

Making Laboratories Greener

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Experiences & Advice

We talked to Dr. Joana Frobel, a researcher at the Center for Molecular Medicine Cologne. Together with her laboratory, she achieved the highest My Green Lab certification rating “Green”. Here, she shares the insights she has made during her journey:

Getting To Know Joana Frobel

I studied Molecular Life Science at the University of Lübeck, Germany, and later went on to do my Ph.D. in a lab focused on stem cell biology and epigenetics in Aachen. My academic journey eventually led me to Cologne, where I currently work as a postdoctoral researcher specializing on G-quadruplexes, which are secondary structures of DNA.

Sustainability has always been a key priority for me. After returning from maternity leave, I felt it was time to take concrete action and joined a sustainability initiative at the Medical Faculty of the University of Cologne. To organize our efforts more effectively, we established several specialized working groups. I am most active in the Research and Laboratory subteam. During this time, our institute's manager became aware of the My Green Lab certification and decided to implement it in our institute. As a result, I took on the role of Sustainability Manager in our lab, allowing me to actively participate in the My Green Lab assessment process.

How To Initiate Change

There are many actions we can take to improve sustainability in labs. However, one of the biggest challenges is overcoming the fear of change among lab personnel. For example, we switched our freezer from -80 to -70 degrees, which caused concern about sample safety, since protocols typically specify -80 degrees.

Due to the multicultural nature of labs, basic standards can vary widely, thus, fundamental practices such as waste separation are not implemented everywhere, which requires starting from scratch in educating them.

Therefore, I found that communication is crucial. I gave presentations to my lab about our current sustainability efforts and possibilities and the potential benefits. To address concerns, I provided evidence that other labs had successfully made similar changes – examples from other groups and universities is very powerful in these instances.

It's also important to ensure changes don't complicate processes, as this can demotivate people. Demonstrating that changes can make processes easier or cheaper can be a true game changer.

The My Green Lab Certification

Many people are not fully aware of their environmental footprint. When discussing it, it's essential to provide concrete examples of achievable actions to give a clear idea of the next steps. The My Green Lab certification is very helpful, as it provides structured, hands-on suggestions based on your specific situation.

The first step is to get your group or lab on board. The process begins with a questionnaire covering topics like energy, waste management, and green chemistry, taking about an hour to complete. The responses establish a baseline, and you then have about six months to a year to implement the suggested changes before a follow-up assessment.

You also receive support from My Green Lab, including customized advice based on your answers. Of course, you need to translate these recommendations to fit your lab's specific context, as there can be big differences across labs, institutions, and countries. Here again, effective communication to ensure everyone understands and participates in the changes is fundamental! Understanding the local context and having prior knowledge from the sustainability working group helped us implement changes more effectively.

Ultimately, the Certification was very helpful in providing a clear outline and motivation for driving change. I think it is very advisable for that reason – having previous experience yourself or working with someone having extended knowledge about sustainability will help but My Green Lab outlines the actions so well that there no absolute need for it at all!

What Will Help You Being Successful

Effective communication is crucial, not only for getting people join in but also for proper assessment. People often aren't aware of existing sustainability efforts within their institution, like regular maintenance of fume hoods or attempts to repair devices instead of replacing them. Informing participants about these practices ensures more accurate responses and helps identify further areas for improvement.

Personal motivation is key. Setting up initiatives together is fun, foster a sense of collective effort and can significantly motivate skeptical colleagues. Also, purchasing new, more sustainable equipment requires support from higher-ups, therefore including leaders in the process, makes implementation much easier.

One particularly impactful change was recycling all media bottles, which significantly reduced waste with minimal effort. We work with PAN Biotech, who collect our empty bottles. Another significant change was altering our institute's air flow system to save energy by turning it off between 10 PM and 5 AM. This has to be discussed with all colleagues but honestly, it not only saves energy but also encouraged healthier work hours.

Encouragement For Everyone Out There

Don't be intimidated by challenges, setbacks, or resistance. Small, easy changes can have a big impact. It's encouraging to see gradual progress and to know that there are others who care about sustainability. I encourage everyone to consider sustainability and implement changes in their labs.

Before starting new initiatives, check if there are already existing groups or efforts. Often, there's already a lot happening, and joining an existing group can amplify your impact. Avoid jumping into action without first understanding the current landscape and collaborating with others.

We have created a really helpful interactive presentation about sustainable actions one can take, we share it with everyone here: <https://prezi.com/view/U5wjOrlXnN4ia3l29rRW/>

And for anything else, you can find us and what we do here: <https://medfak.uni-koeln.de/fakultaet/ag-nachhaltigkeit>

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