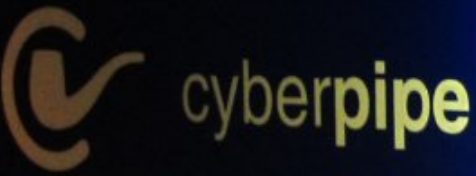
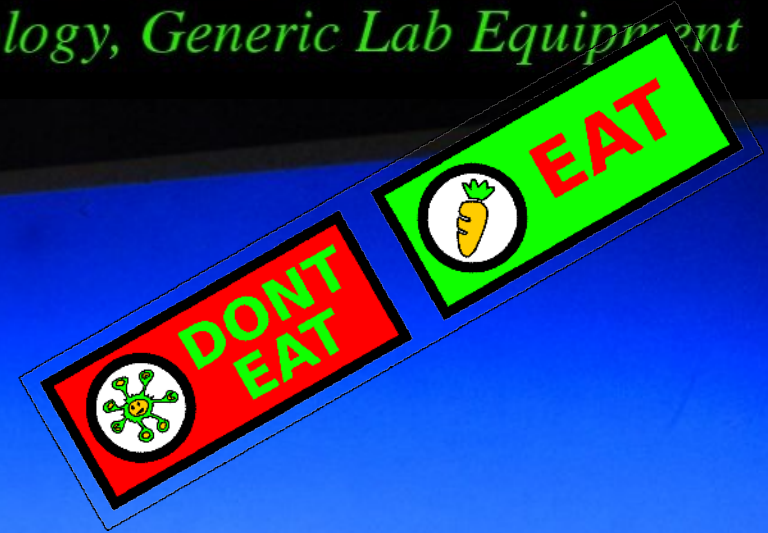




HACKTERIA.ORG

Open Source Biological Art, DIY Biology, Generic Lab Equipment



gene
all our code are belong to you

BioHacking?

Democratization through Demystification of Bio- and Nanotechnology

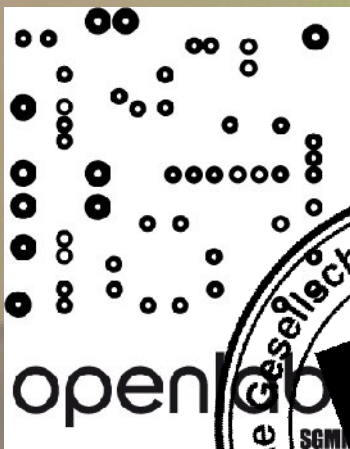
Dr. Marc R. Dusseiller aka dusjagr

www.dusseiller.ch/labs

www.kiberpipa.org







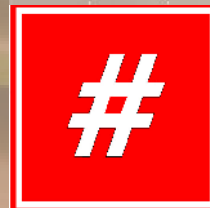
open

diy* festival



BIO+enna

KIBLI
Share is in the Air



GALERIJA KAPELICA
KERSNIKOVA 4, LJUBLJANA

Fields of Activity

dusjagr labs – transdisciplinary Scholar and Artist

<http://www.dusseiller.ch/labs/>

- Hackteria | Open Source Biological Art
 - <http://hackteria.org>
- SGMK | MechArtLab, diy* festival
 - <http://www.mechatronicart.ch/>
- PlayAround 2010 - Taipei | DIWO Culture
 - <http://2010.playaround.cc>
- Dock18 | Raum für Medienkultur
 - <http://www.dock18.ch/>
- FHNW, HLS | wetPONG - Hybrid Games, Micro- and Nanotechnology and Life Sciences
 - <http://wetpong.net>
- ZHdK | SlowGames
- ETH Zürich | Traditional Materials

Acknowledgements

Yashas Shetty, Srishti, Center for Everything, Bangalore

Andy Gracie, hostprods, Gijon

Urs Gaudenz, Sachiko Hirose, Špela Petrič, Brain Degger, Mac Cowell, Rüdiger Trojok, Denisa Kera, Bengt Sjolen, Øyvind Mellbye, Andrew Gryf Paterson et al

Nur Akbar Arrofattulah, Agus Tri Budiarto (lifepatch.org), Togar Muhammad Hidayat, Irfan Dwidya Prijambada (UGM), HONF (House of Natural Fiber), Yogyakarta

Stefan Doepner, Bostjan Leškovsek, Kapelica Gallery, Ljubljana

Markus Haselbach, Effi Tanner, Christoph Stähli, Tobias Hoffmann and all Mechatroniker

MediaLab Prado, Jaaga, Ljudmila, FHNW, EPFL, ETHZ

Marcus Textor, Janos Vörös, ETH Zürich

Funding by: Migros Kulturprozent, BAK, Pro Helvetia, Stadt Zürich, Autodesk, Atelier Nord

Acknowledgements

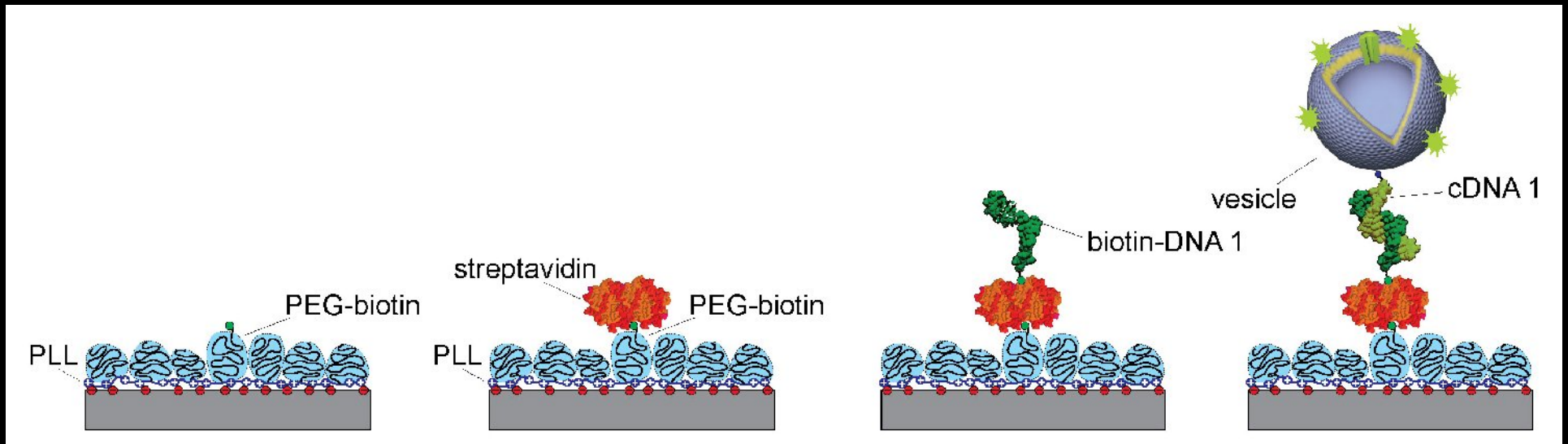
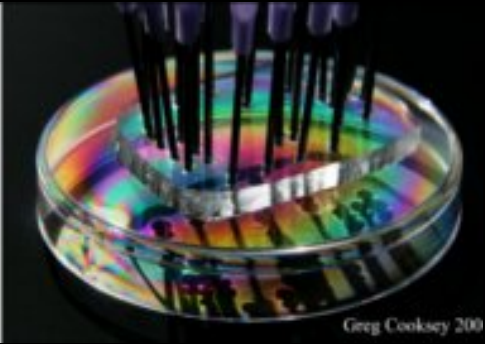
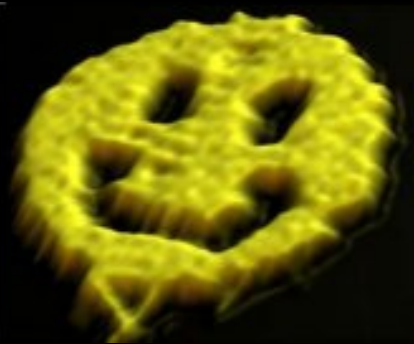
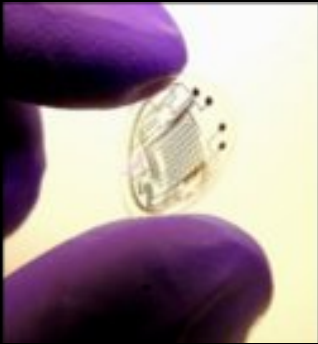


HackteriaLab 2011 // dusjagr visits Yogya
The Art of Fermentation, Oechslemeters and tropical Agriculture



First Transdisciplinary Experiences bridging Material Science and Biology

The NanoBioInterface

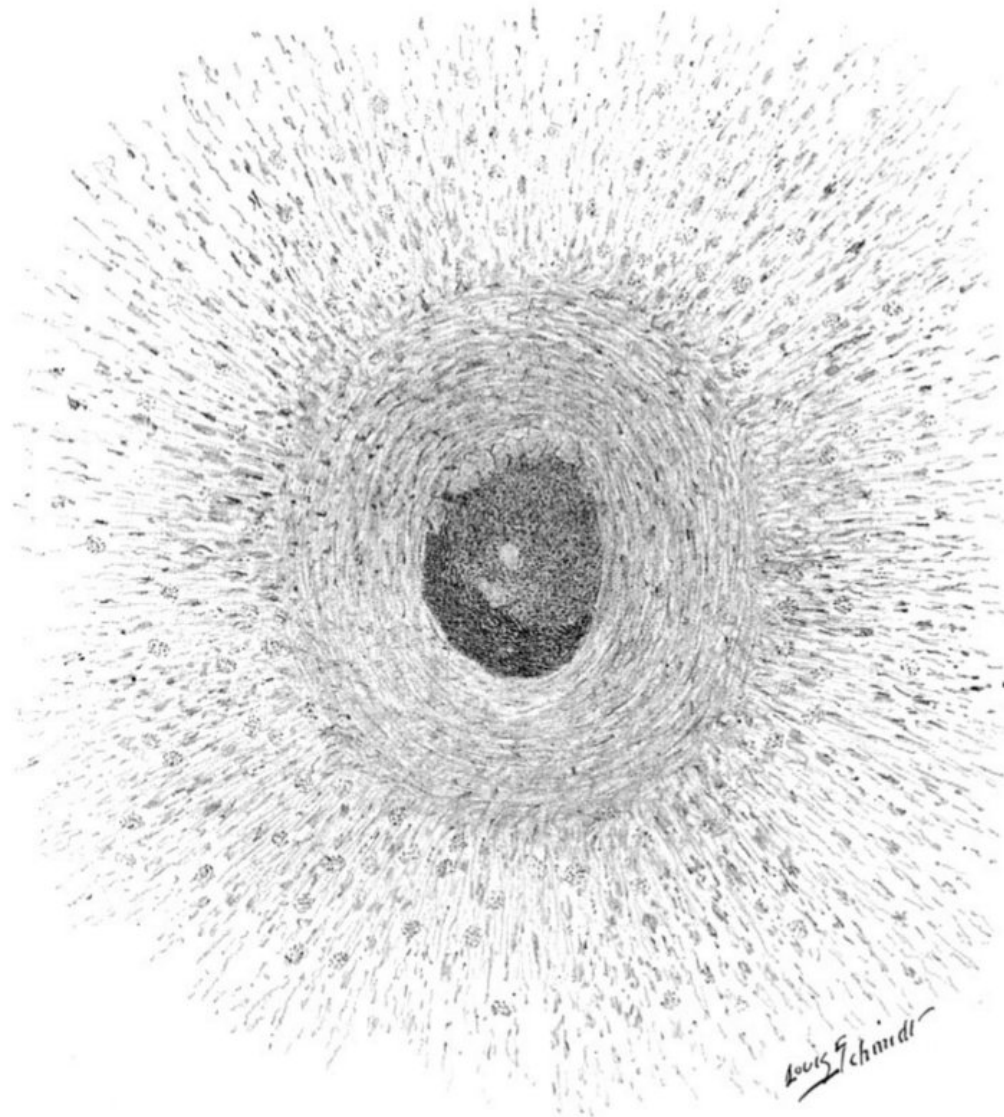


Laboratory for Surface Science and Technology, ETHZ
Janos Vörös, Marcus Textor, Viola Vogel, Nic Spencer

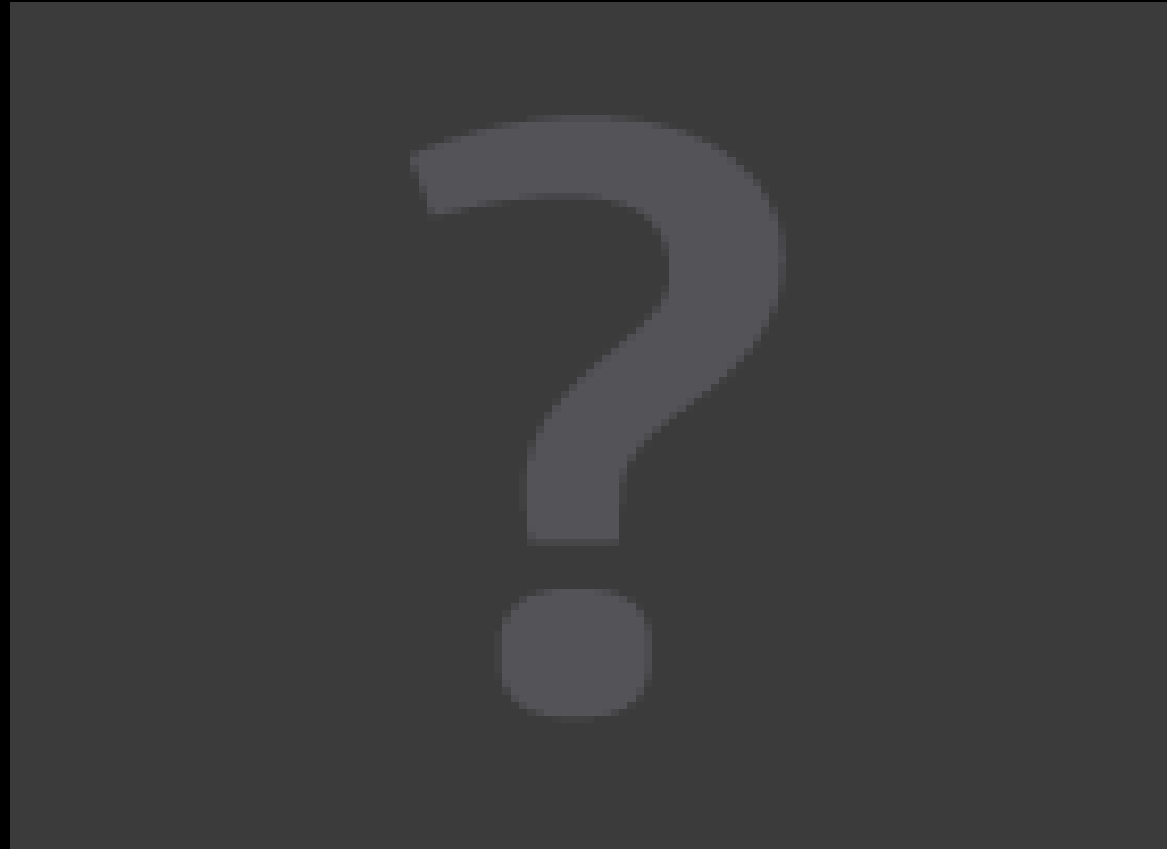
ON THE PERMANENT LIFE OF TISSUES OUTSIDE
OF THE ORGANISM.*

By ALEXIS CARREL, M.D.

*(From the Laboratories of The Rockefeller Institute for Medical Research,
New York.)*



Design of Cellular Patterns 2D



HeLa Cells on patterned substrate, 20 hours timelapse
Alexa Kiss, Gabor Csucs, ETHZ

Šmall is Beautiful

“Any intelligent fool can make things bigger, more complex, and more violent. It take a touch of genius -- and a lot of courage -- to move in the opposite direction.”

E. F. Schumacher, *Small is Beautiful: A Study of Economics As If People Mattered* (1973)
German economist, Buddhist & environmentalist (1911 - 1977)



Nanotechnology

WWW.HANDWERK.DE

Faustkeil.

Dampfmaschine.

Nanotechnologie.

Fortsetzung folgt.

DAS HANDWERK
DIE WIRTSCHAFTSMACHT. VON NEBENAN.

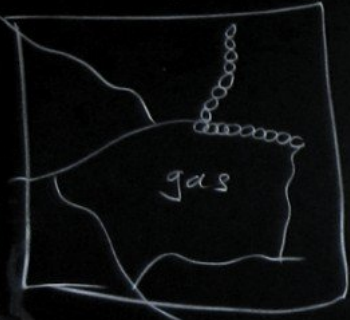
Werbung für die Handwerksbranche, DE

Nanotechnology

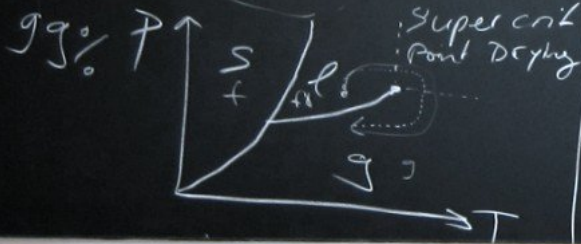
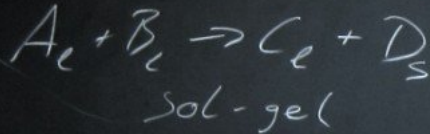


Teaching to Students

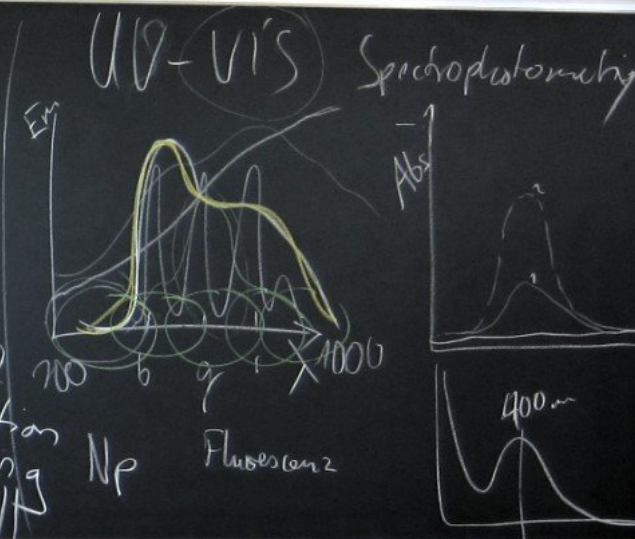
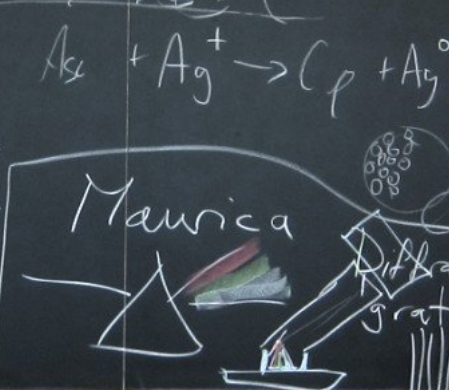
Kuglica
Aerogel



Ausfällung
Precipitation



Ja ; (Ⓜ) Taste erneut drücken.
Nein ; Bitte warten.



A faint, light blue background image of a microfluidic chip layout is visible. It shows a complex network of channels, reservoirs, and mixing structures, typical of a lab-on-a-chip device. The layout is centered on the slide, behind the main text.

