



Get A-life!

15



## PIKSEL FESTIVAL

### Curators

Gisle Frøysland  
Maite Cajaraville

### Director

Gisle Frøysland

### Producer

Espen Johansen

### Kids Lab coordinator

Tiril Frøysland

### Design

Jenny Pickett, APO33

### Information

Erin sexton

### Tech crew

Jonas Skarmark



NORSK KULTURRÅD  
Arts Council Norway



eeagrants



BIKS | BERGEN  
INTERNASJONALE  
KULTURSENTER



pnok



HORDALAND  
FYLKESKOMMUNE



BERGEN KOMMUNE

# Get A-life!

**from 19th to 22nd of November**

## **WELCOME TO PIKSEL FESTIVAL 13th Edition!**

Piksel is an annual festival for artists and developers working with free/open source software, hardware and art in Bergen.

The 13th edition of the Piksel Festival Get A-Life! is devoted to show a series of artistic works, performances, workshops and presentations dealing with DIY A-Life (artificial life), DIY electronic and audiovisual artworks and concerts.

## **PIKSELKIDZ**

CITY-SUNS, CITY-WATER, CITY-GO, Piksel Kids Lab wants to bring new media art practices to kids and youngsters. CITY-SUNS, CITY-WATER, CITY-GO, three workshops to enjoy the city. Renewable energy, natural environment and society through mobile apps, solar energy creatures, maps, augmented realities, water sensors, ... SUN! WATER! GO!

## **DIY A-Life Seminar**

Experts speakers, researches and artists will discuss about Open biotechnology, DIY bioart, DIY synthetic molecular biology, Artificial Life (A-life) speculative projects done by artists and bioethics applied to the practice of bioart.

# 19 NOV 20 NOV

10:00 - 13:00

**DIY A-LIFE SEMINAR:**  
PRESENTATIONS - ØSTRE / FONGAARD

10:00 - 13:00

**DIY A-LIFE SEMINAR:**  
ØSTRE / FONGAARD

11:00 - 17:00

**BERGEN INVOCATION: A SONIC  
REWORKING :**  
WORKSHOP - ØSTRE / LOBBY

11:00 - 16:00

**PIKSLO\_DEEP\_DIVING:**  
WORKSHOPS - BIKS

14:00 - 17:00

**PIKSLO\_DEEP\_DIVING - BIKS :**  
WORKSHOP - ØSTRE / FONGAARD  
**LIVE PROJECTION MAPPING :**  
WORKSHOP - ØSTRE / FONGAARD  
**R LANGUAGE :**  
WORKSHOP - S12 GALLERI  
**DIY BIOLAB**  
WORKSHOP - S12 GALLERI

11:00 - 17:00

**BERGEN INVOCATION: A SONIC REWORKING:**  
WORKSHOPS - ØSTRE / LOBBY

14:00 - 17:00

**BODYNOISE & PERFORMANCE**  
WORKSHOP - ØSTRE / FONGAARD  
**EMBEDDED ART SYSTEM**  
WORKSHOP - ØSTRE BAR  
**COCÍCLO**  
WORKSHOP - UNGDOMSHUSET 1880 KAFÉ  
**DIY BIOLAB**  
WORKSHOP - S12 GALLERI

18:00 - 21:00

**PIKSEL KIDZ: CITY GO!**  
**PIKSEL KIDZ: CITY WATER!**  
WORKSHOP - S12 GALLERI

18:00 - 21:00

**PIKSEL KIDZ: CITY GO!**  
WORKSHOP - S12 GALLERI

18:00 - 20:00

**EXHIBITION OPENINGS**  
ØSTRE, S12 GALLERY & BART

21:00 - MIDNIGHT  
**FESTIVAL OPENING**

**FIELDS:**  
PERFORMANCE - ØSTRE / FONGAARD  
**BIO-VORTEX:**  
PERFORMANCE - ØSTRE / FONGAARD  
**BLOOD MUSIC:**  
PERFORMANCE - ØSTRE / FONGAARD

21:00 - MIDNIGHT

**LOGFORDATA CONNECTION**  
PERFORMANCE - ØSTRE / FONGAARD  
**HIGH BITCH**  
PERFORMANCE - ØSTRE / FONGAARD  
**TANTO**  
PERFORMANCE - ØSTRE / FONGAARD  
**CIPHERSONGS: TRUSTLESS**  
PERFORMANCE - ØSTRE / FONGAARD

