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## Change scent with a touch of a button

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Imagine if you were able to change the scent at your home just by pressing a button on a remote control.

Or if a drug dispenser in your body could change your dose of medication in response to signals from your body.

A multi-disciplinary group of students from Aalto University and University of Helsinki are carrying out research during the summer and autumn to make these applications possible. The group has an international synthetic biology competition in its sights. The competition will be held in October and the group will be the first Finnish group to participate.

“Our objective is to create a regulating system to control how genes act in cells. We are developing and testing the system using bacteria. If all goes well, we will examine the possibility of extending the system to other organisms too”, explains Mikko Laine, a chemical engineering student at Aalto University.

The work has got off to a good start in the laboratory.

“Our project has examined the suitability of BioBrick DNA parts as well as combining them and transferring them into bacteria successfully. In addition we have been working on odourless *E. coli* bacteria”, adds Mikko.





Work is also being done outside the laboratory. As well as carrying out student-led applied research and developing skills in synthetic biology, the intention is to improve opportunities for students in research and business. The team is involved in the Summer of Startups programme organised by the Aalto Entrepreneurship Society, which has helped students to refine their skills in pitching their ideas, taught them about networking and introduced them to influential people in the world of start-ups.

iGEM, the International Genetically Engineered Machine, is an annual international synthetic biology competition, during which each participating team works together to design, develop and implement a synthetic mechanism using an organism and an open access register of genes. The main objective of the competition is to develop research, teaching and the community in this field, as well as raising awareness. You can read more about the competition on the iGEM website at [www.igem.org](http://www.igem.org) (<http://www.igem.org/>).



We are Aalto-Helsinki, the first team from Finland to participate in the iGEM competition. This summer we are doing something completely new!

[Back \(/en/current/news/\)](/en/current/news/)