Micro- and Nanosystems for Life Sciences

Grundlagen Mikro- und Nanosysteme

Phage head

Tail

Tail fiber

Mikro- und Nanosysteme in der Umwelt, Biologie und Medizin

Längenskalen

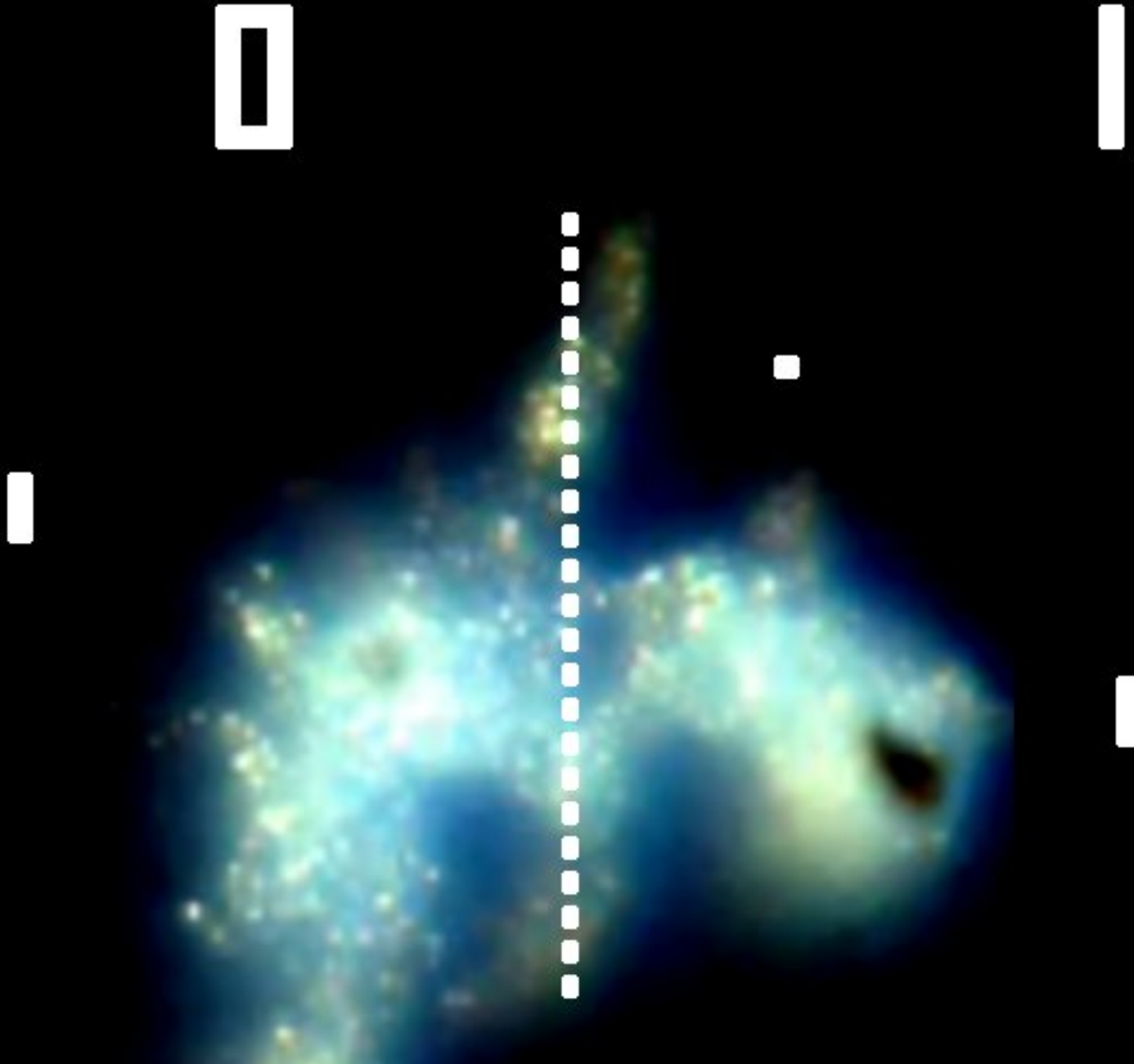
Dr. Marc R. Dusseiller

DNA

100 nm

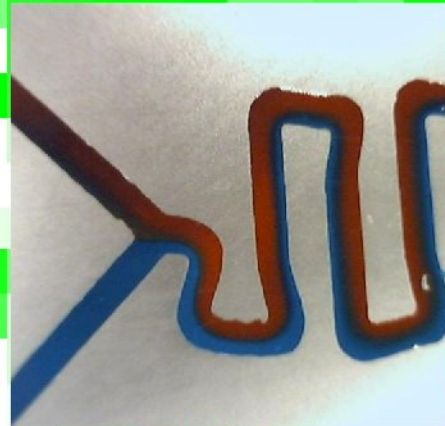
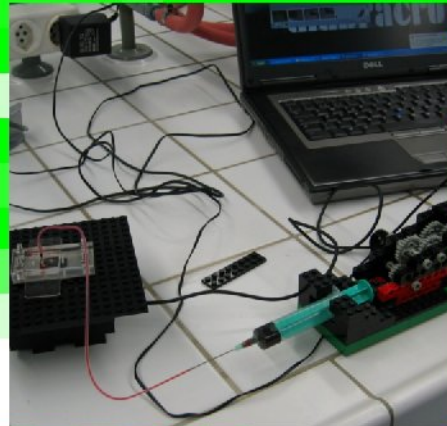
Bacterial cell

LabCourses for MedTech Students



wetPONG

Platform for Hybrid-Games, Micro- and Nanotechnology and Life Sciences



*"Creativity is becoming more important than knowledge,
Knowledge is distributed on the Internet where anyone can find it."*

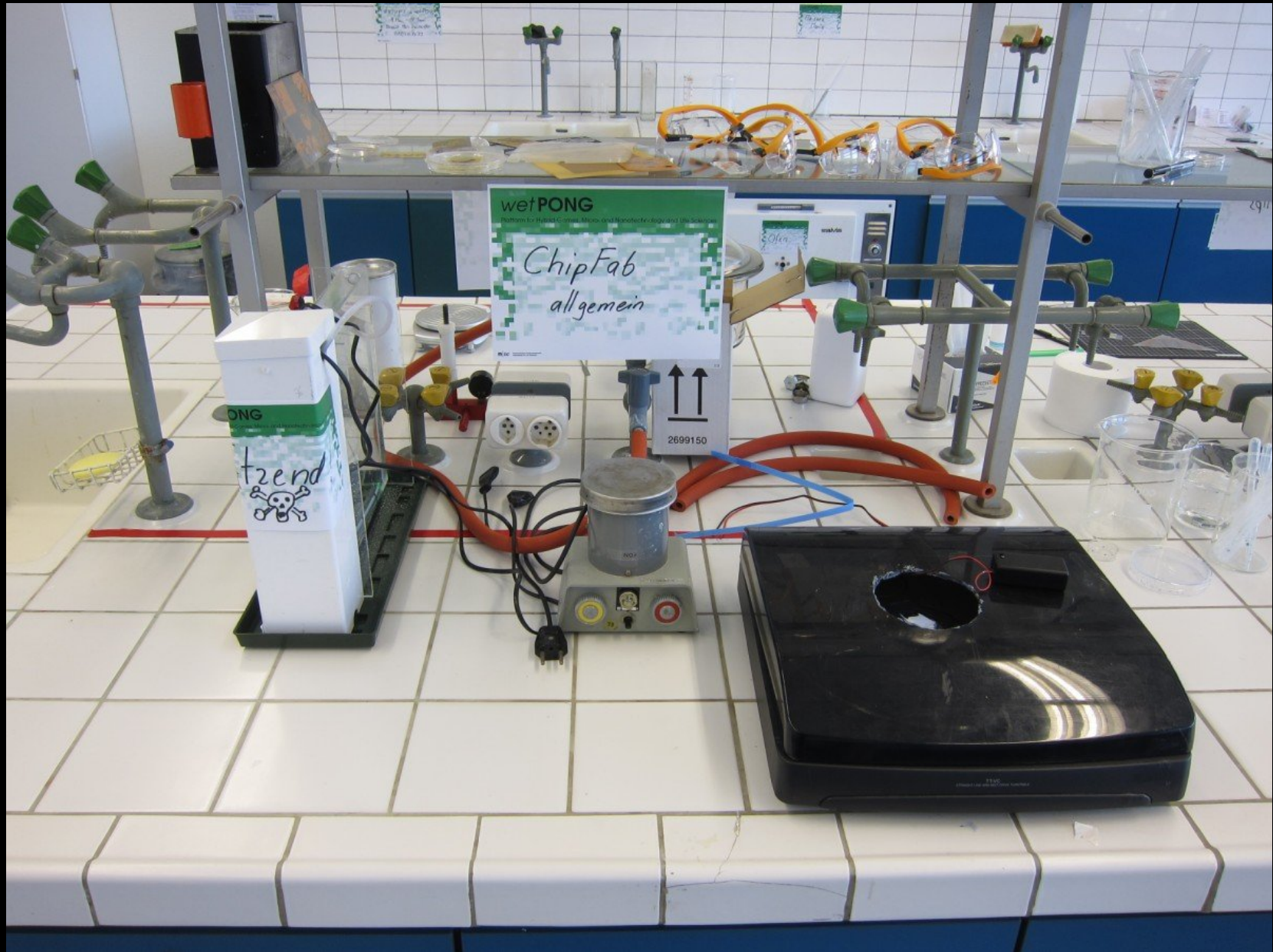
James Gimzewski, UCLA Distinguished Professor of Chemistry and Biochemistry

wetPONG is an international student competition based on a creativity approach in project based learning in microfluidics. The goal of the project is to design and build a prototype system of a playful game-concept that combines components of micro- and nanotechnology and living organisms. Interdisciplinary thinking, team collaboration and creativity are the main learning objectives. The entered projects will be presented at an international meeting and awarded by a jury of invited experts.

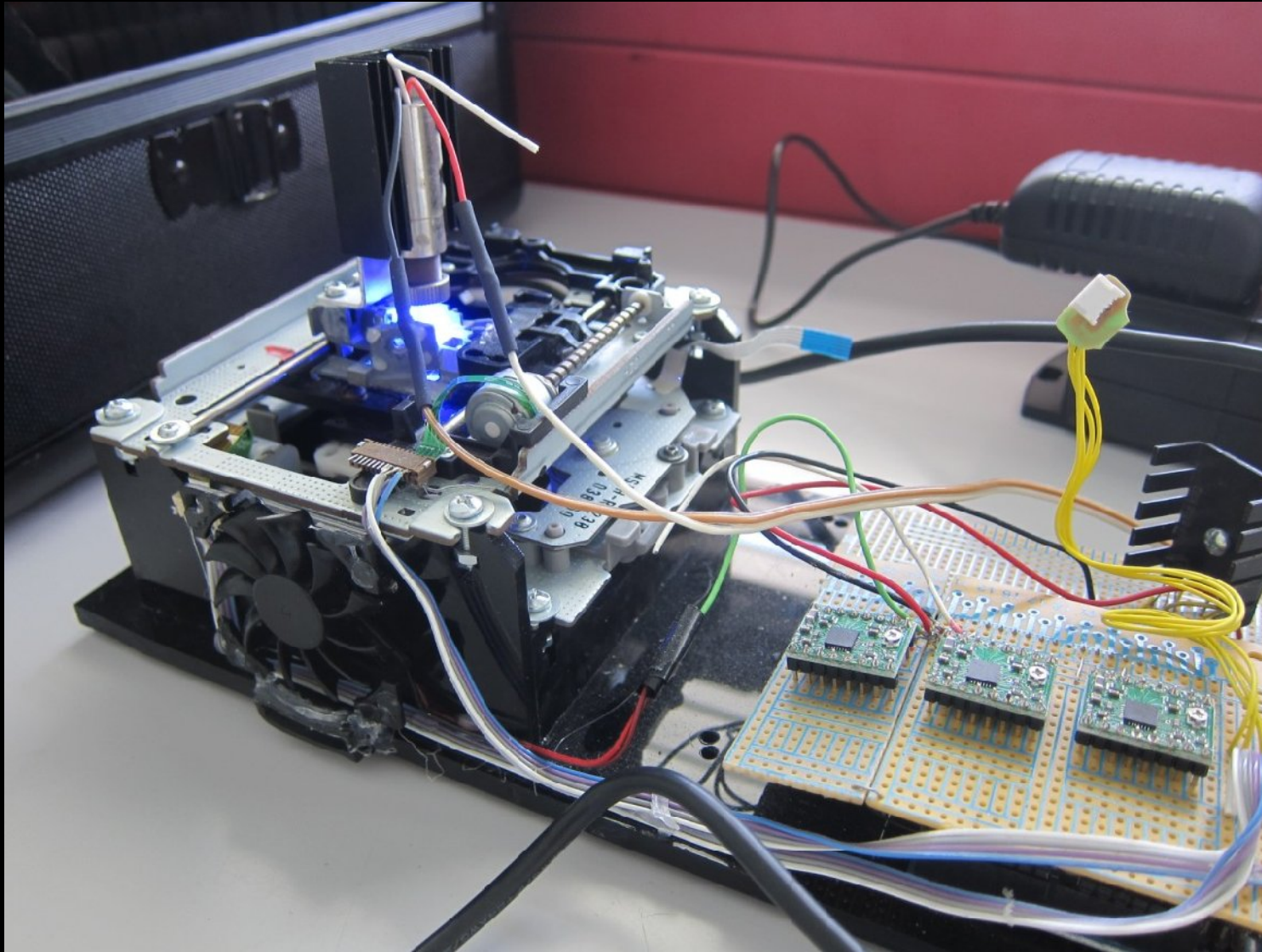
wetPONG – HomeMade Microfluidics



wetPONG – ChipFab



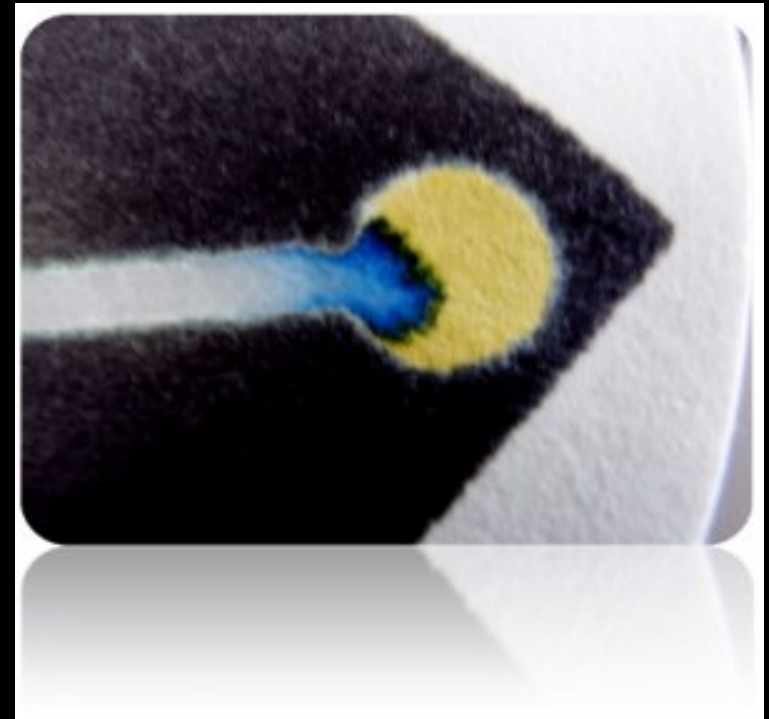
wetPONG – DIY Lasercutter for μ Fluidics



Collaboration with Urs Gaudenz, GaudiLabs and FHNW, HLS

All Projects online on Wiki

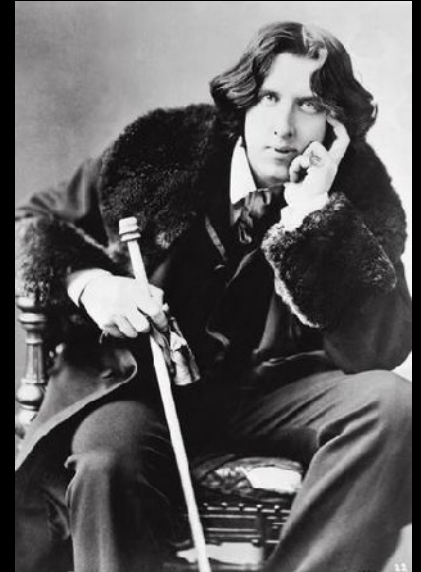
- Projekt 1 | Paper μ Fluidics Diagnostics
- Projekt 2 | Worm Chips II
- Projekt 3 | FlexPrint/PhotoResist μ Fluidics
- Projekt 4 | Maizena Mania
- Projekt 5 | Aschenbrödel Fluidics



Thanks for listening

“Education is an admirable thing, but it is well to remember from time to time that nothing that is worth knowing can be taught.”

Oscar Wilde, *“The Critic as Artist”*, 1890
Irish dramatist, novelist, & poet (1854 - 1900)



Simplicity

Paper based Microfluidics

Dr. Marc R. Dusseiller



Paper-based μ Fluidics – Low-cost Diagnostics



The screenshot shows the homepage of Diagnostics For All. At the top left is the DFA logo, a stylized grid of colored squares. To its right is the main header "DIAGNOSTICS FOR ALL" in blue. Below the header is a navigation menu with links for "ABOUT DFA", "THE TECHNOLOGY", "PROJECTS", "NEWS", and "RESOURCES". A central orange banner contains the text: "DFA is a non-profit enterprise saving lives through the creation of low-cost, easy-to-use, point-of-care diagnostic devices designed specifically for the developing world." To the right of this banner is a small image of a hand holding a white diagnostic device with a colorful pattern, labeled "THE TECHNOLOGY". Below these elements is a large photograph of a smiling woman in a pink headscarf holding a young child. Underneath the photo are two news snippets, each starting with "March '10:" and followed by a "MORE »" link. To the right of the news is a world map icon and the text "SUPPORT OUR MISSION >". At the bottom left of the page is the copyright notice "© 2009 DIAGNOSTICS FOR ALL".

DIAGNOSTICS FOR ALL

ABOUT DFA
THE TECHNOLOGY
PROJECTS
NEWS
RESOURCES

DFA is a non-profit enterprise saving lives through the creation of low-cost, easy-to-use, point-of-care diagnostic devices designed specifically for the developing world.

THE TECHNOLOGY

March '10: Una Ryan discusses low-cost diagnostics, DFA's business model and what it will take to impact global health in March 14th's edition of On The Hot Seat in the Boston Globe. [MORE »](#)

March '10: Diagnostics For All CEO Una Ryan is featured in an Xconomy article about DFA's quest to develop low-cost diagnostics. [MORE »](#)

SUPPORT OUR MISSION >

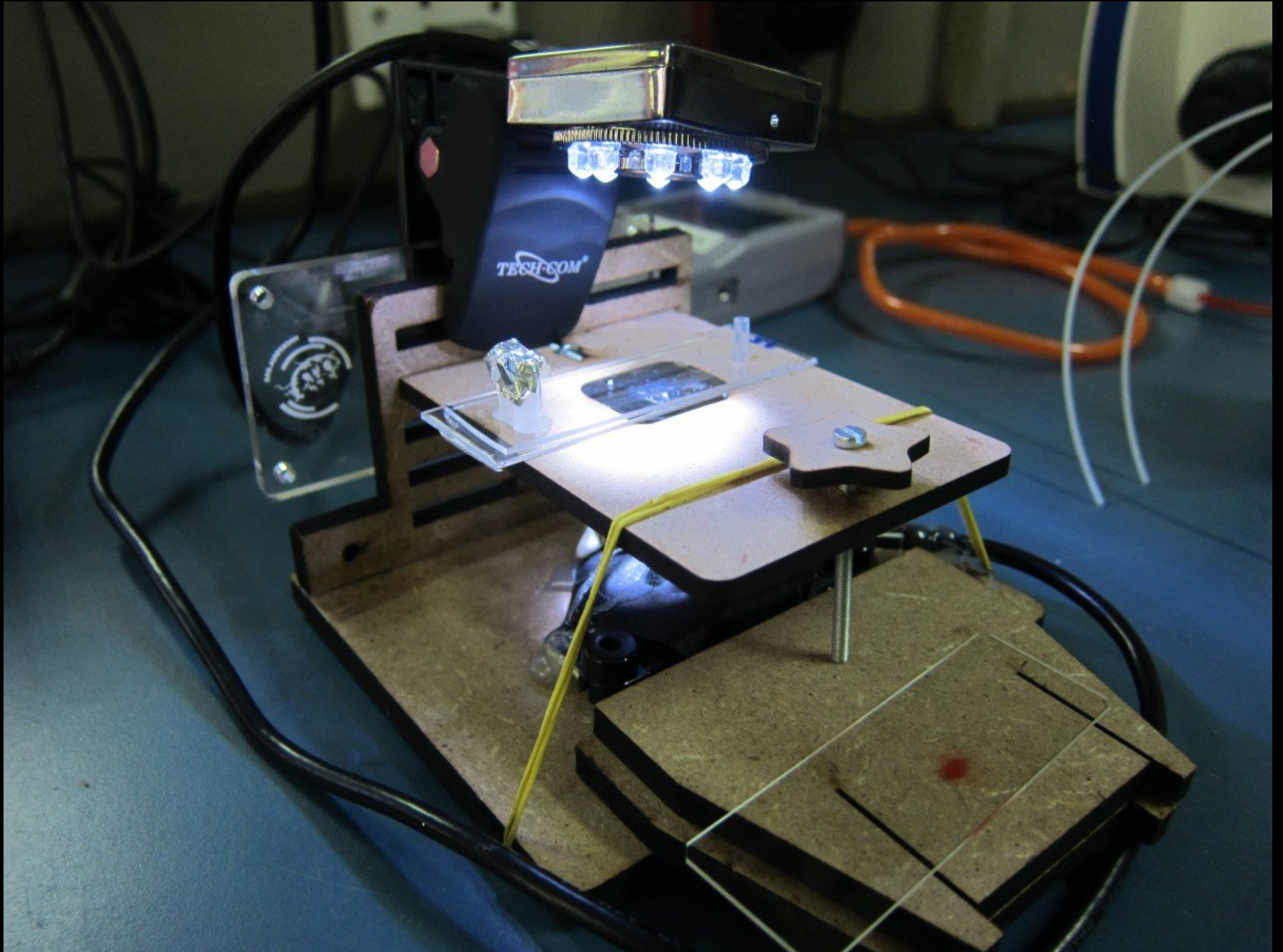
© 2009 DIAGNOSTICS FOR ALL

Diagnostics for All
<http://www.dfa.org/>

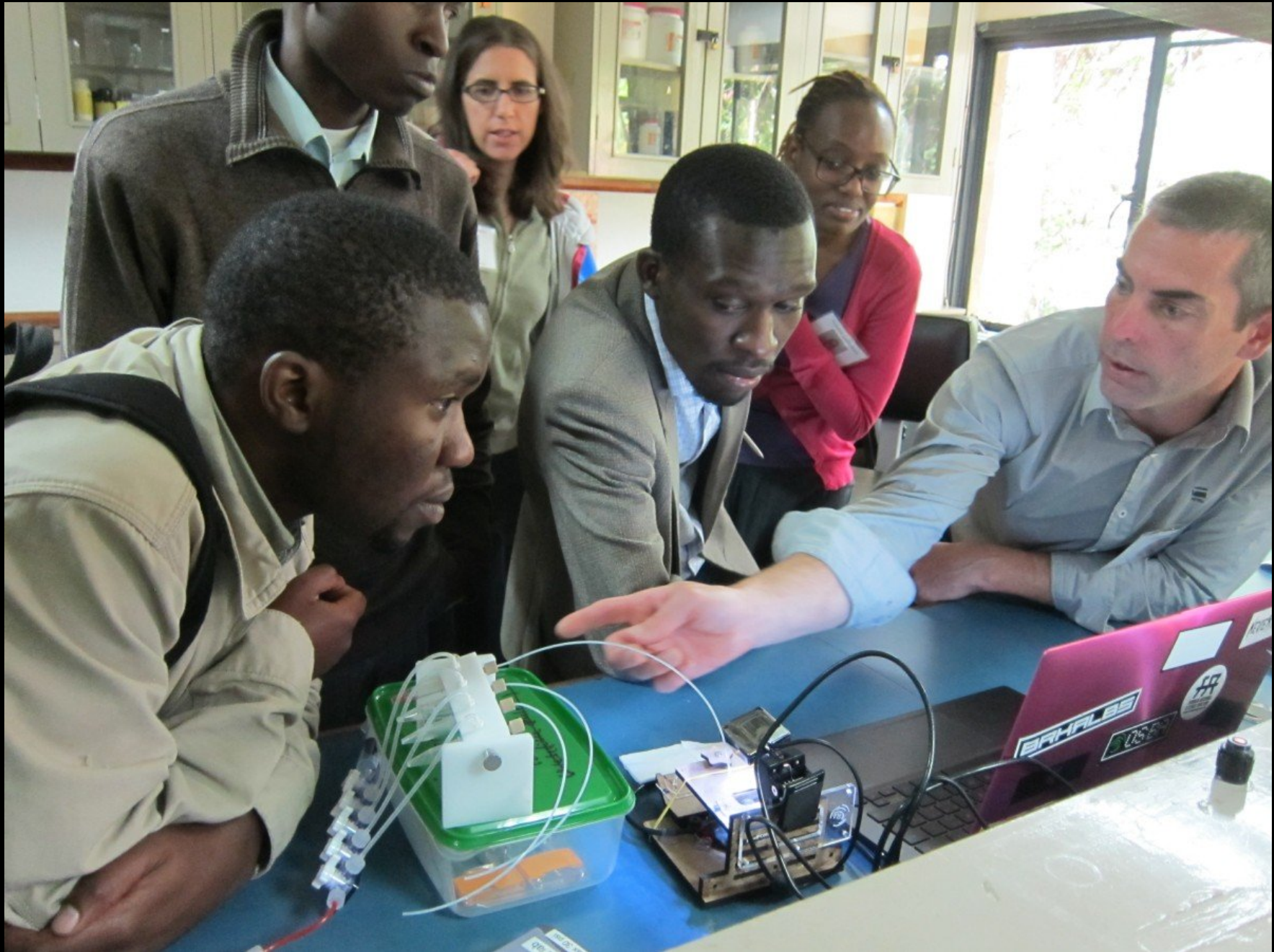
Point-of-Care Diagnostics / Manufacturing



1st POC Diagnostics Workshop, IPR, Nairobi, Kenya



1st POC Diagnostics Workshop, IPR, Nairobi, Kenya



Other impressions from Nairobi, Kenya

FREE CHECK-UP FOR THE FOLLOWING AILMENTS

- ASTHMA, TB, EMPHYSEMA
- BRONCHITIS, ARTHRITIS,
- RHEUMATISM, DIABETES,
- H.B.P, LOW LIBIDO
- IMPOTENCE,
- GYNECOLOGICAL DISORDERS
- INFERTILITY, CANDIDIASIS
- SKIN PROBLEMS
- MALARIA, TYPHOID,



- AMOEBA,
- KIDNEY PROBLEMS
- ULCERS & BILE REFLUX
- OTITIS MEDIA
- OVARIAN CYST

SPECIAL OFFER : FREE MASSAGE

DETOXIFYING IS ALSO AVAILABLE.