## A-LIFE EXHIBITIONs

19-22 NOV 11:00-17:00 : S12 Galleri  
19-22 NOV 11:00-17:00 : Lydgalleriet  
19-22 NOV 11:00-17:00 : Østre Bar  
19-22 NOV 11:00-17:00 : BART

**21 NOV** **22 NOV**

**11:00 - 16:00**

**PIKSLO\_DEEP\_DIVING:**

WORKSHOPS - BIKS

**BERGEN INVOCATION: A SONIC REWORKING:**

WORKSHOPS - ØSTRE / LOBBY

**11:00 - 13:00**

**FARM ANIMALS AUGMENTED BOOK**

PRESENTATION - ØSTRE / FONGAARD

**"GOLD LINES ARE MINERAL VEINS"**

PRESENTATION - ØSTRE / FONGAARD

**MUZHACK**

PRESENTATION - ØSTRE / FONGAARD

**11:00 - 17:00**

**FIELDS**

WORKSHOP - ØSTRE / FONGAARD

**11:00 - 17:00**

**PIKSEL KIDZ: CITY GO!**

WORKSHOP - ØSTRE/ORAM

**12:00 - 16:00**

**PIKSEL KIDZ: CITY WATER!**

WORKSHOP - UNGDOMSHUSET 1880

**PIKSEL KIDZ: CITY GO!**

WORKSHOP - UNGDOMSHUSET 1880

**12:00 - 16:00**

**PIKSEL KIDZ: CITY- SUNS!:**

WORKSHOP - UNGDOMSHUSET 1880

**14:00 - 17:00**

**BIO-VORTEX**

WORKSHOP - ØSTRE / BAR

**16:00 - 18:00**

**PIKSLO\_DEEP\_DIVING: LISTENING LECTURE  
OF MARIN SOUNDS.**

WORKSHOP - ØSTRE / LOBBY

**15:00 - 16:00**

**SUBLUNARY ECHO**

PERFORMANCE - BART

**21:00 - MIDNIGHT**

**ARTIFICIAL STUPIDITY**

PERFORMANCE - ØSTRE / FONGAARD

**WM\_EX10 WM\_A28 TCM\_200DV BK26**

PERFORMANCE - ØSTRE / FONGAARD

**ENTROPIE**

PERFORMANCE - ØSTRE / FONGAARD

**21:00 - MIDNIGHT**

**THE NOISER/FETVEIT/H220**

PERFORMANCE - ØSTRE / FONGAARD

**THE PIRATE CINEMA**

PERFORMANCE - ØSTRE / FONGAARD

**THREE MIXERS**

PERFORMANCE - ØSTRE / FONGAARD

**ΔV**

PERFORMANCE - ØSTRE / FONGAARD

**SEXUS 3 [PART I: ZHORA]**

PERFORMANCE - ØSTRE / FONGAARD

**00:00-03:00**

**DJ PARTY**

**PIKSLO\_DEEP\_DIVING 17-22 NOV 11:00-16:00 : BIKS**

**PIKSELSAVERS 17-22 NOV 11:00-16:00 : Ungdomshuset 1880 KAFÉ**





# Erin Sexton

## 19-22 NOV - S12 Galleri

For sound, epsom salt/copper crystals, glass, and custom electronics (2015).

This crystal-sound sculpture arose from an experiment with dry ice.

Carbon dioxide was recorded bubbling through a super saturated solution. Crystals grew. The recording and resulting crystals are brought into contact once again. Conversations emerge. Events resonate across phase boundaries, particles interact beyond space-time.

