

Open bioLab Graz Austria (OLGA) – An Introduction into the Grazer Biohacker Community

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Introduction

The term biohacking is getting more and more popular these days. Original concepts of biohacking derive from the hacker ethics and are based on the idea that sharing and having access to information is a beneficial good for society¹. Biohacking, also known as “Do-it-yourself Biology” (DIY Bio), is a social movement that involves people who are interested in the field of life sciences, like students or any kind of individual, forming their own communities². There is no single definition of the term biohacking because different communities try to accomplish different goals. This poster wants to give an overview about the activities and philosophy of the biohacker community in Graz, which is located at the *Open bioLab Graz Austria (OLGA)* in the *realraum (r3)*.

About OLGA

- The bioLab was founded in 2013 to create a safe environment for science interested people.
- It is part of the non-profit association *realraum*, an open hacker and maker space, and financed by membership fees, private money and received funding.
- 2014 the Austrian Federal Ministry of Health gave an official permission for genetic engineering on biosafety level 1 (BSL1) to work with genetic modified organism (GMO).
- The lab is mainly used from the biohackers, who are 22 of the 81 association members and approximate another 10 non-members (“known faces”).



Graphic 1: The OLGA in realraum

An accessible biolab with permission for working with GMO in the facility of the association *realraum*.

Activities

- **Collecting lab equipment** (second hand, self made, saved from being dumped)
- **Finding alternatives to expensive methods** (trying out with less money and new ideas)
- **Isolation, storage and cultivation of microorganism** (bacteria from soil, yeasts, slime mold, bacteriophages)
- **Molecular biology and genetic engineering** (DNA isolation, transformation, genome editing)
- **Open events for visiting** (Open Lab Day, Documentary and Discussion Evening)
- **Long term projects** (f.e.: 2018/19, Bacteriophages and antibiotic resistance)

Philosophy

Providing an accessible biolab: One goal is to enable an open lab for free and creative research on a free time basis by providing the basic working material and a safe place to put theory into practice.

Finding alternatives: For the Grazer community, biohacking is the idea of finding alternatives to conventional and expensive working methods used in laboratories and strives to make applied science accessible to more people.

Dealing with science, also in practice:

By using the lab equipment people can practice different methods, often used in lab, and learn autodidactically how to work hands-on their own ideas and experiments.



Graphic 2: Growth experiment of soil bacteria

By striking out an isolated bacteria strain you can see single colonies. The colonies are transferred to agar plates with different media to characterize the bacteria on his growth behavior.

Exchange of knowledge: Open access to information, learning on a free time basis, making (the “actual doing”) and talking about science and technology as a part of society are important for an open hacker space to help rising the educational level.

Developing a critical attitude: We also think it is important to learn how to discuss specific topics with others, how to develop reasoned opinions based on scientific facts and how to reflect our own work.

Having fun by being responsible: Responsible biohacking, in the mind of the biohacker community in Graz, stands for a way of thinking beyond your own level of knowledge and looking at things from different perspectives. Furthermore it stands for getting the information one needs in advance and planning to work with the minimum of risks. It is important to think about the consequences of your actions before you start your projects in order to keep things safe. Having fun with science does not mean to work on everything you can, but with everything you want. And what we want is a safe place used by society and future generations.

Literature:

¹DIYbio (2011); “Code of Ethics”; <https://diybio.org/codes>; last download 27.4.2019

²Ledford, Heidi (2010); „Life Hackers“; Nature Vol. 467; 7.10.2010

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