DR. MKENYA - 0721 552497

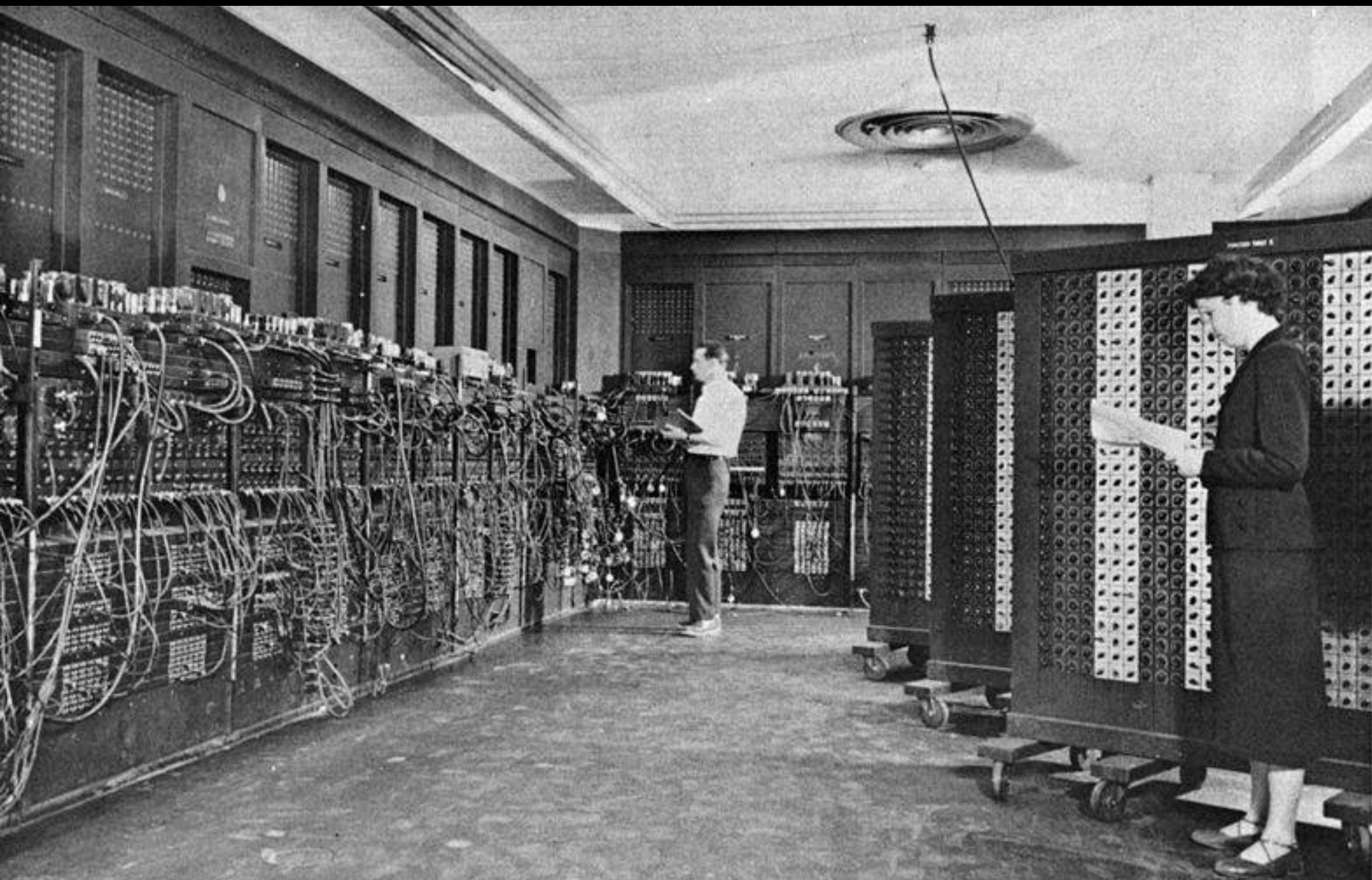
ALL ARE WELCOME. *We Treat But God Heals!!!*





Hackerspaces crossing Digital- and Biotechnology

Hacking



Hack

Originally:

„A quick job that produces what is needed, but not well.“

1950s:

Amateur radio enthusiasts defined the term **hacking** as creatively tinkering to improve performance.

Hacker's jargon:

"A clever solution to a problem."

„An appropriate application of ingenuity.“

Hacker

Software

- Passwords, programming, networks, information, security

Hardware

- DIY, radio, satellites, 3D-printers, open Manufacturing

Wetware

- DNA sequencing and modification, synthetic life forms, genetic code/data, security

Social Engineering

- Context displacement, political activism, media art, public opinion making



Hacker

"Hacker ist jemand, der versucht, einen Weg zu finden, wie man mit einer Kaffeemaschine Toast zubereiten kann"

„A hacker is someone who tries to find a way to use a coffeemachine to make toast“

Wau Holland, ccc

„A hacker is someone, who has joy in the circumvention of limitations..“

Robert Bickford

Hackerspaces

http://hackerspaces.org/wiki/List_of_Hacker_Spaces

hackerspaces.org

List of Hacker Spaces - Hackerspace... +

Log in / create account

hackerspaces Page Discussion View source History

Hackerspaces

- Communication
- List of hackerspaces
 - > add a hackerspace
- List of events
 - > add an event
- List of projects
 - > add a project
- Recent changes
 -
 - Go Search
- What links here
- Related changes
- Special pages
- Printable version
- Permanent link

List of Hacker Spaces

This is a comprehensive, user-maintained, list of Hackerspaces throughout the world. We have also a [list of planned Hacker Spaces](#).

The map displays a global distribution of hackerspaces, with a high concentration in North America and Europe. Other notable clusters are seen in South America, Africa, and Australia. The map interface includes a left-hand navigation panel with zoom and pan controls, and a top-right panel with map style options: Map, Satellite, and Hybrid.

Noisebridge – San Francisco



[page](#) [discussion](#) [edit](#) [history](#)

Noisebridge

dig in!

- [Noisebridge](#)
- [About](#)
- [Vision](#)
- [Blog](#)
- [Getting Here](#)
- [Current Events](#)
- [Recent Changes](#)
- [Random Page](#)
- [Help](#)
- [Categories](#)

search

toolbox

- [What links here](#)
- [Related changes](#)
- [Special pages](#)
- [Printable version](#)
- [Permanent link](#)

We are Noisebridge

Noisebridge is an infrastructure provider for technical-creative projects, collaboratively run by its members. We are *incorporated* as a non-profit educational corporation for public benefit. We operate primarily in a 5,200 square-foot space located in the heart of San Francisco. We teach, we learn, we share. [Read more about Noisebridge](#) or [watch a short video](#) ↗...

Goto 2169

We're located at:

2169 Mission St, San Francisco

[OpenStreetMap](#) ↗ - [Google Maps](#) ↗

2 blocks South of 16th & Mission BART

- [How to get into the space](#)
- [About](#)

Get Involved

- [What we offer](#)
- [Events and classes](#)
- [Host an event](#)
- [Learn about our vision](#)
- [Join one of our mailing lists](#)
- [Contact us](#)

Help Out

- [Become a member! FAQ!](#)
Pay monthly sub: [\\$40/mo](#) [\\$80/mo](#) [\\$160/mo](#)
- [Make a monthly donation!](#)
[\\$10/mo](#) [\\$20/mo](#) [\\$40/mo](#) [\\$80/mo](#)
- [Other ways to donate!](#)

Create With Us!

Our 5,200 square-foot space (483m²) contains an [electronics lab](#), [machine shop](#), [sewing/crafting supplies](#), [two classrooms](#), [conference area](#), [library](#), [darkroom](#), and [kitchen](#). *Everyone* is welcome to use [our many resources](#). Find others to create with. Find help with your projects. Help others with their projects. Learn, teach, share. Come to Noisebridge and create!

Noisebridge's [hours](#) are 24 hours a day, 7 days a week. New visitors are welcome any time (all ages, all skill levels), but it's best to visit in the evenings or during an event to make sure we have a volunteer to show you around and make introductions.

Events and Classes

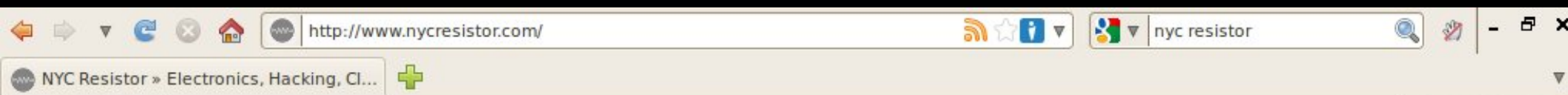
[Full Event Listing](#) | [Unofficial Google Calendar](#) ↗

*You **don't** need to be a member to take or give a class or workshop at Noisebridge. **All are welcome!*** Please see our [events hosting page](#) for more details.

Upcoming Events [edit](#)

- **Monday, January 21, 18:00 - 20:00** [Technoactivism Third Mondays](#) Techno-Activism Third Mondays is an informal meetup designed to connect techno-activists and hacktivists in Bay Area who work on or with circumvention tools, and are interested in anti-censorship and anti-surveillance tech. We're the cousin meetup to OpenITP's [New York event](#) ↗.
- **Thursday, Jan 24 - Aaron Swartz Memorial Service**, in memory of [Aaron](#) ↗, at the [Internet Archive](#) ↗, 300 Funston Avenue, SF (*not* at Noisebridge)
- **Thursday, January 24 - Codebender for Arduino** workshop by the co-founders of [Codebender](#) ↗, visiting from the first hackerspace in Greece, P-space. Beginners welcome! Bring Arduino hardware.

NYC resistors – New York



NYC RESISTOR

STORE CLASSES WIKI PARTICIPATE LASER CONTACT ABOUT



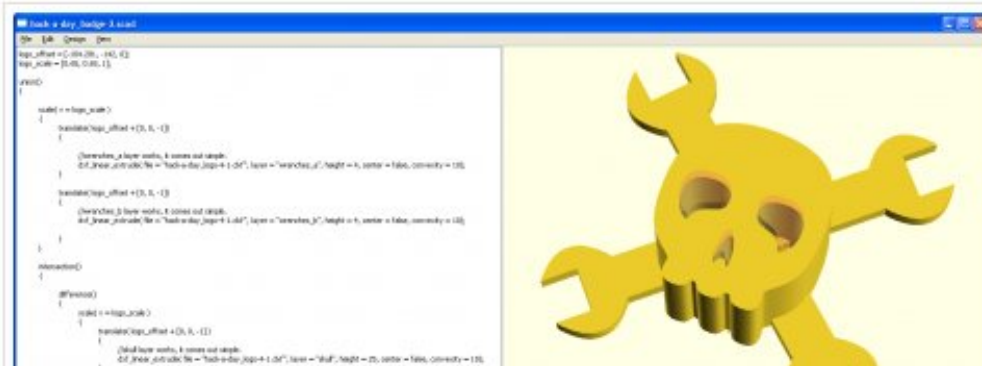
NYC RESISTOR

WE LEARN, SHARE, AND MAKE THINGS

3D Modeling by Numbers: Learn to use OpenSCAD

By: [kellbot](#) June 17th, 2010

4 [retweet](#)



WHAT IS NYC RESISTOR

NYC Resistor is a hacker collective with a shared space located in **downtown Brooklyn**. We meet regularly to share knowledge, hack on projects together, and build community.

[Learn more](#)

LOCATION & DIRECTIONS

87 3rd Avenue,
4th Floor
Brooklyn, NY 11217

FabLabs – many places

Karkhana
make break innovate

Karkhana Collective About Karkhana Workshops Robo-Akhada

3D Printer

MACH DEIN DING!
FABLAB ZÜRICH

Kontakt Newsletter Log In

Aktuell FabLab Blog Projekte Mitmachen

Suche

Demnächst

- FabLab geöffnet 01/23/2013 - 13:00 to 22:00
- FreeFab 01/24/2013 - 13:00 to 17:00
- FabLab geöffnet 01/25/2013 - 13:00 to 18:00
- 3d-Printer Workshop 01/25/2013 17:00 to 19:00

Kalender

Neueste Kommentare

- Ich bin immer in den vor 1 Tag 6 Stunden

Das Beste 1 2 3 4 5

Workshop: Synthesizer (Elektronik I)
Bau einen Synthesizer für's Handgelenk: An unserem zweiten Workshop im Dezember geht es um... mehr

FabLab nairobi

Home Album Outreach Projects Associated links

FabLab

Fablab (fabrication laboratory of "abulous laboratory") is a workshop with an array of computer controlled tools with the aim to make "almost anything". Here at the lab people need to take and end

Nairobi FabLab
Making (almost) Anything

Tools. We share.

Laser Cutter The Epilog laser is a laser cutting and engraving machine. It uses materials such as wood, Acrylic (Plexiglas) or

The ShopBot CNC Router is an amazing co-ai tool for precisely cutting, carving, drilling or machining all kinds of things.

HONFablab
fablab yogyakarta

HOME NEWS FAB FRUITS WORKSHOP PROGRAM ACCESS EQUIPMENTS CONTACT

Fablab For Beginners Fablab For Business Fablab For School Fablab For Individual Fablab Handy Guide

Baru mengenal Fablab?
HONFablab adalah sebuah informasi an labkasi digital personal dimana kami dapat mengajukan proyek agar lebih baik untuk keperluan pribadi, bisnis, tugas, dan lain-lain.
Baca selengkapnya...

Febrib membuat untuk mengerjakan proyek yang bersifat komersial. Dengan metode rapid prototyping kami akan lebih terinspirasi bagaimana karya/produk inovatif bisa dikembangkan disini.
Baca selengkapnya...

Kami bisa menjadikan HONFablab sebagai tempat pengerjaan tugas kuliah yang bersifat project personal atau penelitian baik pribadi ataupun kelompok.
Baca selengkapnya...

Kami bisa menjadikan HONFablab sebagai tempat produksi karya tempat workshop, tempat berkolaborasi dengan individu lain atau dengan HONFablab sendiri dan menjadi salah satu tempat alternatif untuk ilmu penerapan.
Baca selengkapnya...

Fablab Handy Guide adalah panduan singkat untuk menyajikan file pekerjaan sebelum mulai mengoperasikan mesin di HONFablab. Dokumen ini dibuat untuk memaksimalkan waktu kerjamu di lab.

Partners

fablab waag society
fablab amsterdam

Sponsors

official partner for bacteria and tools
UD. MAYAR

HONF
HONF

Health Care Program di HONFablab

FIRST PROTOTYPE IN FAB/LAB /AMSTERDAM

Informasi

OPEN LAB FOR YOUR PROJECTS

Jaaga - Bangalore

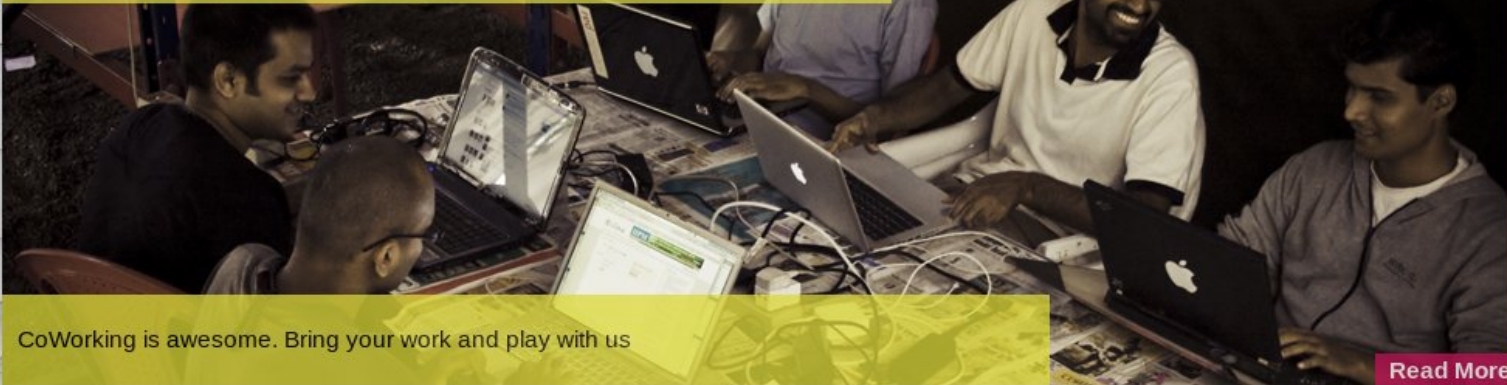
Applications Places System 13°C Wed Feb 8, 16:38
Gmail - Inbox - dusjagr@gr x Ergebnis der letzten Test x Jaaga | Creative Common x
jaaga.in
Gmail SBB LEO Speedtest FHNW dusjagr SGMK hackteria PiratePads Imported From Fi... Imported From Fi...



[Juice](#) | [Contact](#) | [Gallery](#) | [Press](#) | [RSS](#)

- HOME
- EVENTS
- PROJECTS
- PARTICIPATE
- MEDIA CENTER
- BLOG
- ABOUT

CoWorking



CoWorking is awesome. Bring your work and play with us

[Read More: view](#)

GALLERY

[PHOTOS >>](#)

[VIDEOS >>](#)

Jaaga Jargon

[Read more](#)

Jaaga, based in Bangalore, India, seeks to nurture innovative endeavors by providing space, core infrastructure, and a diverse social environment. We explore new ways of

JOIN US

Get our Mailers

Jaaga | ... Docum... ps3_ins... praesi dusjagr ... Shotwell talks dusjagr...

DIYbio – global maillist

The image is a screenshot of a web browser displaying the DIYbio website. The browser's address bar shows the URL <http://diybio.org/local/boston/>. The browser tabs include "Gmail - some thoughts for prese..." and "DIYbio » Boston DIYbio".

The website features a logo for "DIY BIO" with a stylized face above the text. Below the logo is a navigation menu with the following items: "Blog", "About", "Chat", "Local Groups", "Mailing List & Event Calendar", "Press", "Projects", "Survey", and "Forums".

The main content area has a section titled "Boston DIYbio" in orange text. Below the title is a paragraph: "This is Boston DIYbio. We meet up every 2-4 weeks in the Somerville/Cambridge/Boston area. Join our low-traffic **mailing list** to hear about upcoming events." Below this text is another orange heading: "diybio-boston April 2010 meetup: Microbial Fuel Cell Edition", followed by the date "Wednesday, April 21st, 2010".

Below the text is a photograph of six people sitting around a table in a workshop-like setting, engaged in a discussion. The table has various items on it, including papers and a water bottle.

On the right side of the page, there is a sidebar with two sections. The first section is titled "about us" in orange and contains the following text: "DIYbio is an organization that aims to help make biology a worthwhile pursuit for citizen scientists, amateur biologists, and DIY biological engineers who value openness and safety. This will require mechanisms for amateurs to increase their knowledge and skills, access to a community of experts, the development of a code of ethics, responsible oversight, and leadership on issues that are unique to doing biology outside of traditional professional settings." The second section is titled "recent comments" in orange and is currently empty.

OpenPCR

- the \$599 Personal PCR Machine / Thermal Cycler - Google Chrome

Jun 25 3:46 PM dusjagr

Inbox (6) - dusjagr@gmail.com Nur Akbar Arofattullah DIY Laminar Air Flow - Life OpenPCR - the \$599 Perso

openpcr.org



For quick access, place your bookmarks here on the bookmarks bar. [Import bookmarks now...](#)

Other Bookmarks

OpenPCR

THE MACHINE BUILD IT USE IT COMMUNITY BLOG



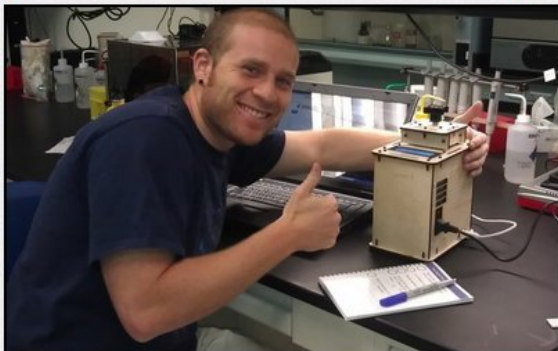
Your Personal PCR Machine

Now Shipping!