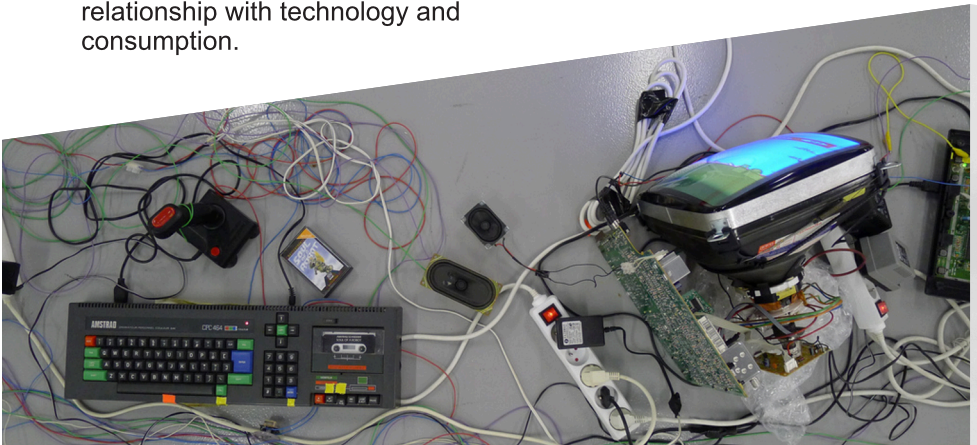


**THE CHEMICALS TALK**

# Benjamin Gaulon, Gijs Gieskes, Karl Klomp, Tom Verbruggen

*"This goal will be achieved if everyday practices, "ways of operating" or doing things, no longer appear as merely obscure background of social activity, and if a body of theoretical questions, methods, categories, and perspectives, by penetrating this obscurity, make it possible to articulate them." (Michel de Certeau)*

"ReFunct Media" is a series of multimedia installations that (re)uses numerous "obsolete" electronic devices (digital and analogue media players and receivers). These devices are hacked, misused and combined into a large and complex chain of elements. To use an ecological analogy they "interact" in different symbiotic relationships such as mutualism, parasitism and commensalism. Voluntarily complex and unstable, "ReFunct Media" isn't proposing answers to the questions raised by e-waste, planned obsolescence and sustainable design strategies. Rather, as an installation it experiments and explores unchallenged possibilities of 'obsolete' electronic and digital media technologies, and our relationship with technology and consumption.

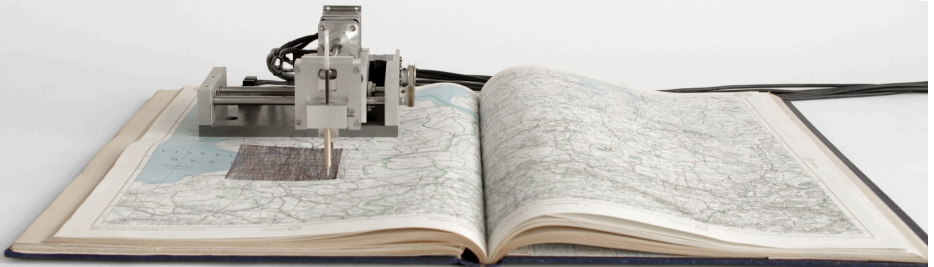


## REFUNCT MEDIA

19-22 NOV  
BART

# Quadrature

Satellites are used for almost all modern achievements yet we hardly notice their existence. All data about the positions and paths of satellites is known, as it is crucial for determining free spots for new satellites. Accessing this information allows the drawing machine SATELLITEN to keep record of the sheer amount of satellite flyovers in regard to its own location. In a square of approximately 10cm<sup>2</sup>, the machine traces their lines in real time until the far away object leaves our horizon again. Old maps of the area are the base for its drawings. Now the paths of the satellites form on top of the familiar neighborhoods, thus setting the normally invisible traffic in relation to our usual habitat. As time passes the lines of the satellites will obliterate the well-known streets and cities, overwriting the map information and the marks left by preceding satellites, the remains of this rather parasitic machine. QUADRATURE (Berlin) is Jan Bernstein, Juliane Götz and Sebastian Neitsch.



