RWTH AACHEN UNIVERSITY

iGEM

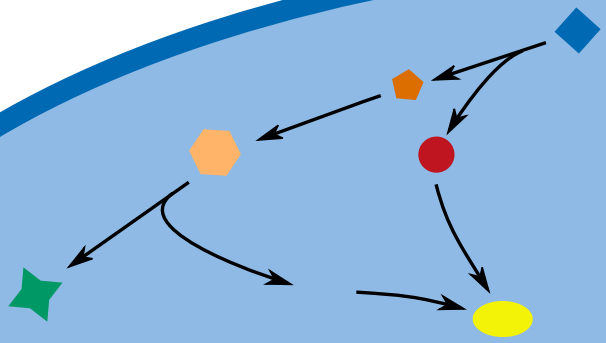
iGEM AACHEN 2014

Next Generation Pathogen Detection

The iGEM (international genetically engineered machine competition) is an international student competition in synthetic biology.

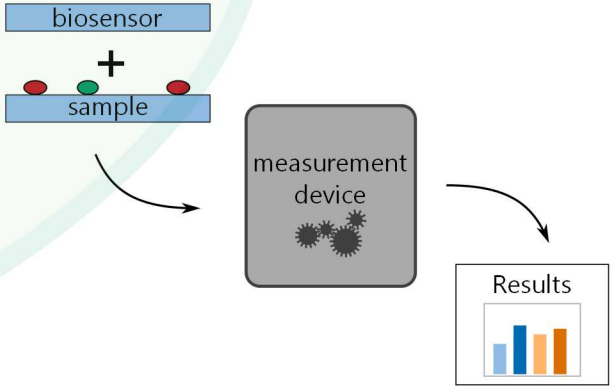
The competition took place for the first time in 2004, with just 5 teams, organized by the Massachusetts Institute of Technology (MIT) in Cambridge. Meanwhile more than 200 teams from all over the world participate each year (picture below), and expand the understanding and application fields of synthetic as well as traditional biology through a multiplicity of innovative projects.

Teams work with standardized DNA building blocks, termed BioBricks, that are also developed in cooperation with other teams, and are eventually compiled in the Registry of Standard Biological Parts. The research results are presented to professional audience as well as the public.



more on iGEM.org

Project



Pathogens on solid surfaces in places where good hygiene is crucial pose a serious threat, since - even after cleaning - these can still be present in dangerous amounts. This is demonstrated by the high number of 3.2 million patients each year that have to treated in the health sector due to infections. And 37000 of those infections end deadly. The EU estimates that at least 20-30% of those cases would be preventable with an intensive hygiene program. However, for a more effective control these respective pathogens have to be identified.

We want to develop a system that makes this possible. One main focus will be the cost efficiency and easy handling in order to make the product universally applicable.

Team

A core concept of iGEM is the collaboration within an interdisciplinary team. Therefore our team consists of students from a variety of fields:

- Biology
- Biomedical Engineering
- Biotechnology
- Business Administration
- Computational Engineering Science
- Informatics

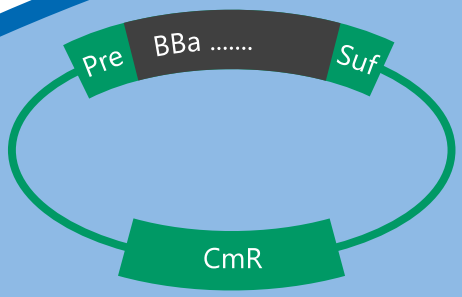
At the same time we are more than the sum of our expertise. By working closely together, and using everyone's different scientific, economic and technical competences, we not only see ourselves capable of learning from each other and excelling ourselves. Using our collective creativity and common responsibility, we want to create something special in order to make our contribution to synthetic biology.

Support Us

Our work is conducted in the laboratories of the **Institute of Applied Microbiology** at the **RWTH Aachen University**. We are also in close cooperation with the **Institute of Bio- and Geosciences** at **Jülich Research Centre**, and other institutes of biosciences.

You, too, can support us financially, or by donating essential equipment and materials. We look forward to a collaboration and would gladly recognize your organization's support on our website or during our presentations.

We have prepared a detailed catalogue with possible scenarios for arranging a cooperation. In case of interest please contact write us an email at iGEM@rwth-aachen.de.

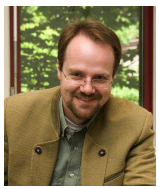


Contact

The following professors support our project:

Prof. Dr.-Ing. Lars M. Blank
Institute of Applied Microbiology (iAMB)

Prof. Dr. Wolfgang Wiechert
Institute of Bio- and Geosciences (IBG)



Prof. Dr. Ulrich Schwaneberg
Institute of Biotechnology, Leibniz Institute for Interactive Materials (DWI)

More information on the iGEM competition can be found on 2014.iGEM.org.