Copy DNA from your desktop or laptop

[Click to learn more](#)

Scientists - PCR at your bench!



Biohackers - Explore your DNA!



Hackerspaces – A Swiss Version?

http://hackerspaces.org/wiki/List_of_Hacker_Spaces

List of Hacker Spaces - Hackerspace...

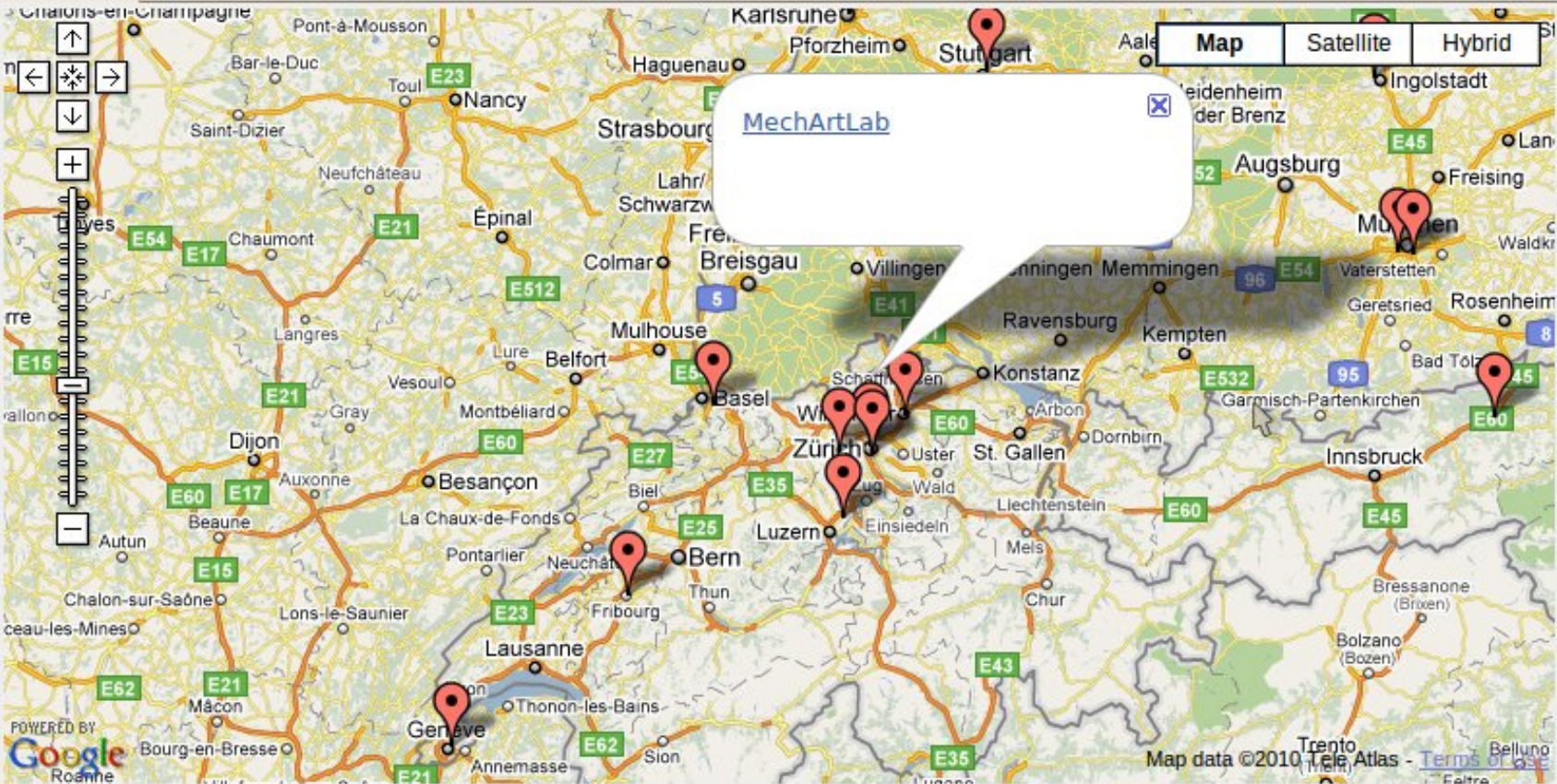
List of events
> add an event

List of projects
> add a project

Recent changes

Go Search

What links here
Related changes
Special pages
Printable version
Permanent link
Browse properties



Map Satellite Hybrid

MechArtLab

If we're missing your space or you want and/or are about to create a new one, please [add yourself](#) to the list.

hackerspace	Country	State	City	Website
BAH	Argentina	Buenos Aires	Capital Federal	

Workshops for Artists, Kids and Geeks



SMAS Swiss Mechatronic Art Society

SSAM Société Suisse d'Art Mécatronique

SGMK Schweizerische Gesellschaft für Mechatronische Kunst

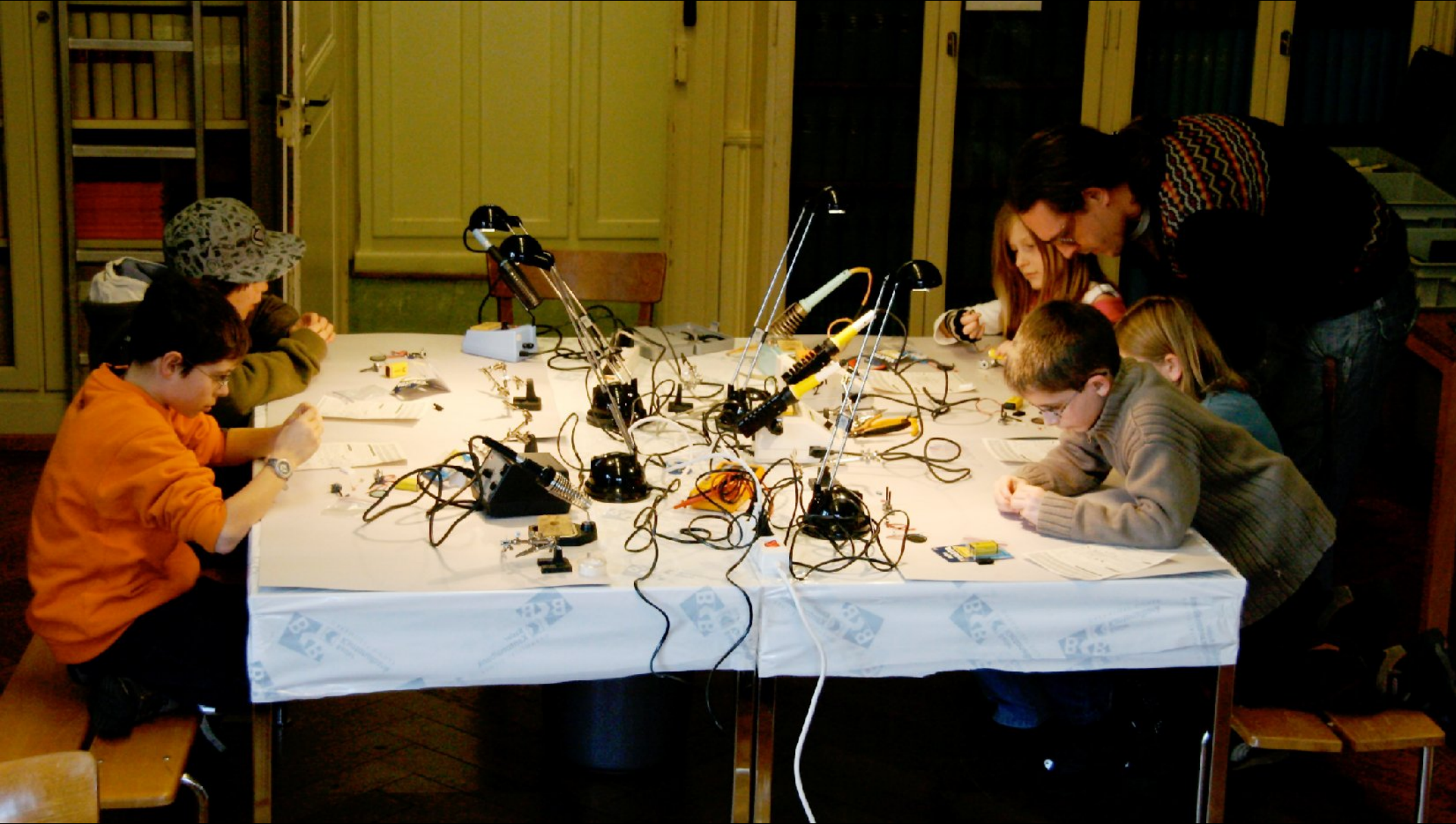
www.mechatronicart.ch



MechArtLab



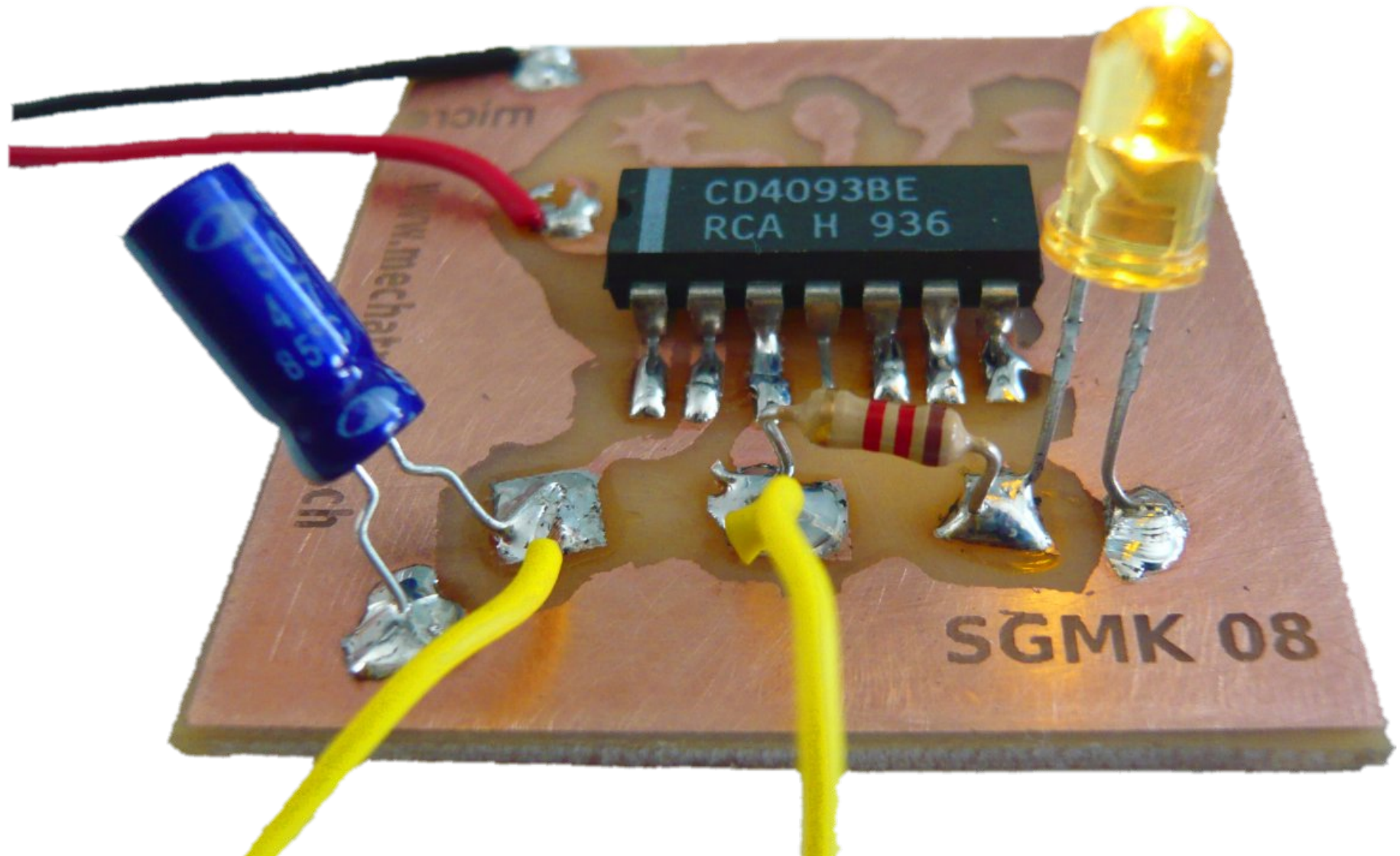
Technology outreach for Children



diy makeaway



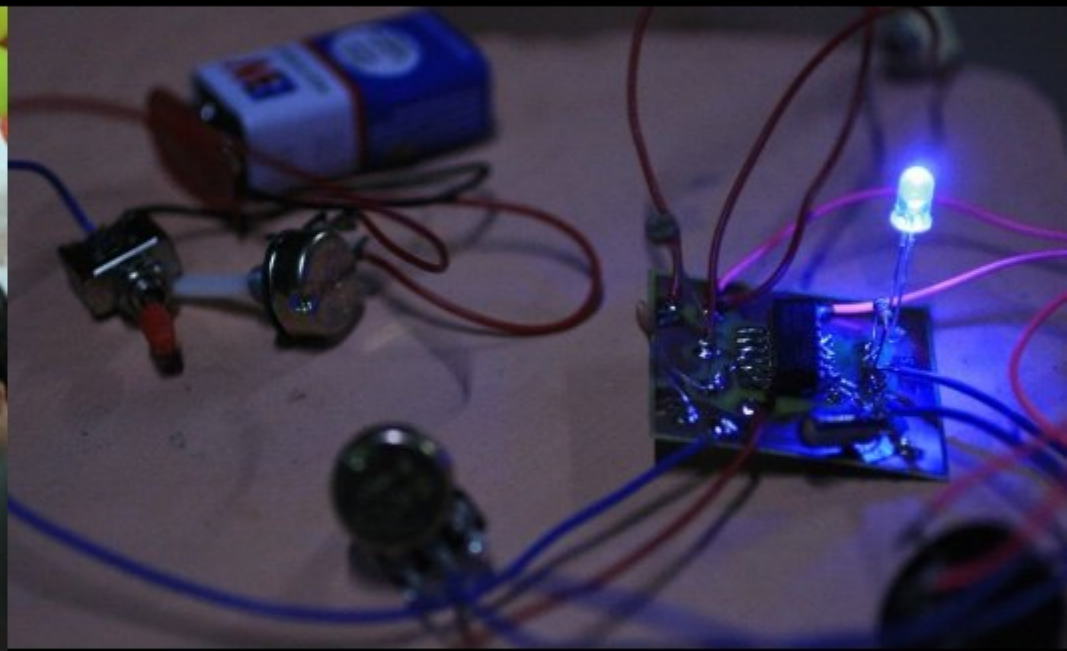
Krachmacher bauen mit der Schweizerischen Gesellschaft für Mechatronische Kunst



diy 自作 業



Krachmacher bauen mit der Schweizerischen Gesellschaft für Mechatronische Kunst



diy डीआईआर्य



Krachmacher bauen mit der Schweizerischen Gesellschaft für Mechatronische Kunst

[A N Y M A | RESEARCH - BLOG]

NEWS FROM THE LAB...

12.14.2012

BABY-GNUSBUINO

Categories: gusb

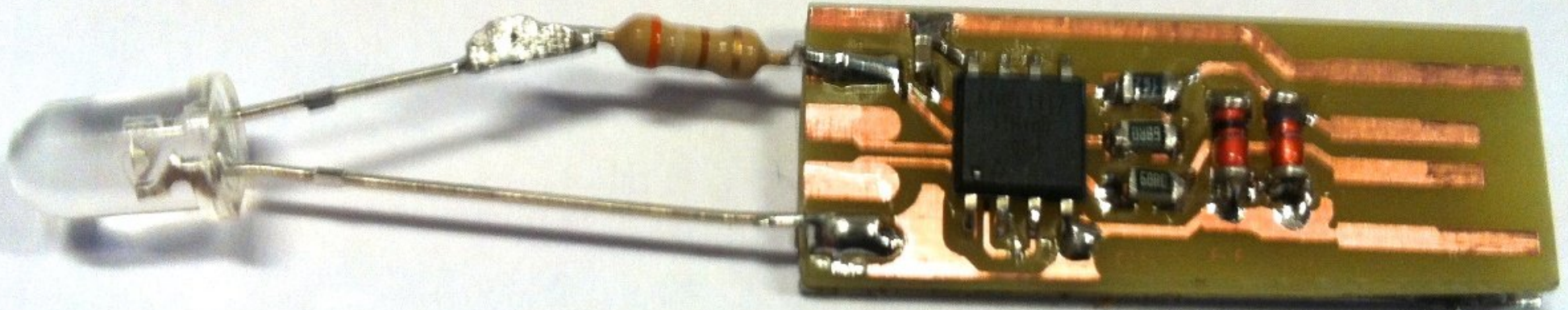
CATEGORIES

3D-Printing

Eagle

gusb

Hardware hacking

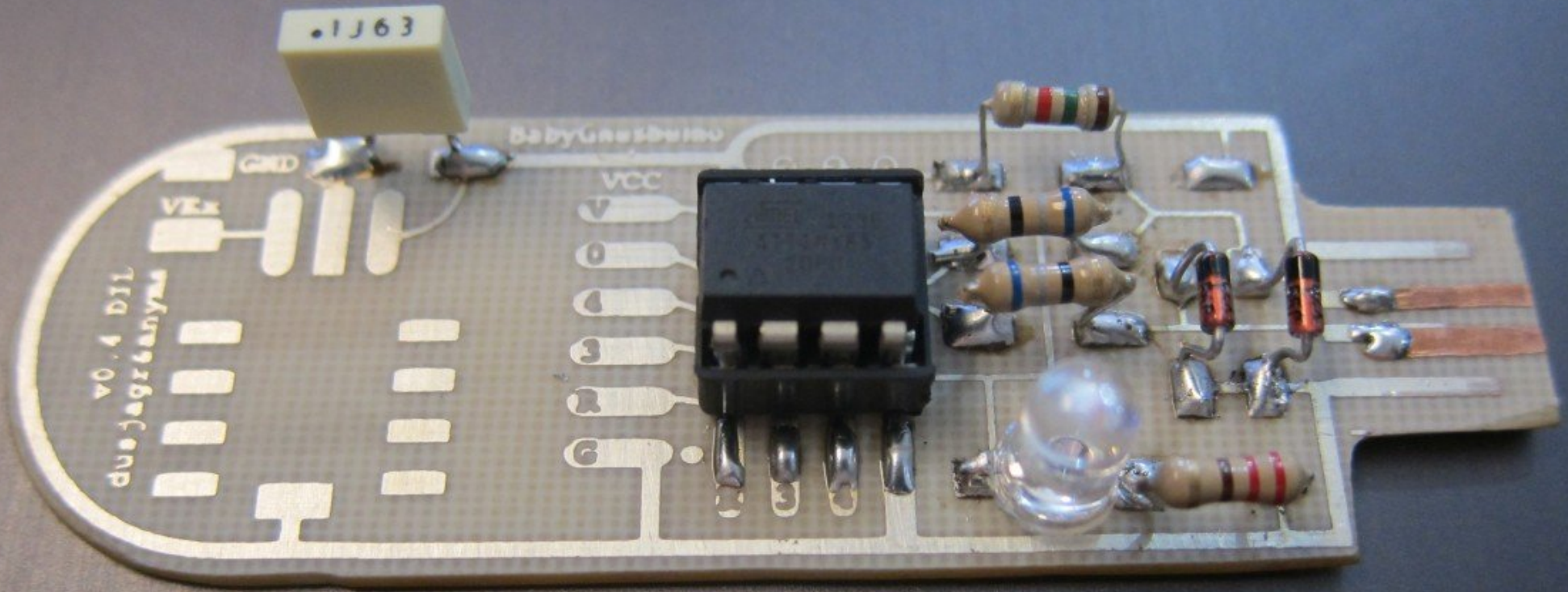


diy in DIY

Daerah
Istimewa
Yogyakarta



Krachmacher bauen mit der Schweizerischen Gesellschaft für Mechatronische Kunst



playaround workshop

2010 diwo culture 文化培養皿

電子藝術與數位環境工作坊 - 文化培養皿 ELECTRONIC ARTS WORKSHOP - DIWO CULTURE

指導單位 教育部 主辦單位 協辦單位



推世納音樂大賽





What is a Lab?

Techn



What is Lab?

← Lab-in-Boxes

?

Lab-in-Gallery →

Where is People?