19-22 NOV  
ØSTRE

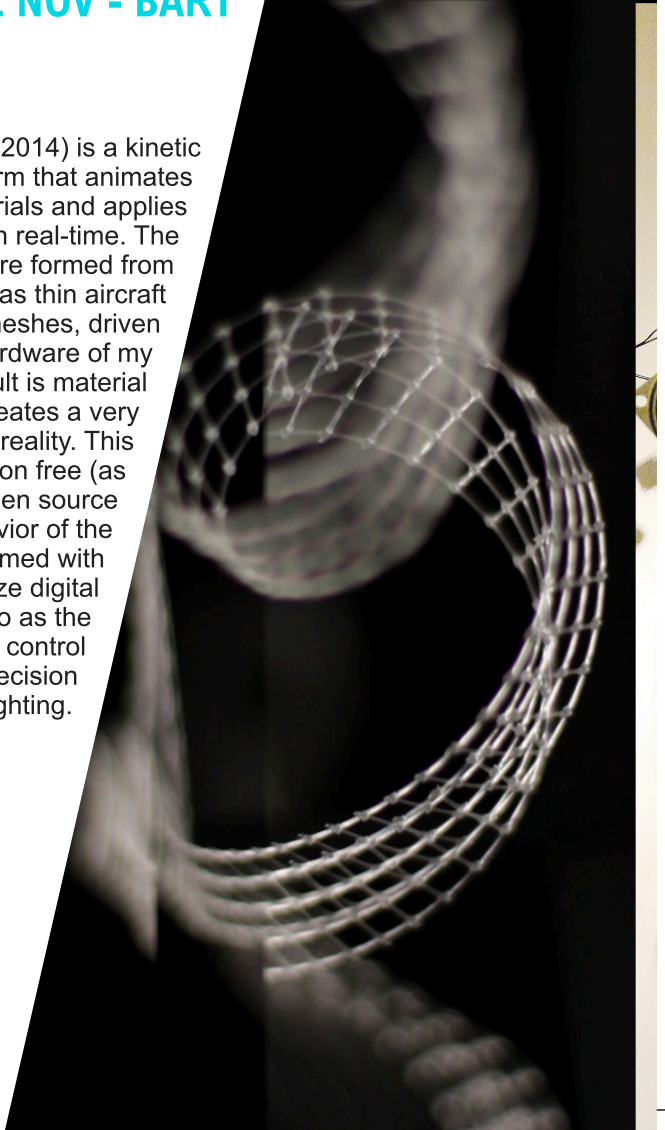
**SATELLITEN**



# Maxime Damecour TemporAIR

19-22 NOV - BART

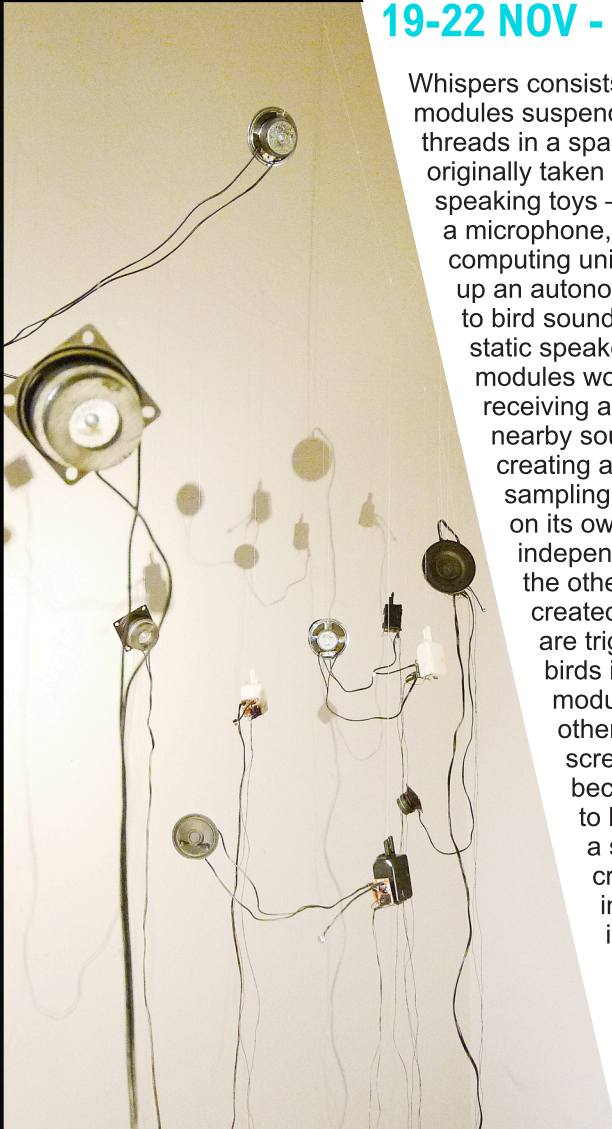
TemporAIR (2014) is a kinetic sculpture platform that animates various elastic materials and applies film-like effects in real-time. The sculptures are formed from materials such as thin aircraft cables or plastic meshes, driven by software and hardware of my own design. The result is material in motion that creates a very sharp blurring of reality. This piece runs entirely on free (as in freedom) and open source software. The behavior of the sculpture is programmed with PureData. I utilize digital audio as the electromechanical control system and precision lighting.



