



waag society

institute for art, science and technology



BioHack Academy General Introduction

Picture by Bas Uterwijk

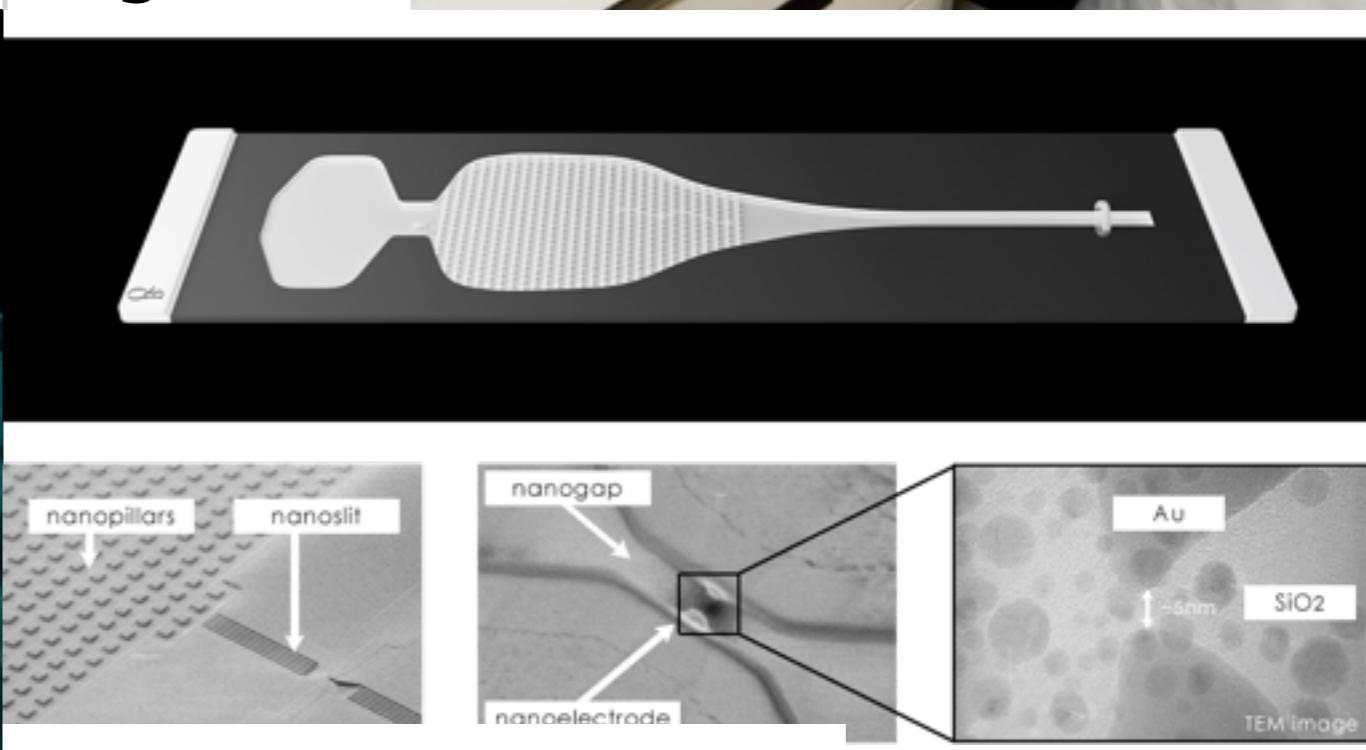
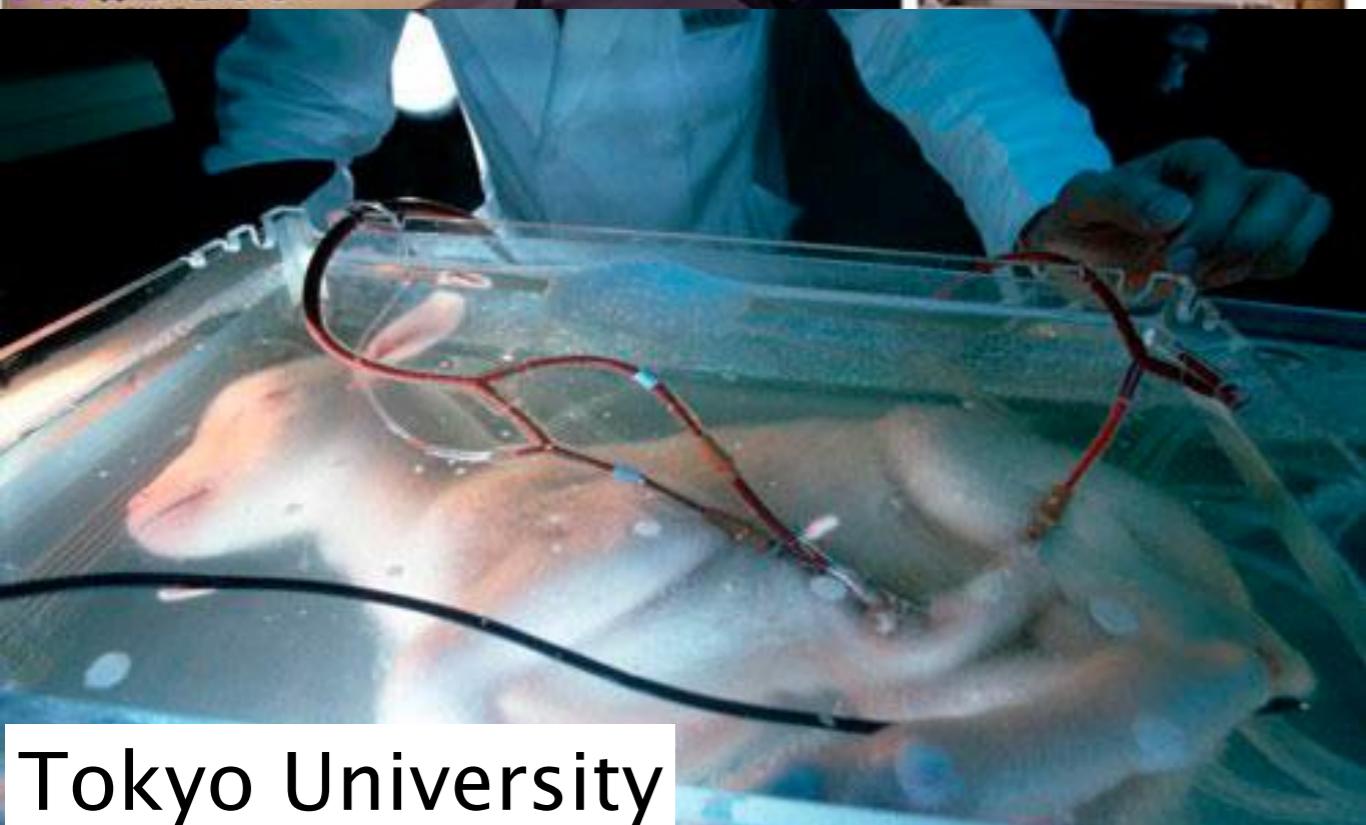
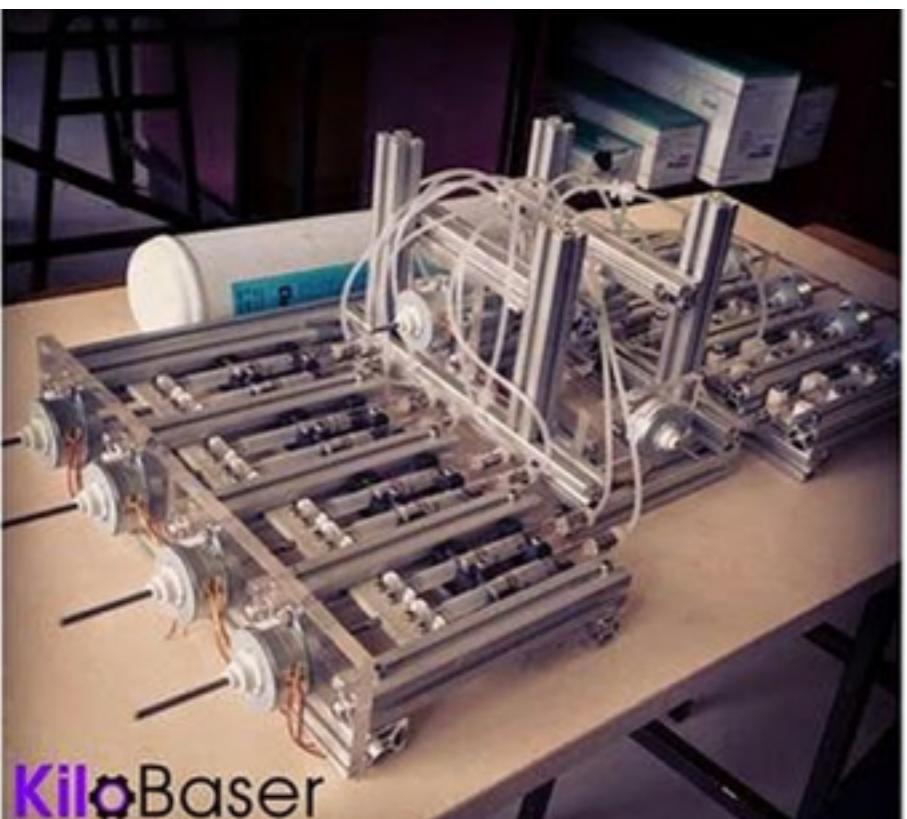