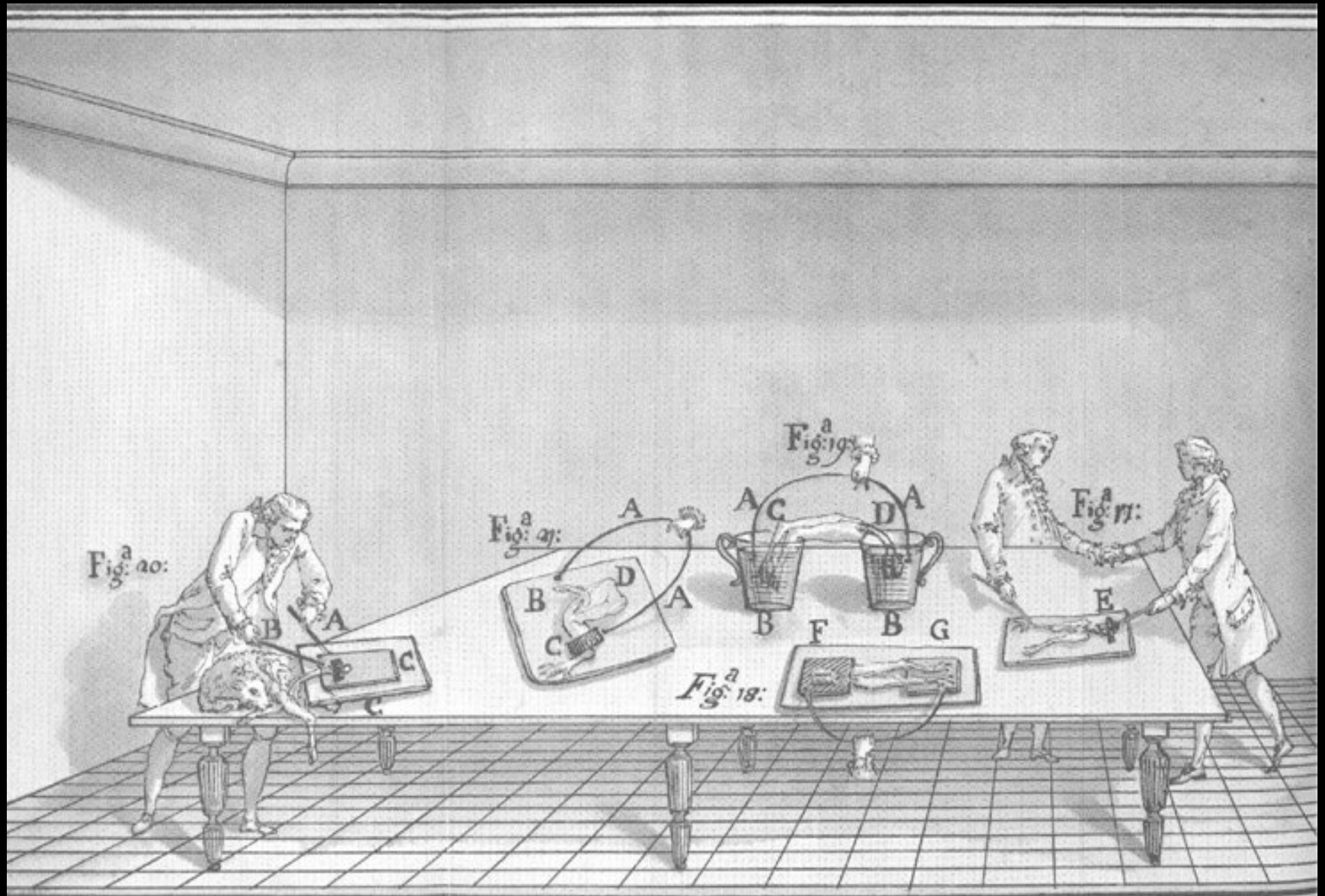
Art



Other labs... Alchemist's Kitchen – 15th Century



Other labs... Galvani's Lab – ca 1770



Other labs... NanoTech Cleanroom – 2005



Other labs... Molecular Biology – 1999



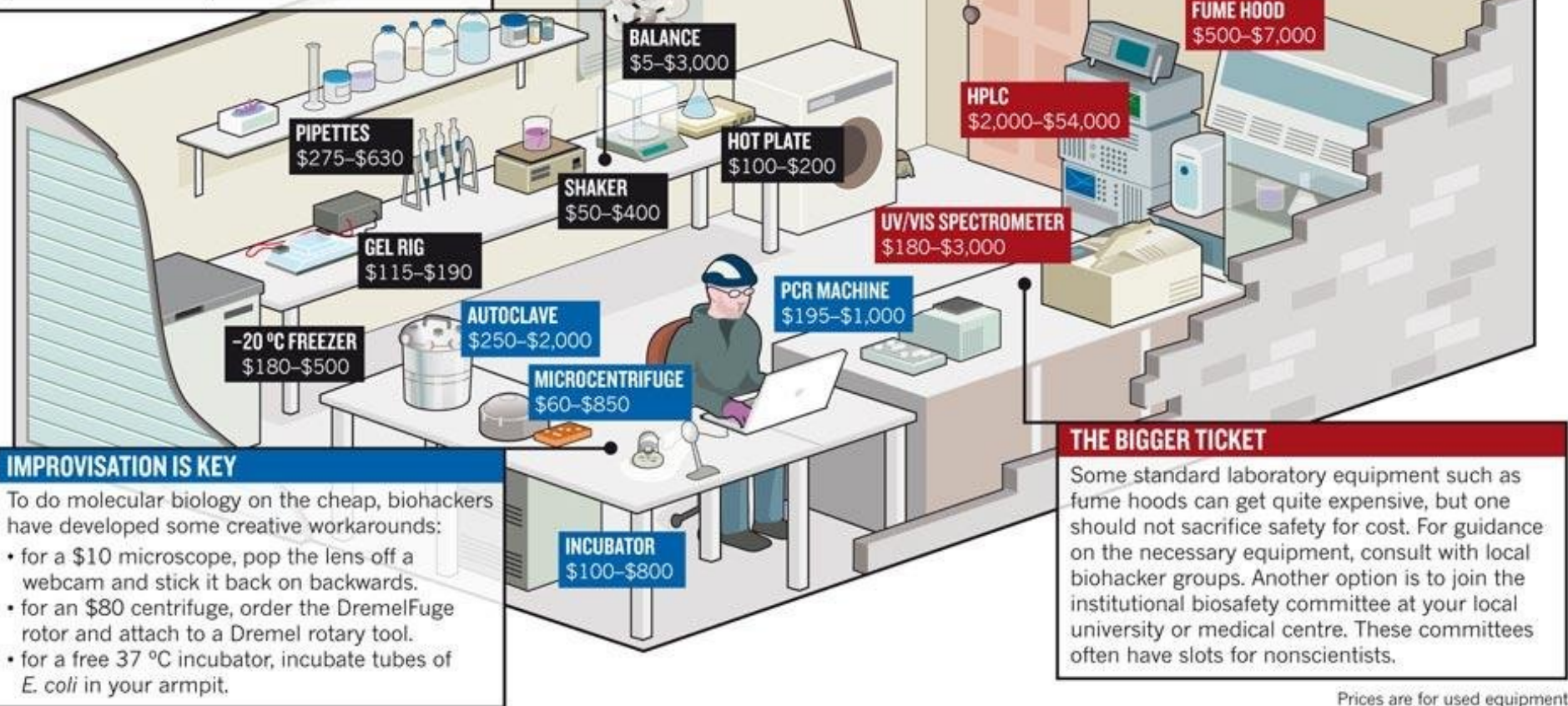
Other labs... GlobalBio Los Alamos – 2012



Other labs... DIY bio general – 2009

GETTING STARTED

A garage biolab can be set up for a few hundred to a few thousand dollars. The cheapest source of used lab equipment is often eBay, but beware sellers who say they aren't able to verify whether or not the equipment actually works. In such cases, it usually doesn't. LabX.com and BestUse.com are more reliable but also tend to be pricier. And would-be biohackers can also scout out downsizing biotechnology and pharmaceutical companies for deals.

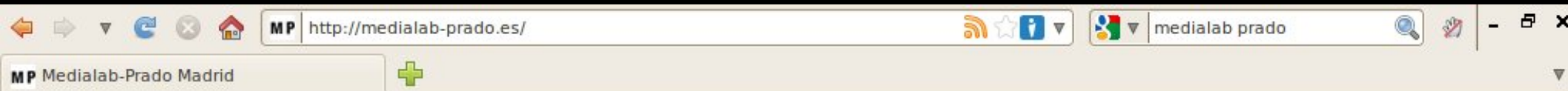


IMPROVISATION IS KEY

To do molecular biology on the cheap, biohackers have developed some creative workarounds:

- for a \$10 microscope, pop the lens off a webcam and stick it back on backwards.
- for an \$80 centrifuge, order the DremelFuge rotor and attach to a Dremel rotary tool.
- for a free 37 °C incubator, incubate tubes of *E. coli* in your armpit.

Medialab Prado – Madrid



MEDIALAB PRADO

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Español  [RSS](#)

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Interactivos?'10: Neighborhood Science · Workshop

Medialab-Prado holds the international workshop-seminar **Interactivos?'10: Neighborhood Science** from June 7 through 23, 2010, where ten selected projects will be collaboratively developed. These ten proposals put into action collaboration and local urban knowledge networks using free software and hardware technologies as well as "Do It Yourself" (DIY) and "Do It With Others" (DIWO) methods.

Tutors: Platoniq, Douglas Repetto, and the work team formed by Andrés Burbano, Alejandro Araque, Alejandro Duque and Alejandro Tamayo. Assistants: Massimo Avisati, Pablo Ripollés and Yago Torroja.

Lines of work

[Interactivos?](#)

[Visualizar](#)

[Inclusiva-net](#)

[Commons Lab](#)

[AVLAB](#)

Activities

[Thursdays at Medialab-Prado](#)

[Workshops](#)

[AVLAB Meetings](#)

[Seminars](#)

[Work Groups](#)

Calendar

« June 2010 »

Other labs... BioCurious, Bay Area – 2012



Other labs... House of Natural Fiber - Yogya 2009



Other labs... Lifepatch.org – Yogyakarta 2012



Other labs... Lifepatch.org – Yogyakarta 2013



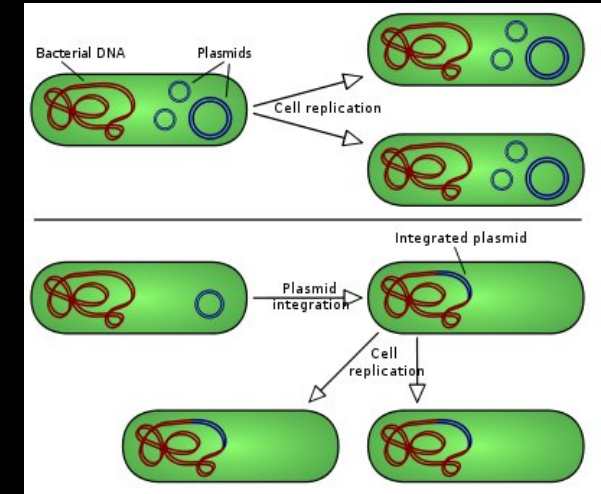
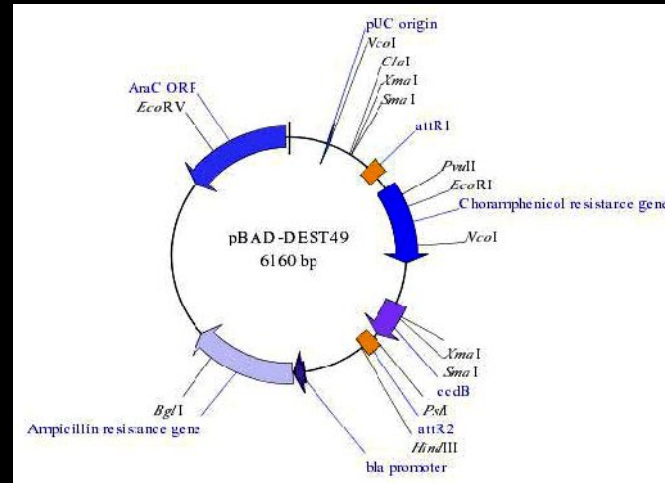


Hackteria

Open Source Biological Art

Life Sciences / Wetware

Biology, Medicine Pharmaceuticals, Food & Agriculture





HACKTERIA.ORG

Open Source Biological Art, DIY Biology, Generic Lab Equipment

In the last 4 years, since the founding of hackteria, we have been actively searching for collaborators, who share the same enthusiasm of sharing and developing techniques to work artistically with living systems and turn this knowledge into instructions and workshops, accessible to the amateur scientist/artist/hacker. Some important and fruitful collaborations are mentioned here.

Collaborators

House of Natural Fiber, Yogyakarta, Indonesia
Akbar, Timbil, et al, lifepatch.org, Indonesia
Denisa Kera, foodhackerspaces.org, Singapore
Georg Tremmel, Biopresence, Japan/Austria
Antony Hall, Owlproject, UK
Stefan Doepner, F18institut, Cirkulacija 2, Slovenia/Germany
Alejo Duque, Switzerland/Columbia
Mac Cowell, DIYbio Boston, USA
Urs Gaudenz, SGMK & HSLU, Switzerland
Spela Petric & Maja Smrekar, Slovenia
Brian Degger, Transilab, Newcastle, UK
Sachiko Hirose, EPFL, Switzerland
Rüdiger Trojok, diyBio Freiburg, Germany
Andrew Gryf Paterson, Herbologies/Foraging Network
Antti Tenetz, Erich Berger, Laura Beloff, Finish Bioart Society
Kapelica Gallery, Slovenia
and many more...

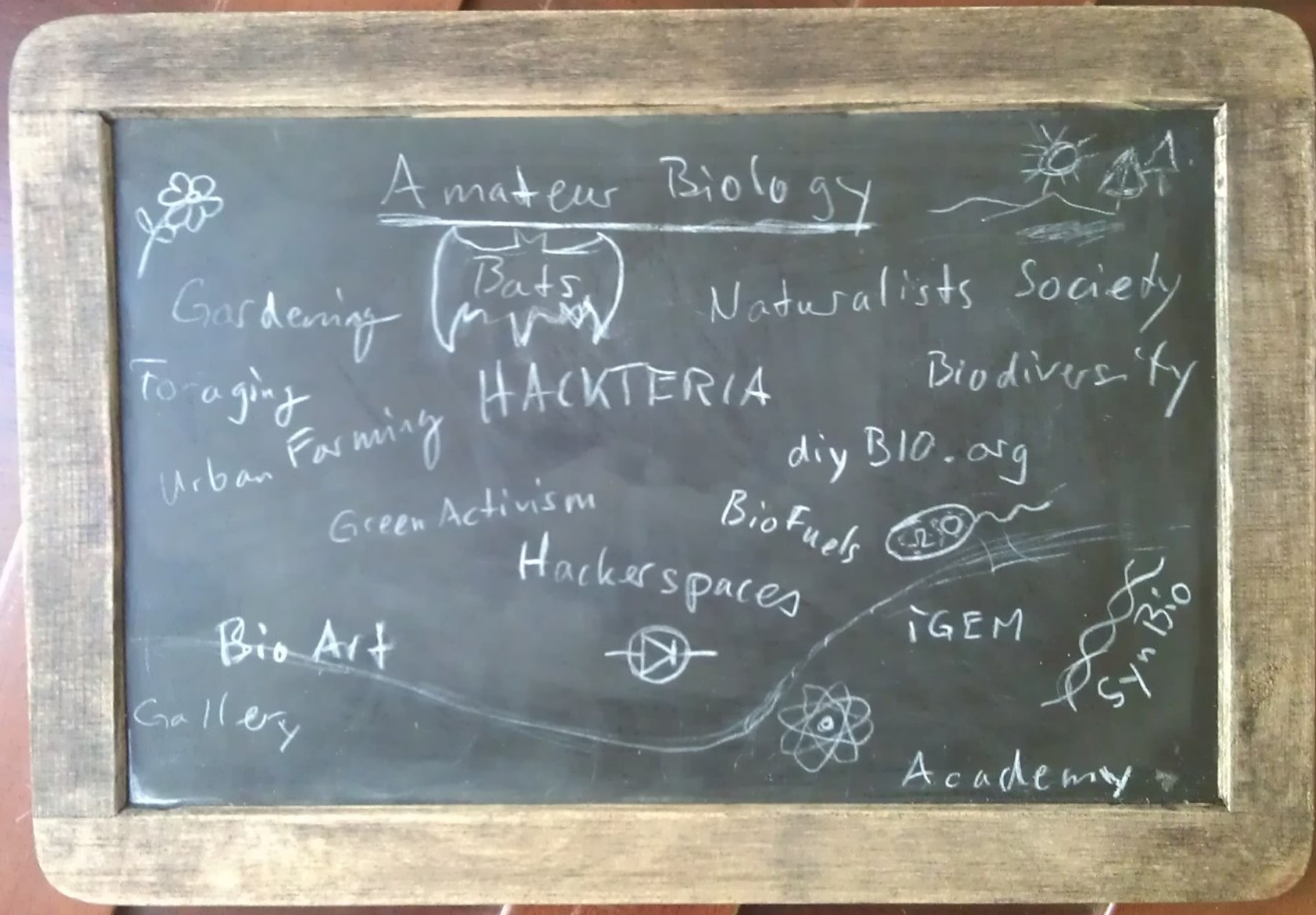
The screenshot shows the Hackteria.org website interface. At the top is the logo and tagline. Below is a navigation menu with links for Home, About, Discourse, DIY microscopy, Media, Network, News, Projects, Workshops, and Wiki. A section titled 'Check out the Latest Articles:' displays a row of article thumbnails. The main content area features an article titled 'Hackteria interview on WMMNA' by hostprods, dated Friday, September 23, 2011. The article has 2 comments and includes a thumbnail image of a biological experiment. To the right, there is a 'Hackteria Wiki' section and a 'Tag Cloud'.



Background: Interactivos?'09



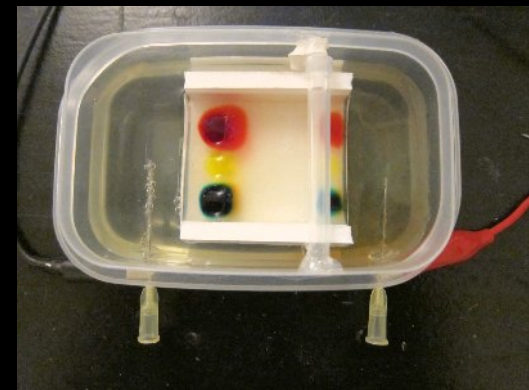
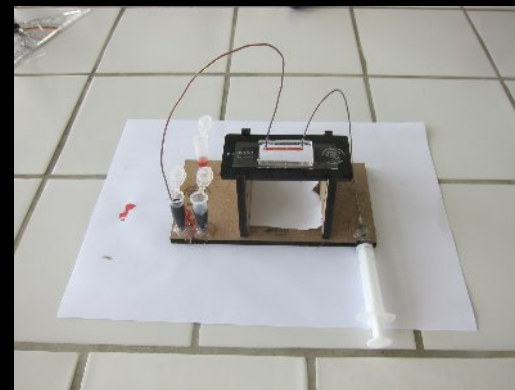
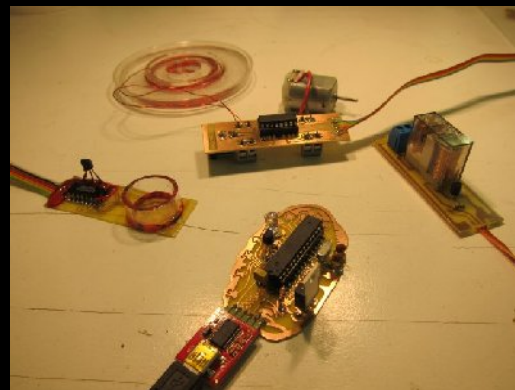
Hurray to the Amateurs...



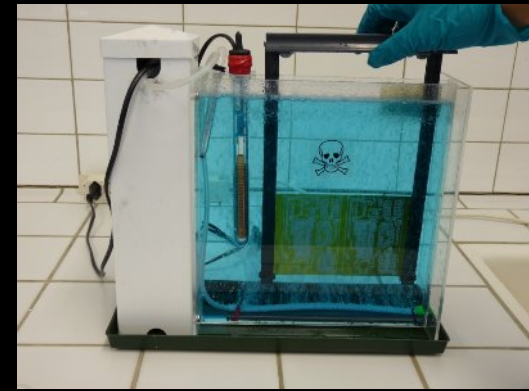
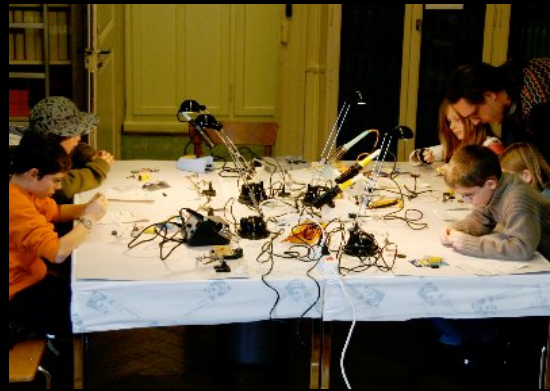
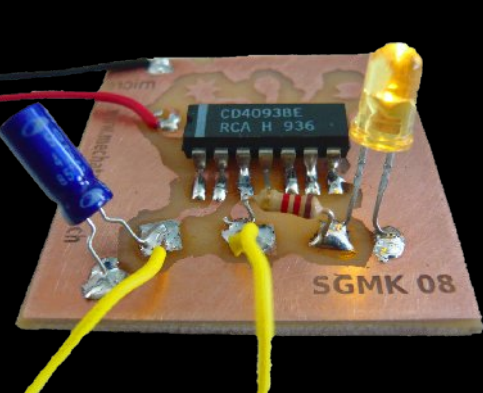


Labs I was involved recently

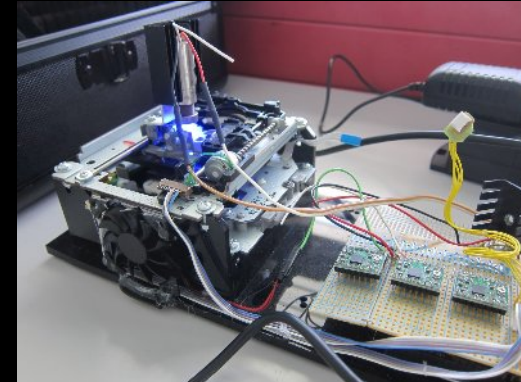
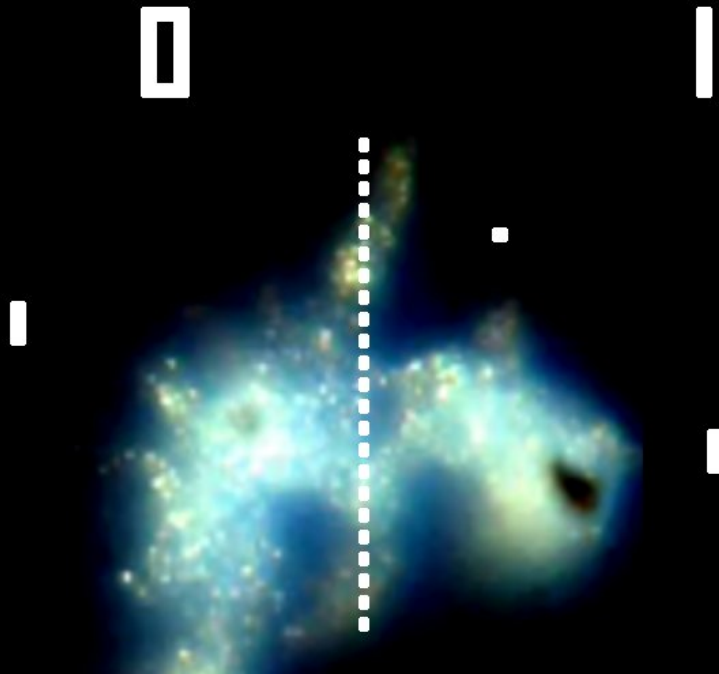
dusjagr labs II, Ljubljana