# Whispers

Katrin Caspar,  
Eeva-Liisa Puhakka

19-22 NOV - S12 GALLERI



Whispers consists of a dozen small modules suspended on thin transparent threads in a space. Each module – originally taken from children's speaking toys – has a speaker, a microphone, a motor and a small computing unit. Together they build up an autonomous system listening to bird sounds transmitted by one static speaker in the room. The modules work as performers, receiving and playing back all nearby sounds they can pick up, creating a situation of live sampling. Every module works on its own, autonomous and independently while mimicking the other ones. Movement is created by built in motors that are triggered by sound. Like birds in the forest the modules try to impress each other getting louder, screaming more, or becoming quiet. It is hard to locate a single sound or a single module, they create a network of information. The system itself is open and can be modified by the sound of the visitors, creating a participatory space.



# APO-33

## 19-22 NOV - see website

The installation © NSA proposes a new listening interface for the information age and components of mass culture transmissions. Across which dozens of radio transmissions literally redrawn, re-arranged and randomly broadcast in space, the installation plays with the clichés from pop to information overloads that is prevalent in our society today. This ensemble of cut-ups in flux will be transmitted across the public space in Linz creating a disorientation of sonic objects, whilst simultaneously being broadcast online where listeners can listen and comment on the result of the transformation of the audio datas. The © NSA also allows viewers to participate in the system with their mobile phones. The audience can select the different radio broadcasts processed by the © NSA. They will also be able to manipulate certain parameters of the installation.

```
4007 0a05 33a2 7e00 5311 8021
7rc1 6af7 4d5c b8ca f414 8427
5b 870e 29f 26c9 a613 82f8 b87c
59 4bfd cf67e 54f0 8cfe b744 5
2c 97d0 4d28 6ca1 267 1a09 edde 8
ad cfc1 8041 2343 6 240d 7961 34
ca f414 8427 9661 4 40d4 405 0a
13 82f8 b87c 8f00 0 #331 36d6 dbb
f0 8cfe b744 6c0f8 809d 3780 97D
67 1a09 edde 8ff40 1A8b 2be3 d14d
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known SSAP 0xb0 > cc:d2:9b:c0:b7:0f (oui Unknown) Unk
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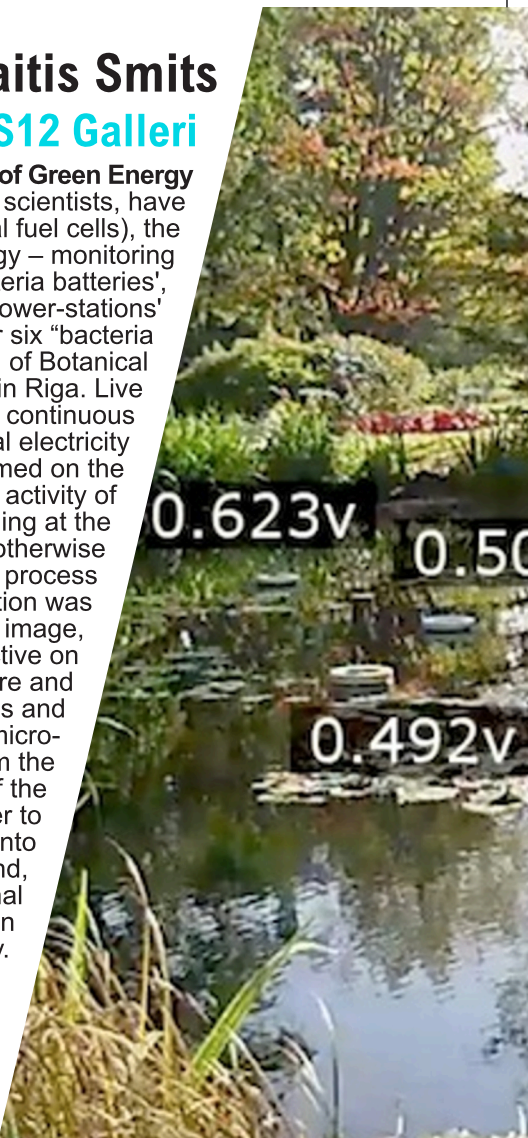
# Rasa Smite, Raitis Smits

19-22 NOV - S12 Galleri

## POND BATTERY: A Poetics of Green Energy

RIXC artists, together with scientists, have experimented with MFC (microbial fuel cells), the next generation biotechnology – monitoring bacterial activity, building 'bacteria batteries', and installing bio-energy 'power-stations' outdoors in ponds. Last summer six "bacteria cells" were installed in the pond of Botanical Garden of University of Latvia in Riga. Live web-cam images and continuous measurement of bacterial electricity fluctuations were live streamed on the internet, revealing the invisible activity of nature such as what is happening at the bottom of a pond, things which otherwise we can neither see nor hear. The process of Bacteria fuel generation was interpreted into live sound and image, providing an aesthetic perspective on the interaction between nature and technology, ecological systems and electronic networks, human and micro-worlds. Collected data from the seven-month-long observation of the Pond Battery – from summer to winter, are now transformed into data visualization, video and sound, creating sensual and emotional experiences – a poetics of green energy.