The age of biology





Bio engineering





Biohacking





Bio materials





The goal of this Academy

Skills you will learn:

- Microbiology
- Molecular biology
- Biotechnological reactor design
- Biorefinery
- Spectral analytics
- Bio informatics
- Analog electronics
- AVR microprocessor programming
- 3D drawing and parametric design
- 2D computer aided design
- 3D printing
- Image processing
- (Micro)fluid dynamics
- Thermodynamics
- Mechanics
- Open design licensing
- Chemical and biological safety

Tools you will learn to use:

- All the tools you will build yourself
- Lasercutter
- 3D printer
- Arduino processing language
- OpenSCAD 3D modeling
- Sketchup 3D modeling
- Fritzing electronic circuit design
- Inkscape 2D design
- Markdown language
- Github



Welcome to the 2015 class!

1. Giacomo Garziano
2. Eiso Vaandrager
3. Jurjen Rolf
4. Antonio Garcia
5. Claudia Marginean
6. Eline van der Ploeg
7. Dragoslav Pavkovic
8. Tamara Hoogeweegen
9. Martin Havranek
10. Alice van de Leur-Boorer
11. Gerrit Niezen
12. Yuan Liu
13. Jamillah Sungkar
14. Vittorio Milone

Partner labs:

- GaragemFablab Sao Paulo
- DIYBio Barcelona
- Fablab Roma



The Team

Pieter



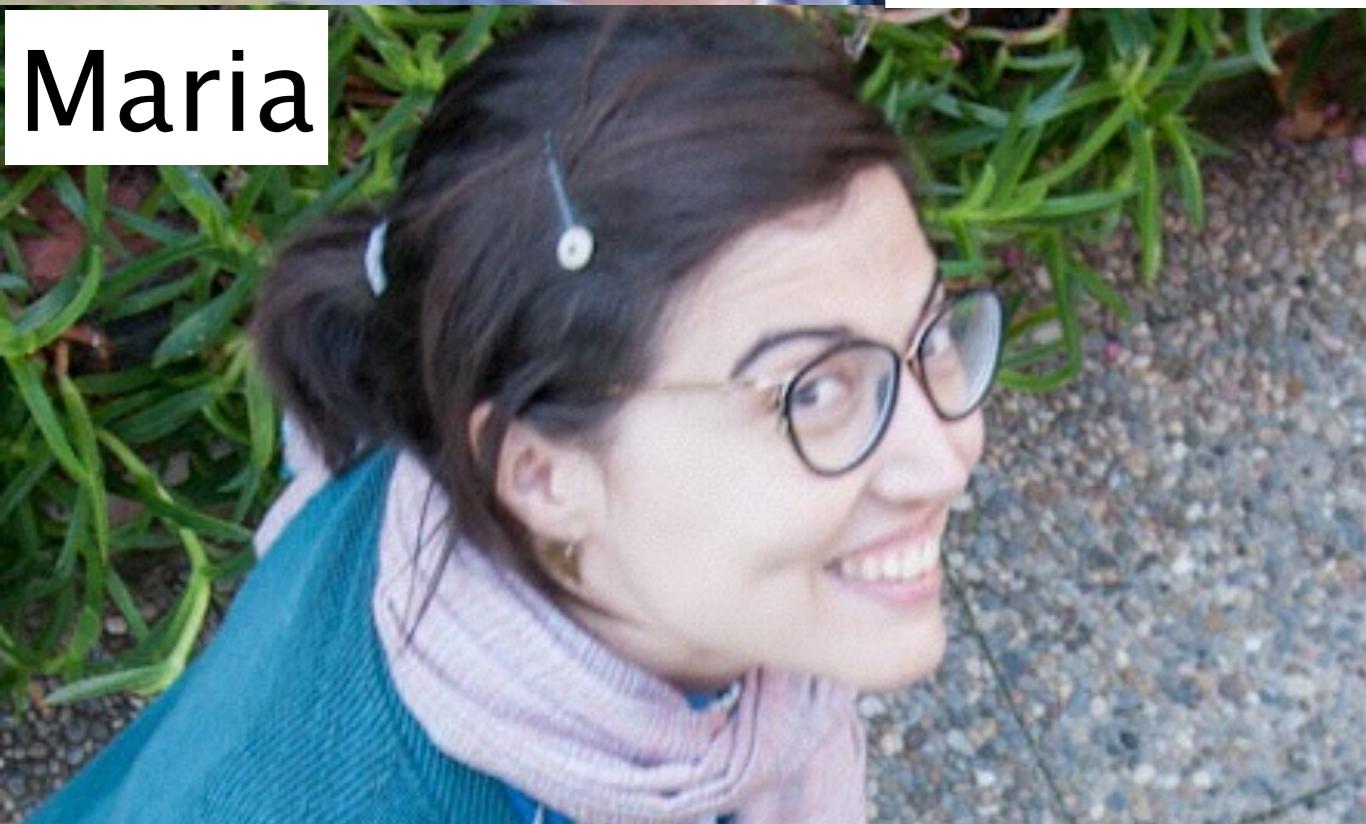
Lucas



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Maria



Hany





Schedule: Devices

1	Incubator	Feb 17
2	Microscope	Feb 24
3	3D & 2D design	Mar 3
4	Sterile Hood	Mar 10
5	Centrifuge	Mar 17
6	Magnetic Stirrer	Mar 24
7	Spectroscope	Mar 31
8	Pumps	Apr 7
9	Bioreactor controller	Apr 14
10	Graduation	Apr 21



Schedule: Microbes

1	Incubator	Isolation / Cultivation	Feb 17
2	Microscope	Isolation / Cultivation	Feb 24
3	3D & 2D design	Isolation / Cultivation	Mar 3
4	Sterile Hood	Liquid culture	Mar 10
5	Centrifuge	Liquid culture	Mar 17
6	Magnetic Stirrer	Down stream processing	Mar 24
7	Spectroscope	Down stream processing	Mar 31
8	Pumps	Reactor setup	Apr 7
9	Bioreactor controller	Reactor setup	Apr 14
10	Graduation	Graduation	Apr 21