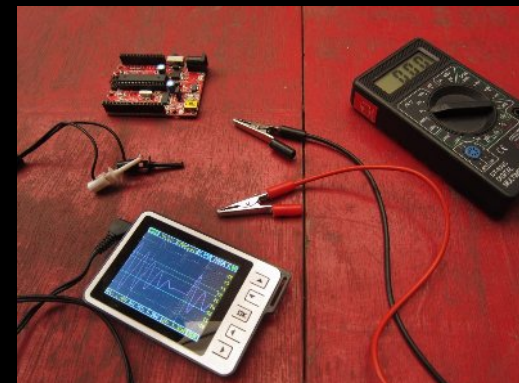
MechArtLab, SGMK, Zürich



NanoLabCourses, HLS, FHNW, MuttENZ



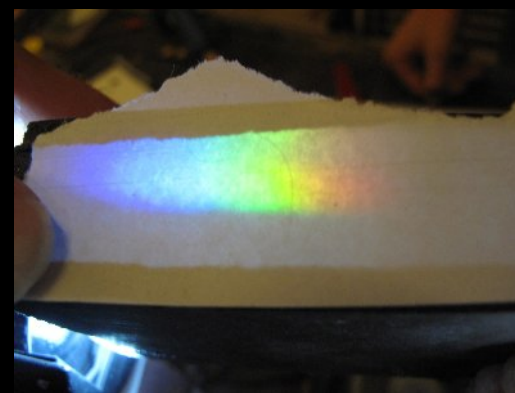
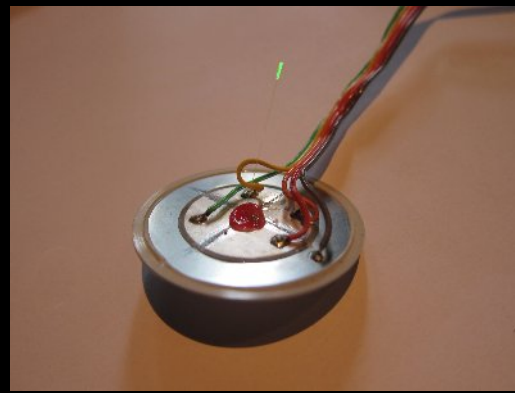
BioHacker's Lab-in-a-Box, Everywhere



Hackteria Distillery, Jaaga, Bangalore



How to start a NanoLab in a former gay bar



How to start a NanoLab in a garden



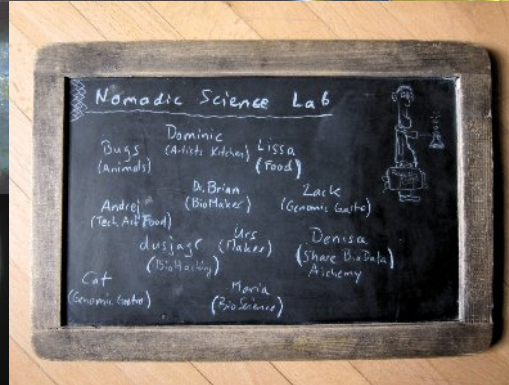
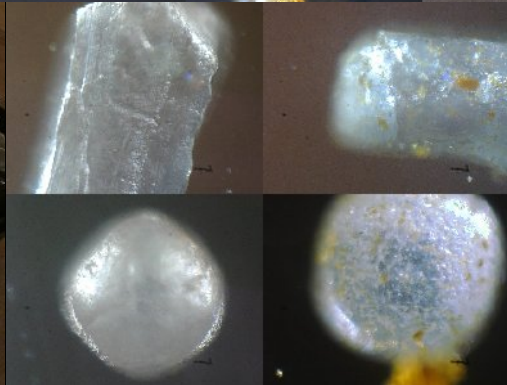
Hacking Angkringan, Yogyakarta



HackteriaLab 2011, Switzerland



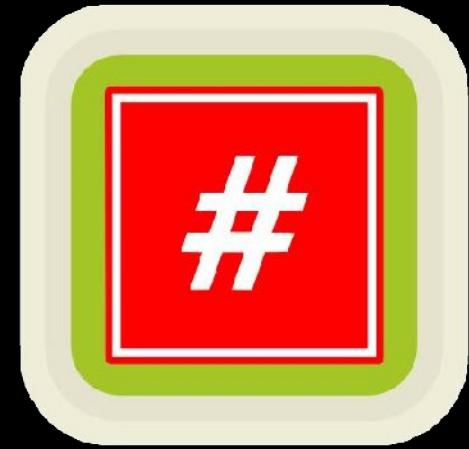
Nomadic Science Lab, Mutamorphosis, Prag



HackteriaLab 2013 - Bangalore, 28.1 – 12.2



BioTehna / hackteria & Kapelica

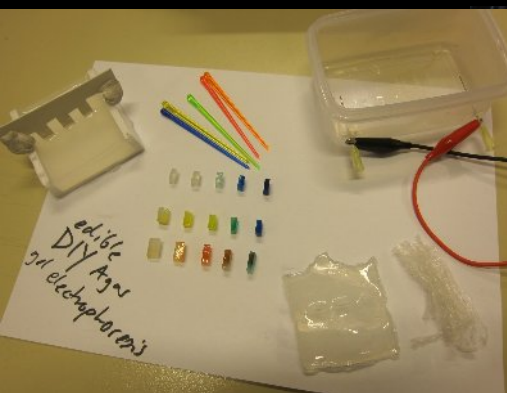


BIO+teHna

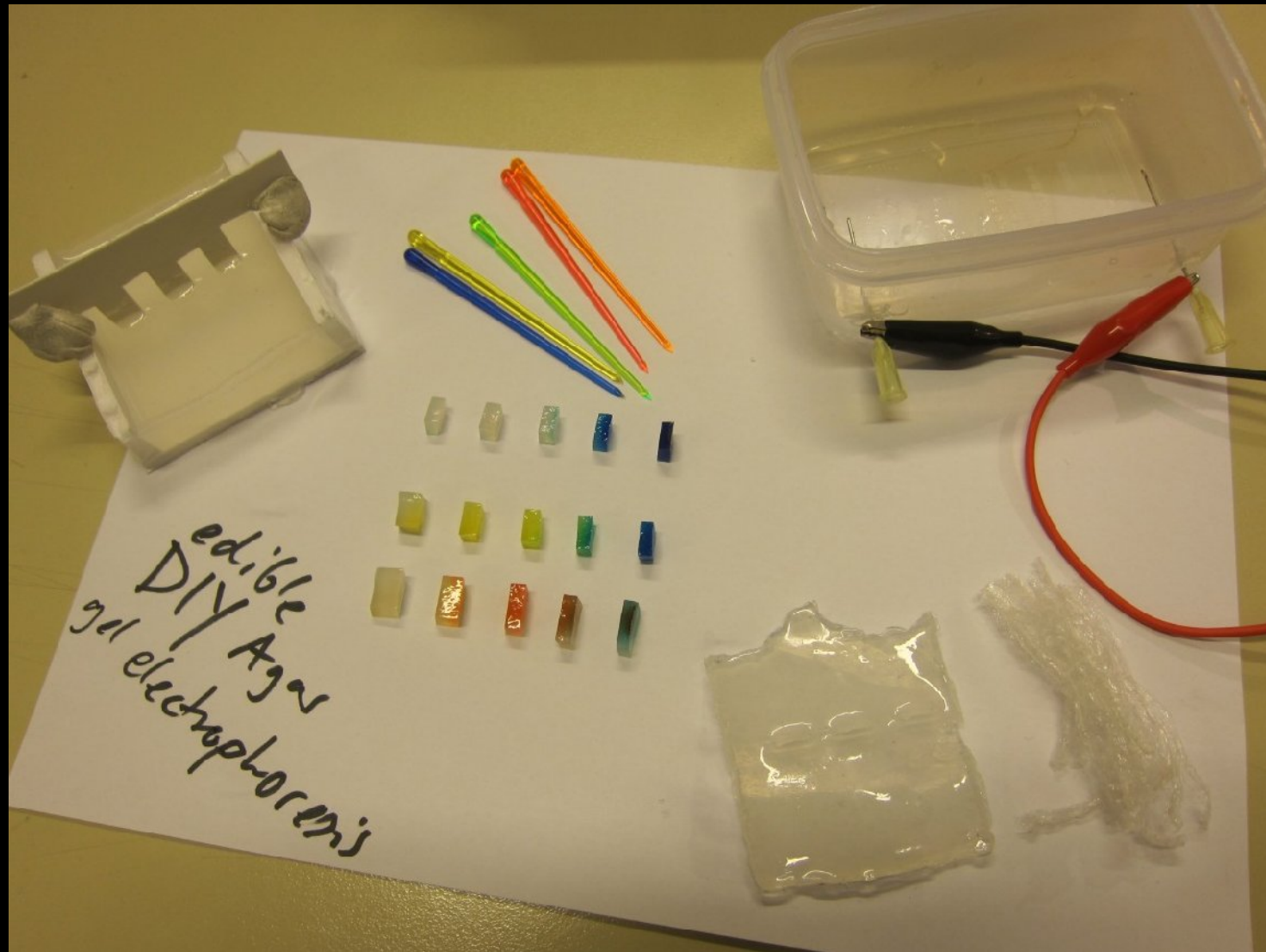
Platform for Artistic Research on Life Systems

Kapelica Galley, Hackteria, Kiberpipa and various local and international Partners

BioTehna Lab, Ljubljana



BioTehna Laboratory – Phase 1 completed!



Kapelica Gallery / Kiberpipa, Ljubljana, Slovenia
How to start a BioLab for Artists, Geeks and Educators

Yashas Shetty, CEMA – Bangalore

Why should artists/designers/outsideers get involved with Synth-Bio(in particular) and Sci-Tech(in General)

"There is the obvious reasons that all outsiders bring in unique perspectives to any form of thinking-the artist/hacker has the courage to ask "stupid questions" which may not turn out to be stupid at all. the other is that the hacker/artist/designer may also come from spaces in which the technology is as important as the different contexts that it exists in -cultural/social/political which because a scientist(at least the way in which most of them are trained) may not be aware of or not be interested in."

ArtScience Bangalore | IGEM



SYNTHETIC
BIOLOGY
FOR
ARTISTS &
DESIGNERS

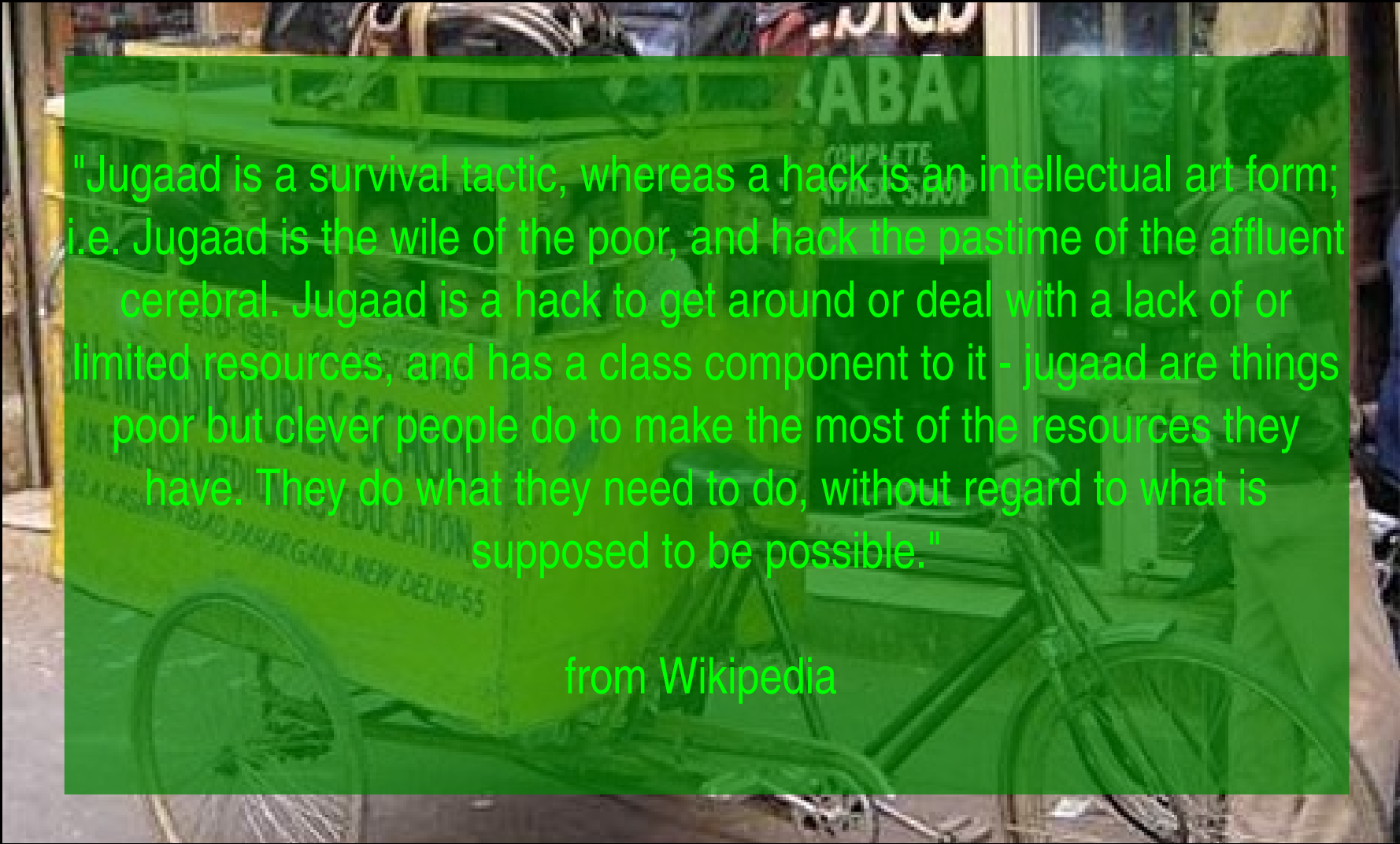
IGEM 2009 // 2010 // 2011 // Biomod 2011

Yashas Shetty (IN), Mukund Thatai (IN) and Srishi Students

Jugaad



Hack vs. Jugaad

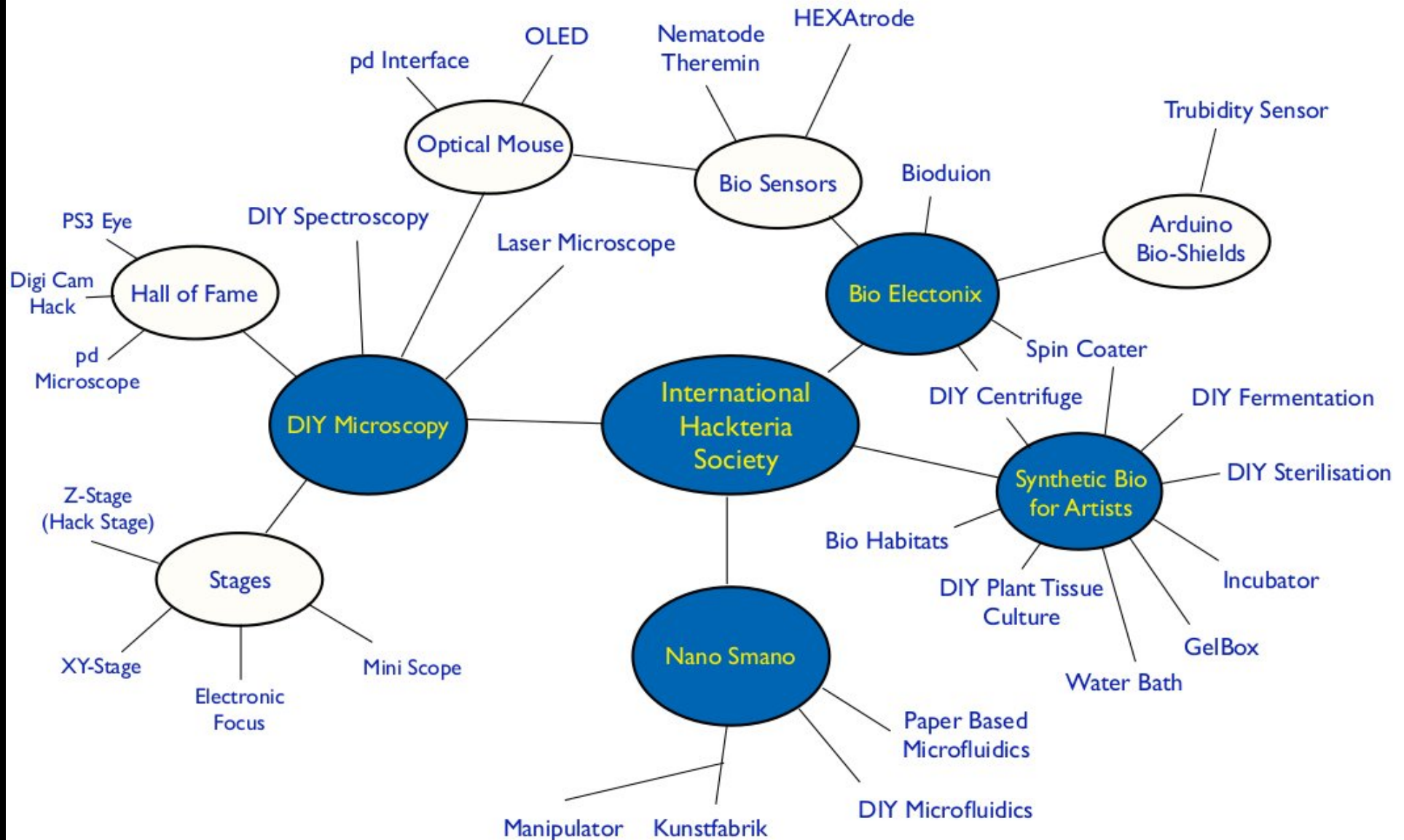


"Jugaad is a survival tactic, whereas a hack is an intellectual art form; i.e. Jugaad is the wile of the poor, and hack the pastime of the affluent cerebral. Jugaad is a hack to get around or deal with a lack of or limited resources, and has a class component to it - jugaad are things poor but clever people do to make the most of the resources they have. They do what they need to do, without regard to what is supposed to be possible."