Authors: Rasa Smite and Raitis Smits – RIXC artist collective, artistic concept, visualization graphics, sound track | Credits: Voldemars Johansons – sonification; Martins Ratniks – video editing (time-laps); Kristine Briede – video documentation; Arturs Gruduls – biologist, scientific solutions; Solid State Physics Institute of Latvian University – partner, scientific support; ArtResearch Lab of Liepaja University – partner, technical support. Produced by RIXC



## POND BATTERY



# Robertina Šebjanič

This installation addresses the possibilities of animal and machine coexistence. In the era of the Sixth Extinction of species, after pulsating through the world's seas and oceans for over 500 million years, jellyfish are the perfect evolutionary archive. The eternity of the jellyfish – some even immortal – has been fueling even the most ancient human thoughts on the fountain of youth and immortality. The historical tactics of civilizations trying to ensure their cultural immortality are today contrasted by the biotechnological possibilities of actually designing and controlling life, demanding a new, critical redefinition of social values. In the installation, jellyfish are the "energy" organisms; they are running the mechatronics, video, and sound. Their movements are being captured and transformed in real time by custom code into navigation information for all the servomotors of the mechatron.

credits: Slavko Glamočanin, Miha Presker, Kristijan Tkalec, Dr. Alenka Malej, Gallery Kapelica, Zavod Praksa, Cubic Aquarium Systems, Ministry of Culture Slovenia, Municipality of Ljubljana, photo: Miha Fras



**AURELIA 1+HZ / PROTO  
VIVA GENERATOR**

**19-22 NOV  
S12 GALLERI**

# Wolfgang Spahn, Malte Steiner

This installation is an immersive sonic-kinetic light environment that demonstrates the technical simplicity of the current methods of electronic surveillance. The cozy comfort of security turns into something threatening when the sound and cameras react to the visitors entering the space; it is not only monitoring the passers-by, but it also has a self-monitoring system, creating an extra layer of complexity. Aesthetically the installation augments reality by merging raw data, virtual worlds, and real time filmed material. This fusion also happens in the acoustic space, where the soundscape is combining digital synthetic sound with electro-mechanic noises. Responsive 3D Platonic solids are overlaid and animated in perpetual motion. An additional layer of surveillance is added by displaying current network traffic, which is shown under the graphical output of each camera's projection. When the system is connected to the network of the exhibition space, all network activities are visible and projected on the screen, as well as the internal communications between the devices.



