet lab and office space on over 300 m² but also provides essential business support services to early-stage companies. Among the companies hosted by the bioincubator are two LCSB spin-offs: OrganoTherapeutics, which uses brain organoids for drug discovery in Parkinson's disease, and NIUM, a platform that provides personalised metabolism-based dietary recommendations.

"Next to its involvement in the Bioincubator, our team is also here to support any new LCSB spin-off initiative. We identify projects that are suitable and support them in the first steps of their entrepreneurial journey, facilitating the transition between academia and business," says Dr Silvia Colucci. On top of working in tight collaboration with researchers, the team also collaborates with the central technology transfer office of the university. Furthermore, two legal advisors manage the LCSB industry partnerships, all of which require a precise legal framework. They ensure that partnership agreements are fair to all parties and comply with the latest legal standards.

By bringing together all the necessary expertise, the Innovation and Partnering team acts as a catalyst: It helps moving innovative ideas from the lab to industry, contributes to the growth of Luxembourg's HealthTech ecosystem and supports the establishment of the LCSB as a sought-after industry collaboration partner. ■

Contributing to the R&D ecosystem, identifying innovative ideas and acting as a catalyst for exciting industry collaborations.



Greener life science labs

Life science research activities go through an astronomical amount of plasticware – about 5.5 million tonnes per year worldwide. Waste-sorting directly in the laboratories is part of greening the labs but is not the only eco-friendly practice that laboratories can resort to. The lab support team at the LCSB has prioritised sustainability since the beginning.



The LCSB received a Gold certification, reflecting that we have adopted over 60% of green lab best practices.

Repairing instead of replacing and having efficient inventory software are only a few examples of initiatives already in place. “But we felt that we could do even more: for example, optimise the use of energy-intensive equipment,” explains Annegrät Daujeumont, the research support technician who oversees the Green Lab certification project at the LCSB. “We want to develop an eco-friendly attitude within the centre so that the effects on the environment are considered in every decision we make.”



my green lab certification.

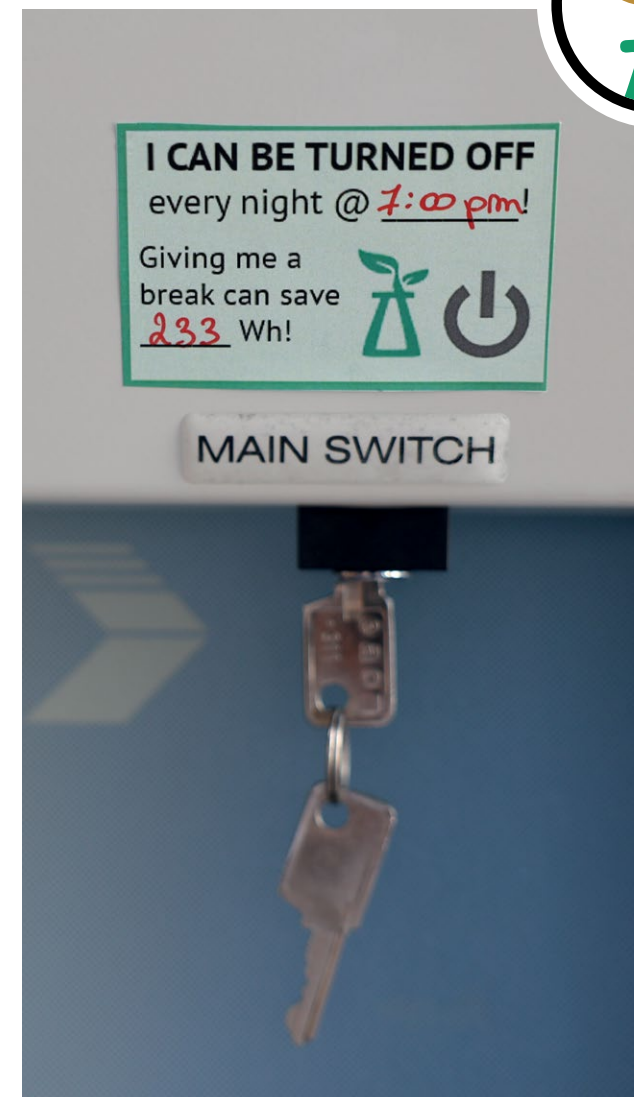
Keeping energy consumption in check was one of the issues the LCSB team decided to tackle heads-on. “A good place to start is to identify which instruments need to be always switched on and which ones can be put on timers,” details Daujeumont. “We carried out this assessment on a case-by-case basis, in order to have the smallest possible impact on the daily organisation of the researchers and the quality of their work.”

Joining the Freezer Challenge, an international competition designed to promote best practices in cold storage management, was also a good way to motivate the LCSB team to optimise the use of fridges and freezers. Actions included defrosting, cleaning out unneeded samples and shoring up sample-tracking methods. As a result, some appliances could be turned off, extending the lifespan of the equipment while significantly reducing the energy consumption linked to cold storage.

Green chemistry was another target. The goal being to challenge the use of certain substances and propose less harmful alternatives that limit energy-consuming waste treatment. “New software enables us to easily identify dangerous chemicals and to then systemically initiate a discussion between researchers and the safety officers,” describes Annegrät Daujeumont.

Other issues can be more challenging to address, such as the limitation of plastic waste and ethical sourcing. “The whole process will take time of course, but the progress already achieved makes it all worth it,” she concludes.

Thanks to this recent team effort, the LCSB has been reassessed by My Green Lab and is now fully certified, with a Gold certification reflecting that over 60% of green lab best practices have been adopted by the centre. ■



To drive this behavioural change, the lab support team is implementing more structured actions, starting with a certification programme. Through a survey, “My Green Lab”, a non-profit organisation, assessed the needs of the LCSB in terms of sustainability. Their analysis provided a framework for improvements over the following months. A working group, composed of lab technicians, safety officers and scientists, was then created, allowing a collective reflection on how to best implement new eco-friendly practices.