from Wikipedia

From Jugaad to Systematic Innovation

Overview of Projects



BioPunk Workshop – IMM_Media lab, Zagreb

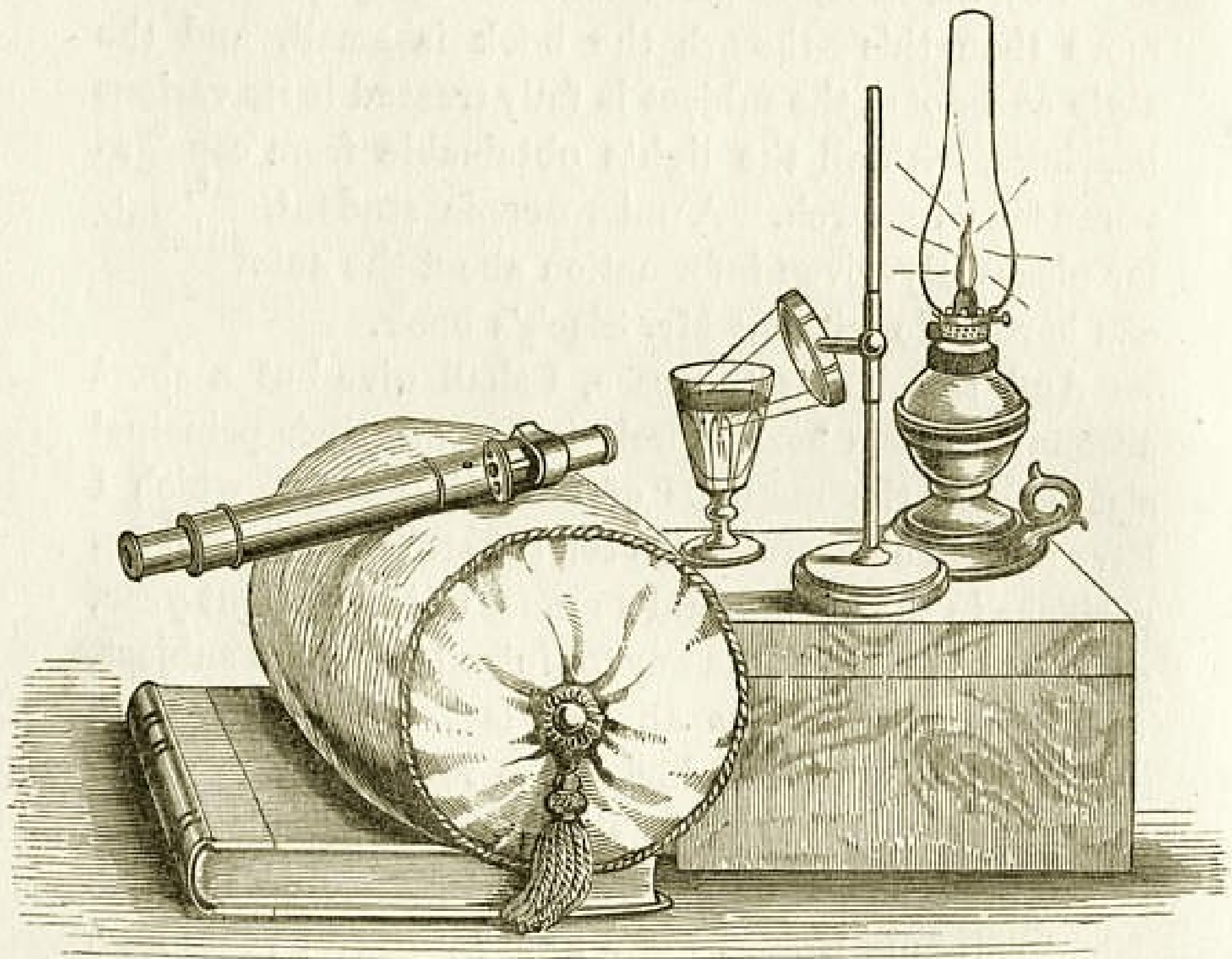


dusjagr, Kristijan Tkalec, Gjino Šutić and the IMM gang

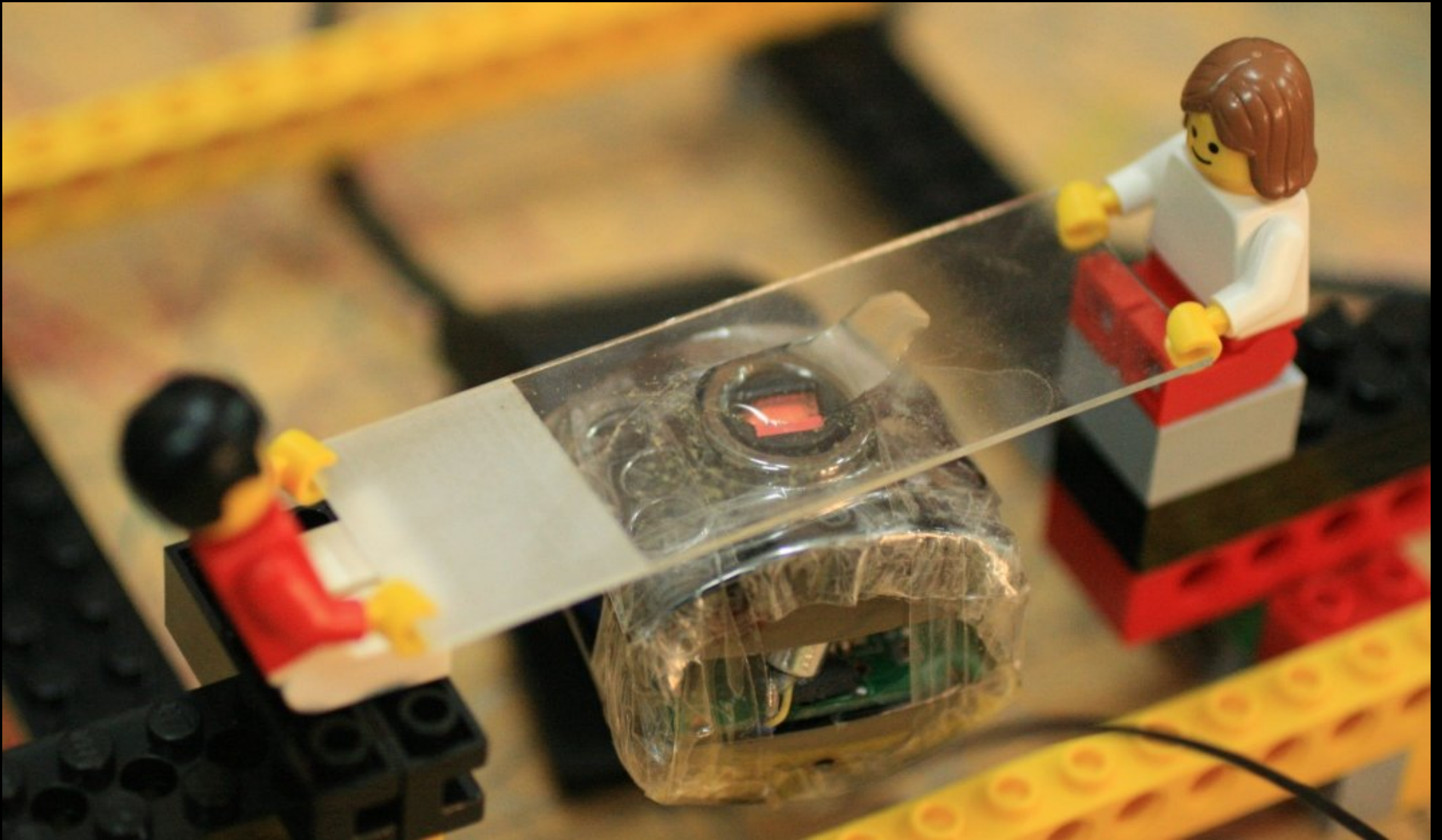
DIY microscopy



Repositioning of the lens turns a cheap webcam into a microscope

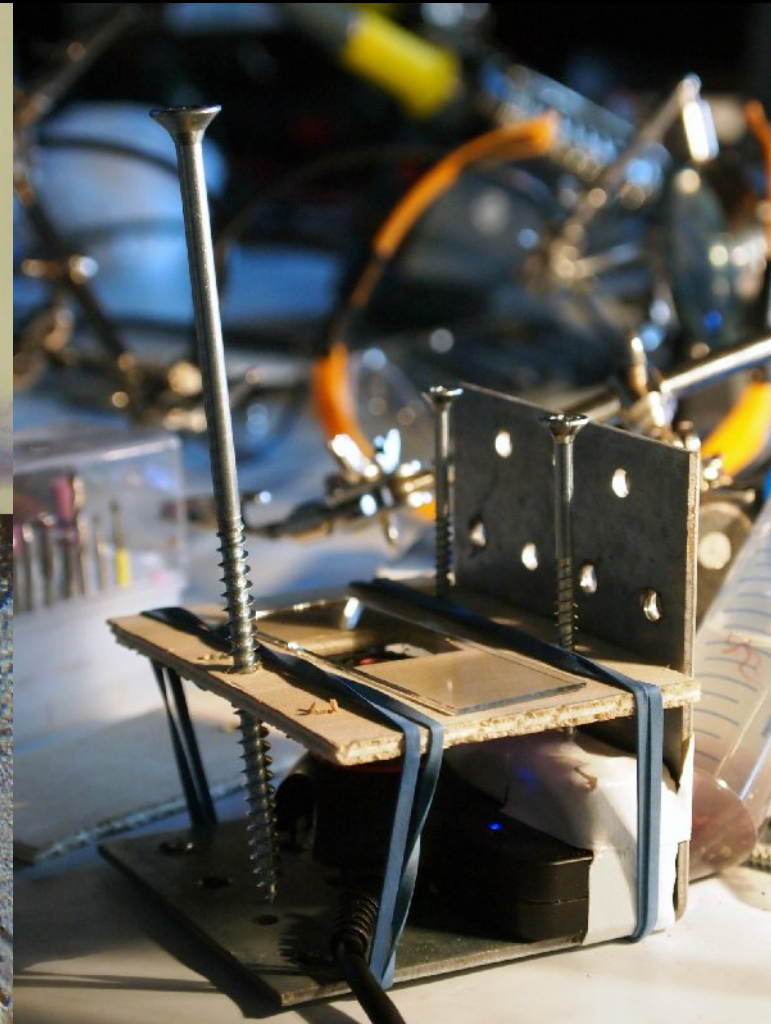
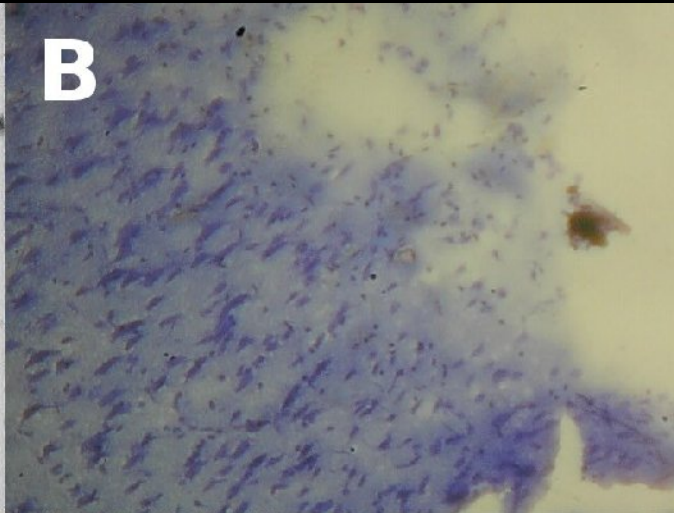
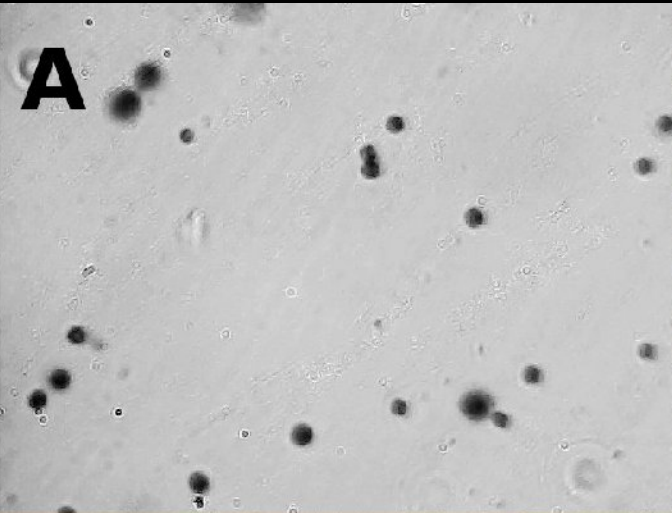


DIY microscopy



Build a stable stage for fine focusing, example from ArtSci BLR

DIY microscopy



dusjagr and many others...

Haemocytometer – PS3 Eye Hacks



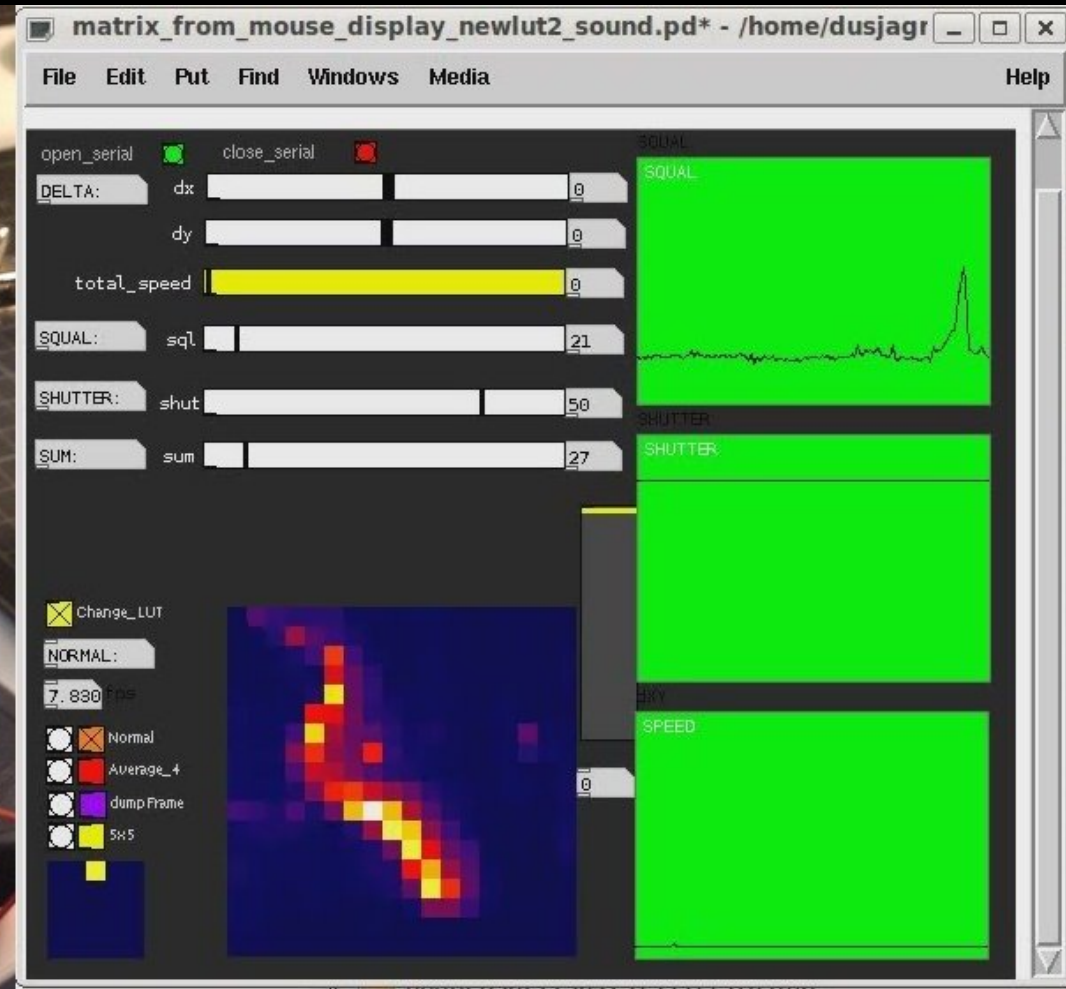
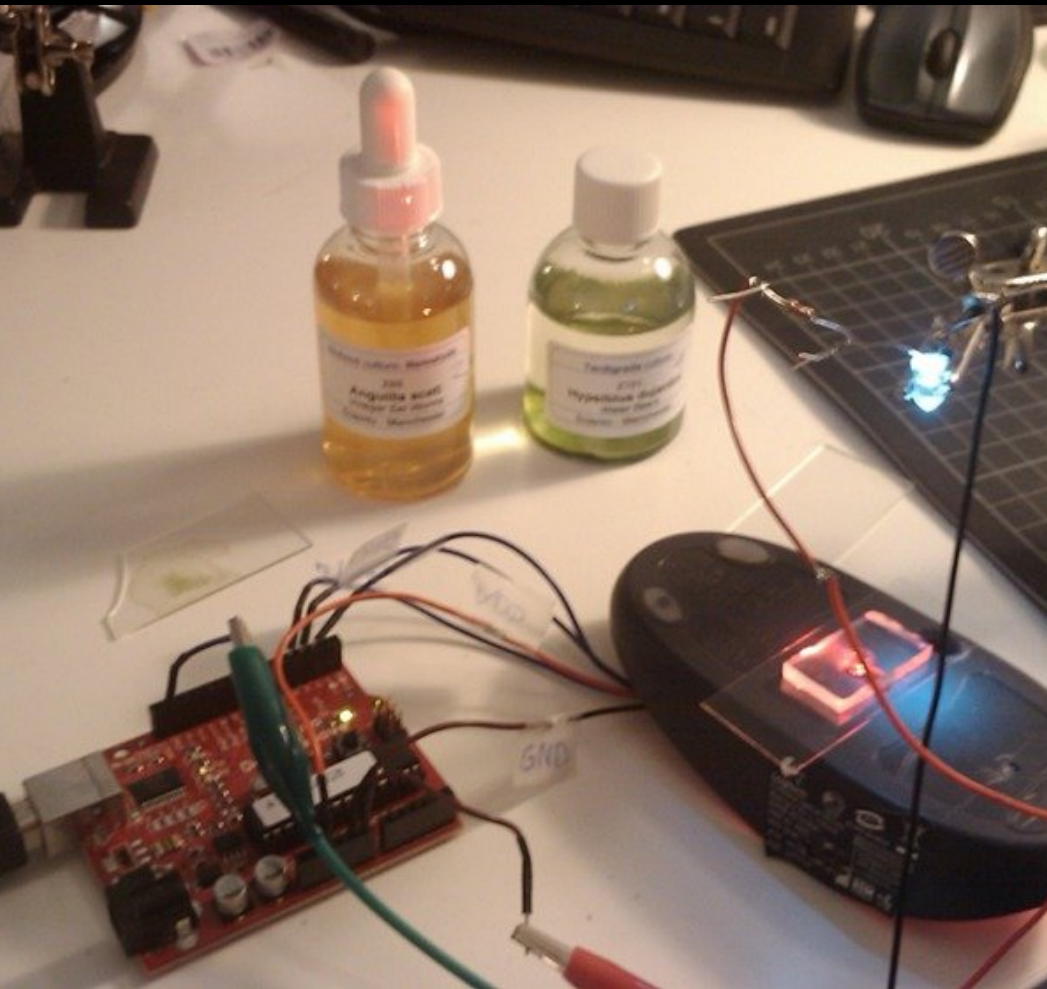
Collaboration with HONF, Akbar, lifepatch and UGM, Yogyakarta

It still needs a laptop and electricity...



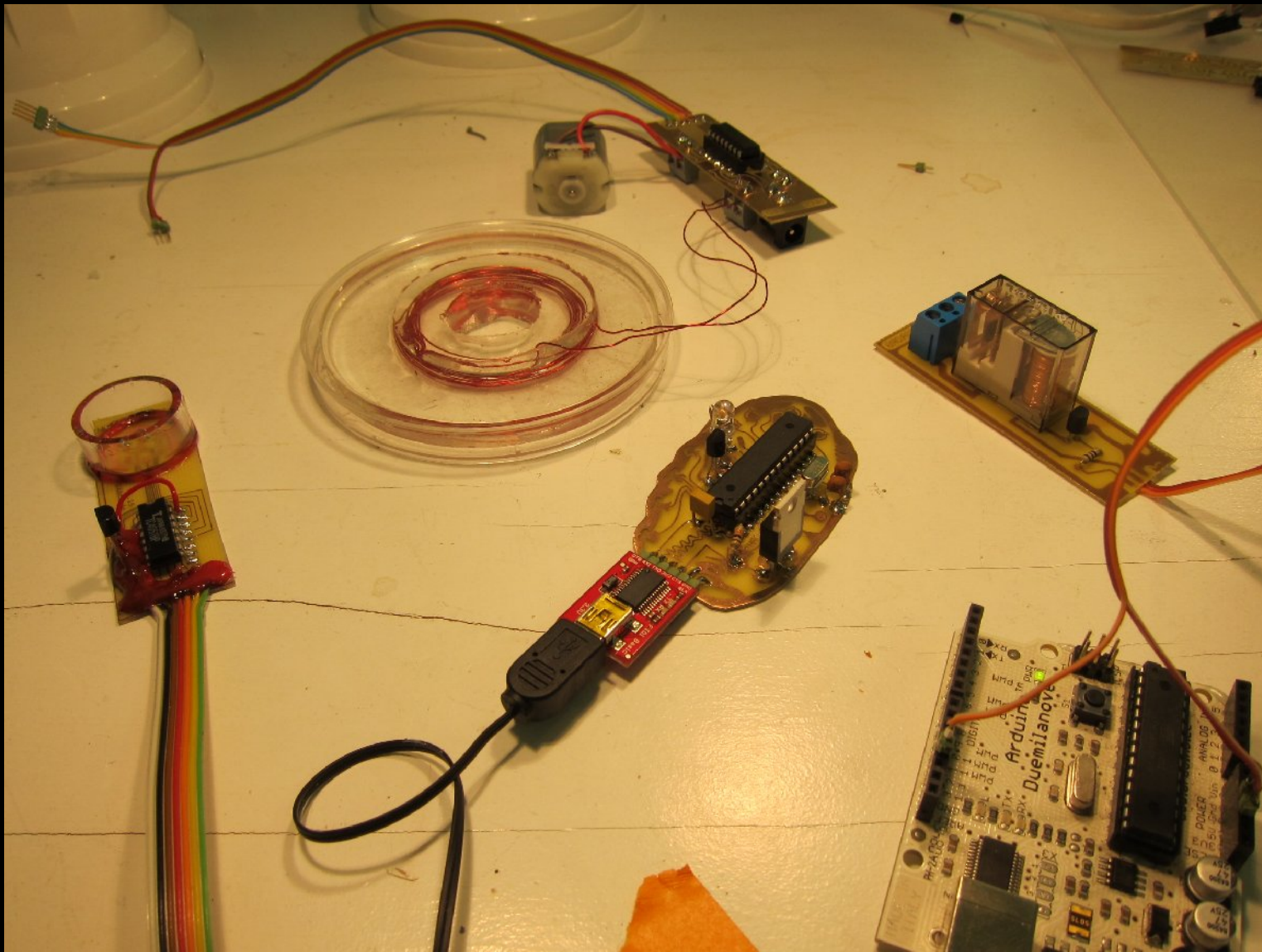
Collaboration with Finnish Bioart Society, Laura Beloff