Assignments

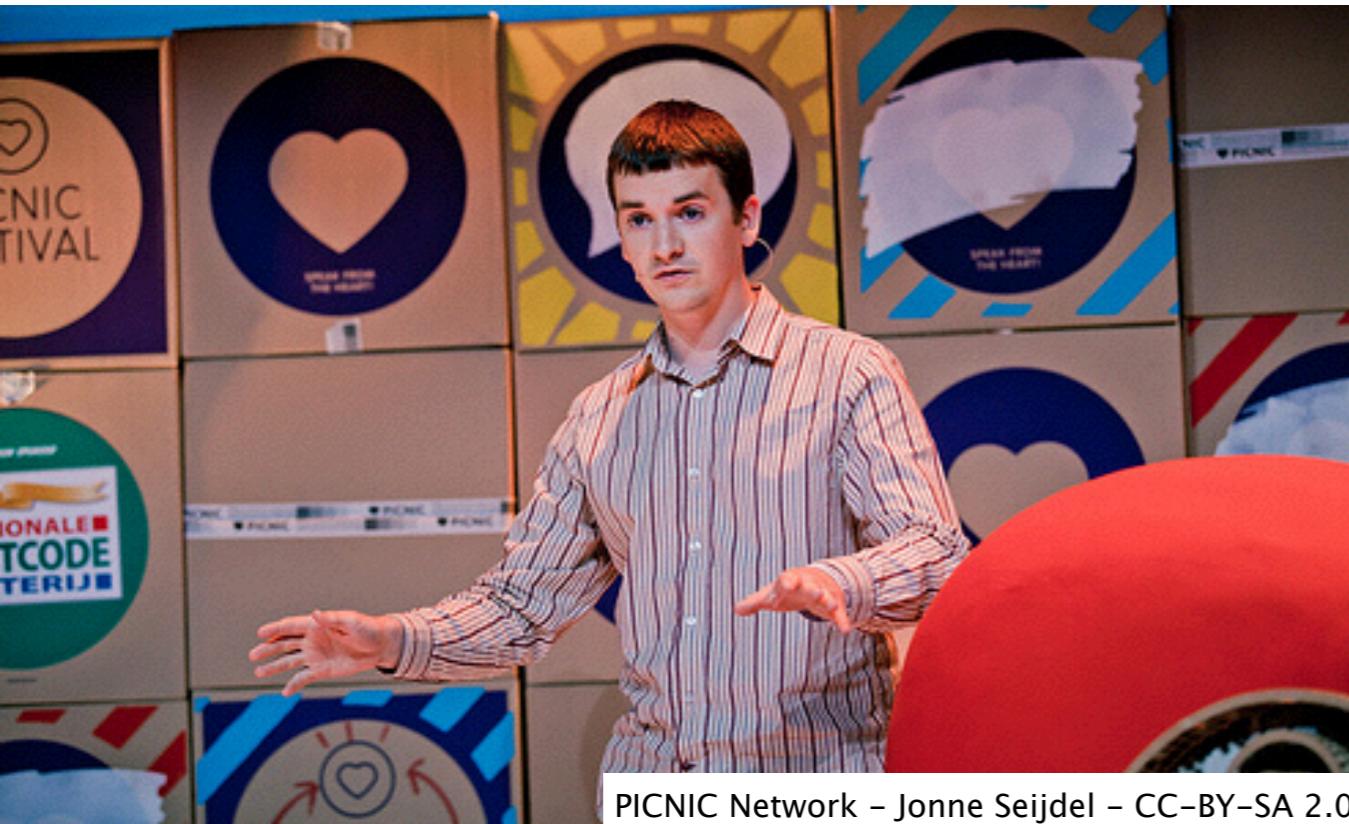
Weekly assignments to focus efforts:

1. Set up your own documentation site on Github;
2. Publish a microscopy video;
3. Design a personal laboratory tool;
4. Search for similar projects within the Biohack community;
5. Start sketching your bioreactor controller;
6. Design your bioreactor dimensions and fluxes;
7. Hack the spectrometer into a flow spectrometer;
8. Document one of your devices in as an „Instructable”;
9. Document your entire project.



Graduation Board

Rudiger Trojok
Cathal Garvey
Otto Heringer



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