Hacked Optical Mouse



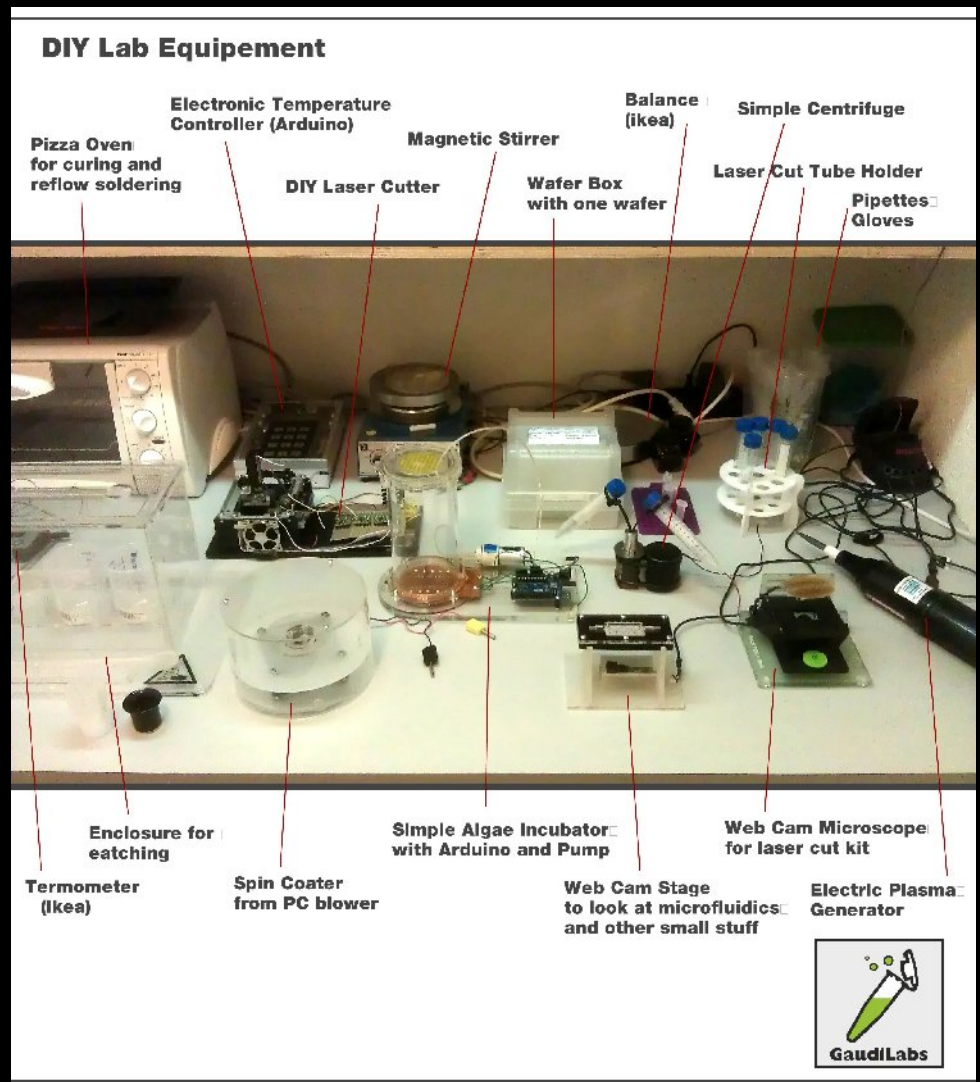
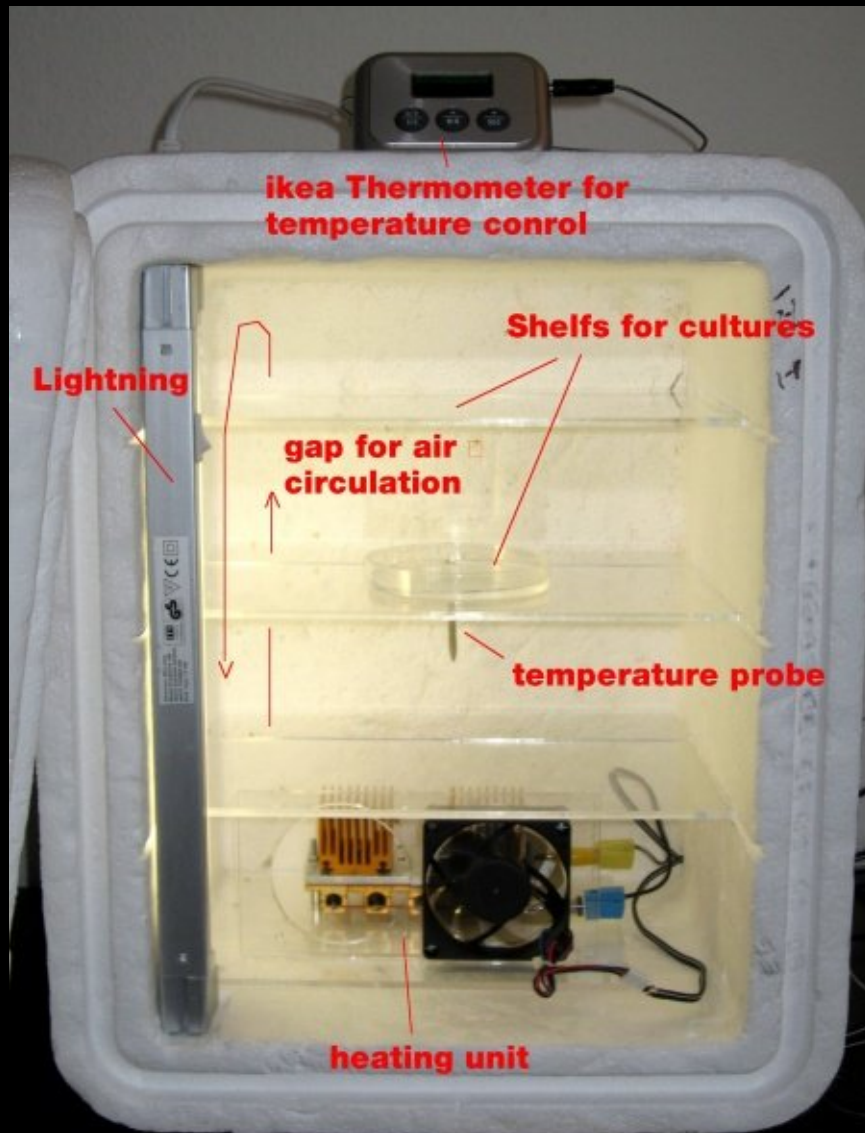
Collaboration with Urs Gaudenz SGMK, Budi Prakiosa HONF

BioElectronix



Collaboration with Urs Gaudenz, dusjagr, Andy Gracie and more

Homebuilt / fabbed lab



Cheap incubator, general lab equipment // in progress...
 Urs Gaudenz, GaudiLabs, FabLab Luzern (CH)

Jugaad PCR Thermocycler



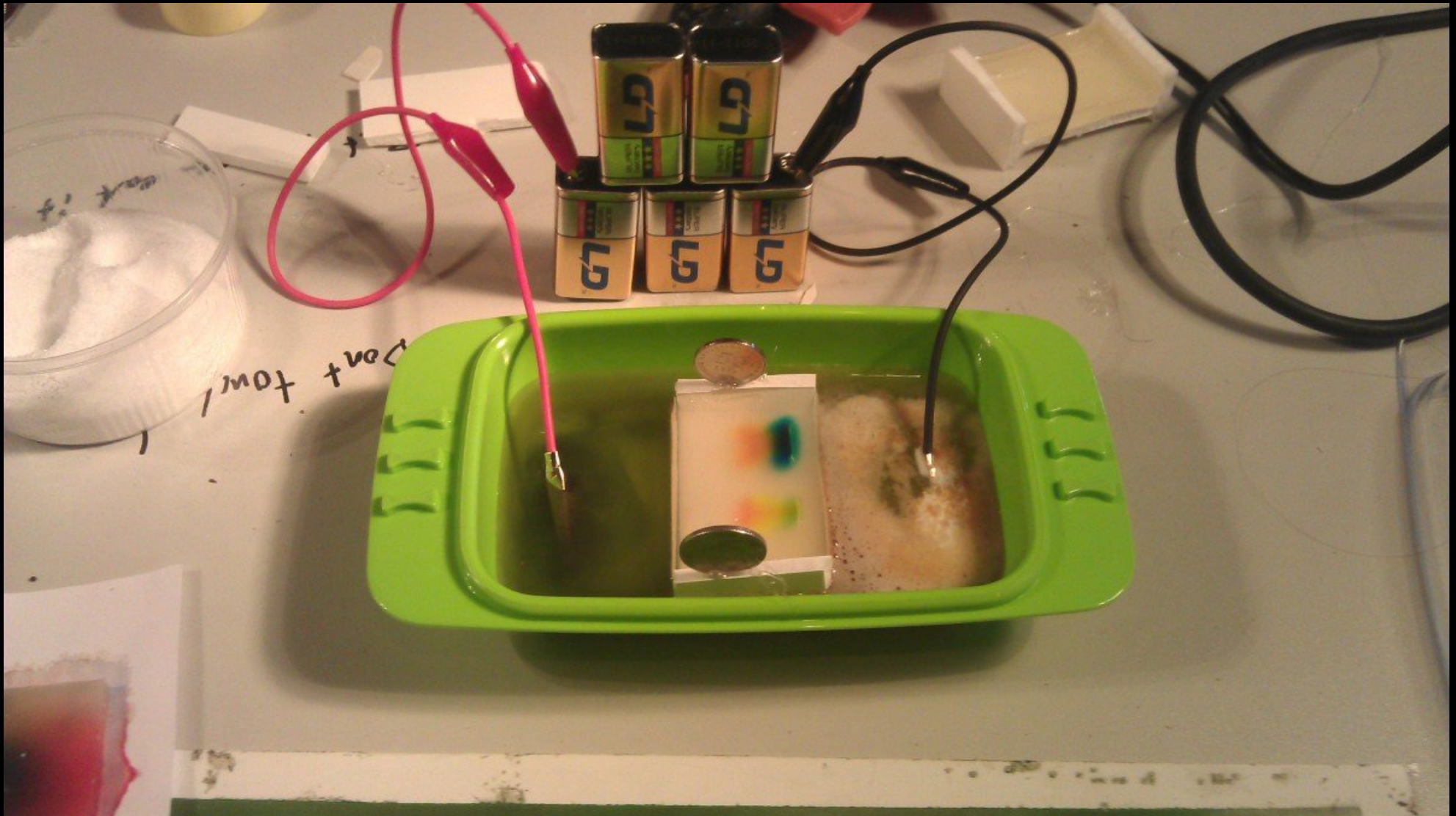
Cheap PCR thermocycler from hacked hairdryer // in progress...
Bengt Sjolen (SE), Mac Cowell (US), Sachiko Hirose (JP/CH)

Hacked harddrive centrifuge



Centrifugation, separation of chloroplasts in sugar gradient
Bengt Sjolen (SE)

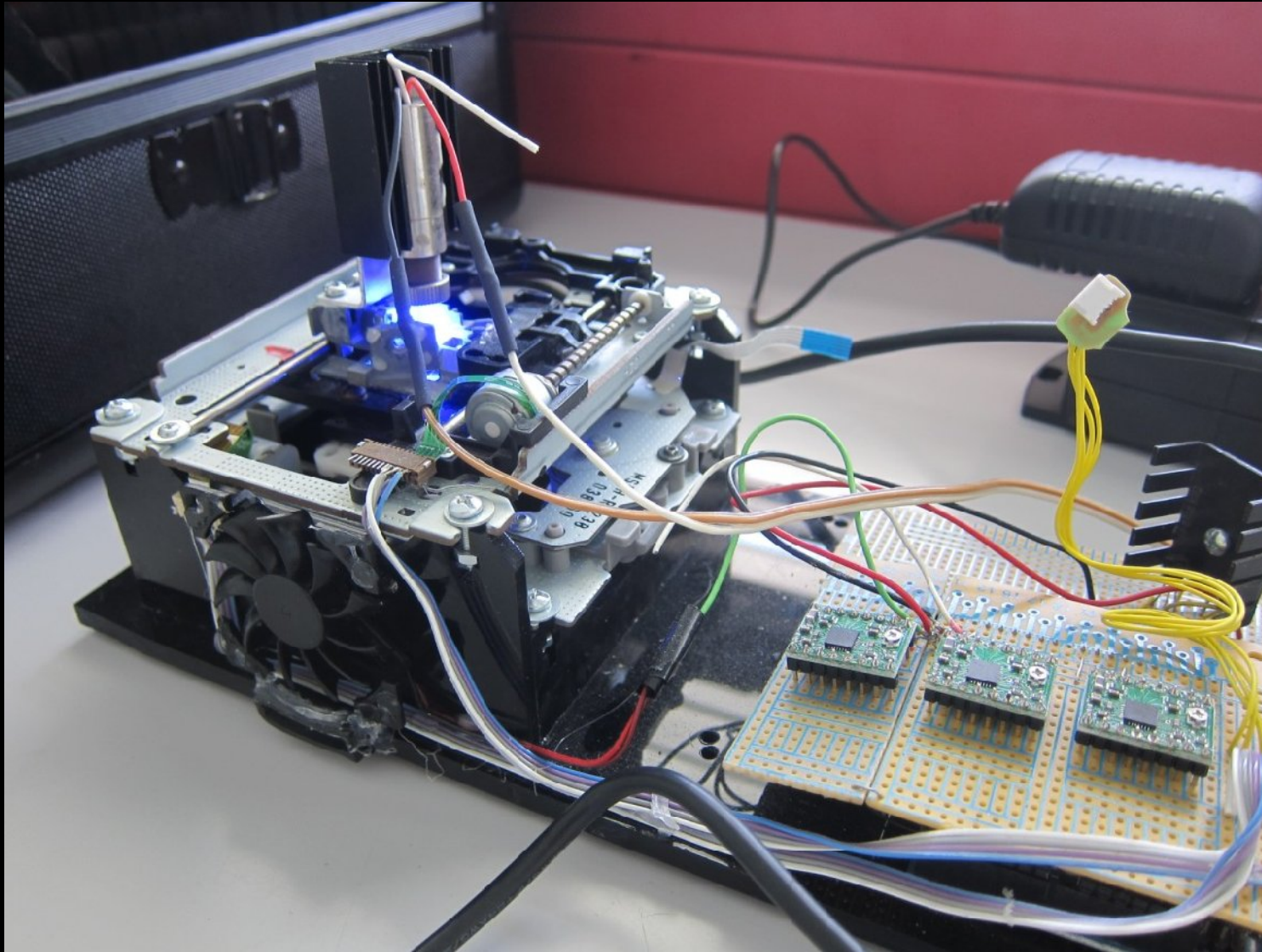
DIY Gel Electrophoresis Box



Separation of DNA fragments in electric field by size/charge, or food coloring :-)

dusjagr

wetPONG – DIY Lasercutter for μ Fluidics



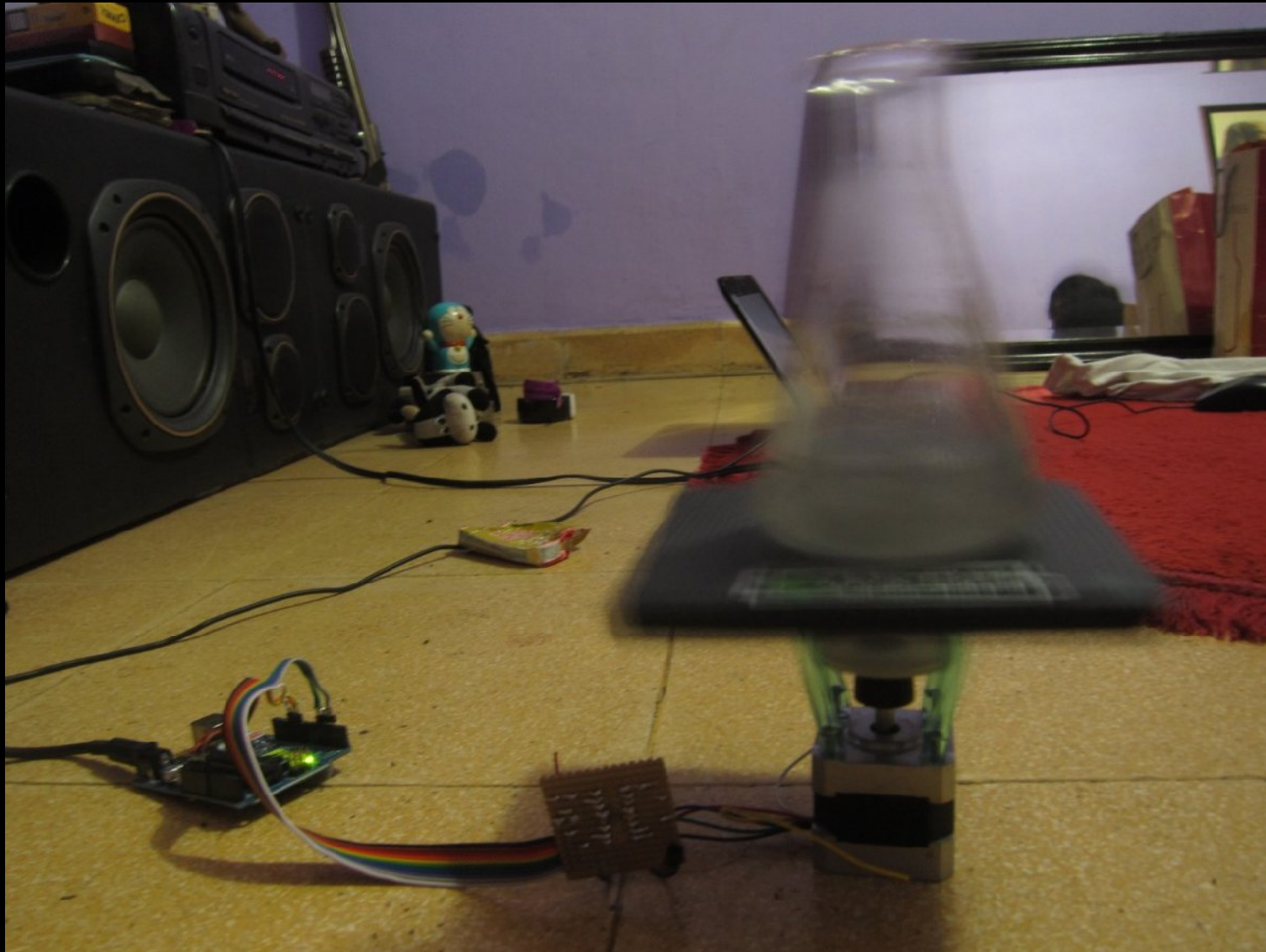
Collaboration with Urs Gaudenz, GaudiLabs and FHNW, HLS

DIY Fermentation – Wine Making



Collaboration with House of Natural Fiber and UGM, Yogyakarta
Winner of Transmediale Award 2011, IB:SC

Orbital Shaker



Shake it baby...

dusjagr, made for IB:SC in Yogyakarta, lifepatch.org

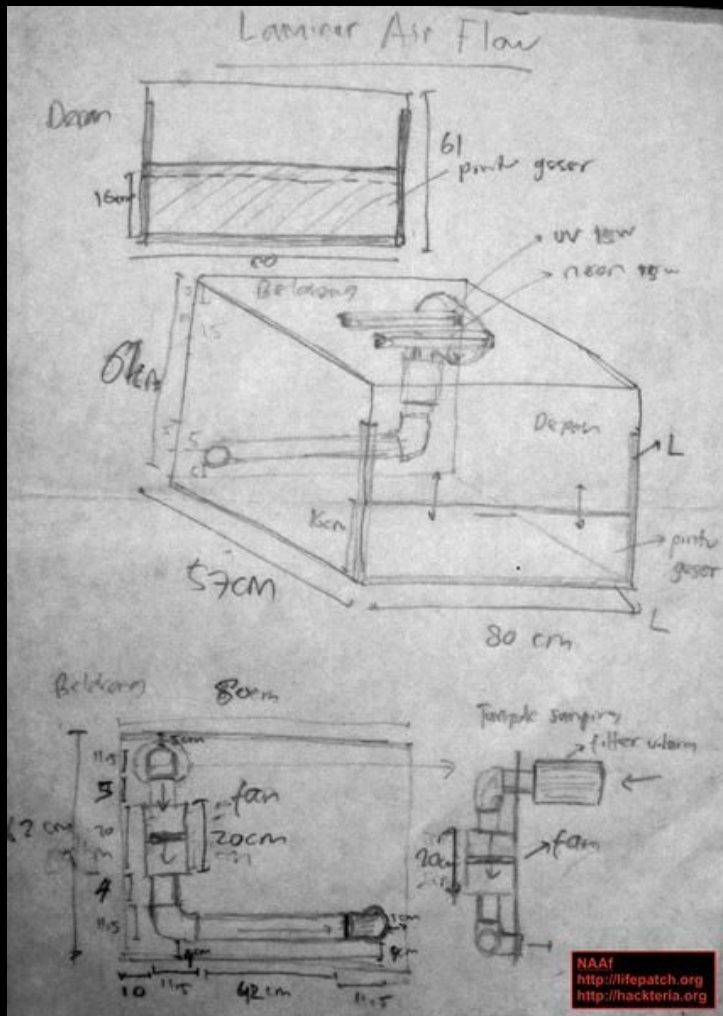
Distributed Daphnia Domestication Program



What iiiis iiit?

dusjagr, Briand Degger, Ivan Bestiari, lifepatch.org

DIY Laminar Air Flow – Sterile Hood



http://lifepatch.org/DIY_Laminar_Air_Flow

Nur Akbar Arofathullah, lifepatch.org

BioTehna / hackteria & Kapelica



MaSm Metatransformation, 2011. Produced by Kapelica Gallery
Maja Smrekar, Špela Petrič

Education at the Art/Sci Interface



Ear on Arm, ongoing project
Stelarc

BioCyberKidzz | Yeast Powered Balloons



Hackteria BioLab // Create Your World | Ars Electronica Festival 2011, Linz
Špela Petrič, Maja Smrekar, Marc Dusseiller, Yashas Shetty

BioTehna / hackteria & Kapelica

POTATO STARCH MEDIUM:

Slice potatoes and boil them in 1 L of water for 1 h; drain the liquid through a sieve and gauze to get rid of the potatoes; add 10g of sugar and 13g of agar; stir; pour liquid in glass container, add enough water to the pressure cooker to cover the bottom (0,5 cm); heat under pressure for 20 min; let steam out; pour medium into plates (0,25 cm); let set for at least 4 hours.

MAKING THE JEWELRY:

For the living bacterial jewelry press a finger gently onto the plate, seal Petri dish with hot-glue gun and add string, a ring or a broche needle. Colonies will appear in a day or two, at first bacterial cultures, as the culture ages filamentous fungi will overgrow.

see more on: <http://hackteria.org/wiki/>



BioCyberKidzz | Living Jewelry
supported by the Swiss Contribution

BioCyberKidzz | Body Enhancements



Hackteria BioLab // Create Your World | Ars Electronica Festival 2011, Linz
Špela Petrič, Maja Smrekar, Marc Dusseiller, Yashas Shetty

BioCyberKidzz | DIY Microscopy



Hackteria BioLab // Create Your World | Ars Electronica Festival 2011, Linz
Špela Petrič, Maja Smrekar, Marc Dusseiller, Yashas Shetty

BioLED hacking



Make your own bioVisuals, hack an LED, add plankton, enjoy...
Marc Dusseiller (CH), Uwe Schüler (DE)

DIY implants? Tooth hacking?



Claude Treptow, poolloop Festival 2011, Zurich