19-22 NOV  
ØSTRE BAR

MONITORED ARTWORK

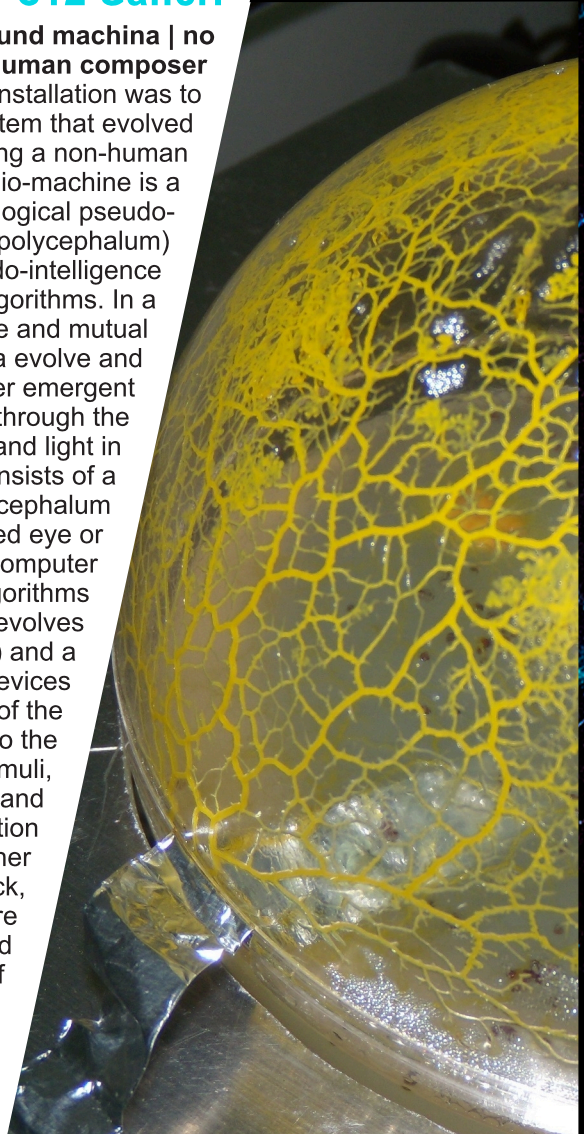
**Oscar Martin**

**19-22 NOV - S12 Galleri**

**BSM\_NHC - bionic sound machina | no  
human composer**

The starting point of the installation was to create an artificial ecosystem that evolved symbiotically, generating a non-human sound composer. This bio-machine is a chimeric device with a biological pseudo-intelligence (*Physarum polycephalum*) and an artificial pseudo-intelligence based on genetic algorithms. In a situation of exchange and mutual influence the bio/machina evolve and allow us to discover emergent behavior perceptible through the organization of sound and light in time. The device consists of a colony of *Physarum polycephalum* (visible to the naked eye or through a TV monitor), a computer where the genetic algorithms (software) and the sound evolves (through speakers) and a number of electronic devices that read the responses of the colony of *Physarum* to the sound and light stimuli, generating interaction and exchange of information between them. In the other direction of the feedback, the colony of *Physarum* are in charge to select and evaluate the evolution of the software's genetic algorithms.

**BSM\_NHC**





## Sabina Ahn

19-22 NOV - [see website](#)

Sublunary Echo is an interactive installation/performance that uses bioluminescent phytoplankton (*P. fusiformis*) as a material. This piece makes a feedback loop between natural elements, humans and machines, alluding to the symbiotic relationship and cycle with a different type of energy. Spectators are invited to a space that can interact with living light particles and explore the sound of microorganism. The material used is microbial bioluminescent plankton that produces light only in their night cycle when they are agitated. The shining living water will visualize sound in the air; voice and light particles are sonified. With software and hardware, we can see a narrative of the very primitive natural elements. Water is the origin of all life and contains the inspiration for this work, which is aiming to communicate with organic creatures and to see how they can interact with us through technology.

# SUBLUNARY ECHO





# Harald Fetveit

19-22 NOV - see [website](#)

Dans for voksne organized a gig with Sunn o)))). This was long before they were well known, at least in Norway. They had ordered 126dB SPL on stage. The sound could be sensed with the whole body. Some time later, a guy wrote and asked if there'd be any more such gigs. He wanted to bring his deaf sister so she could feel the sound. We talked a bit, and figured out that if music should be made for deaf people, the best would be if deaf people made it. Why should hearing people make it when they would have no idea about how it can be perceived? This was the start of Lab for Physical Music. The aim of the project is still to collaborate with deaf people to develop physical and artistic tools to shape sound for other deaf people.

photo: Remi Horgar, Annbjørg Nordbø, Christine Sun Kim at Ultima.

**LAB FOR PHYSICAL MUSIC**

# Marek Sitko

## 19-22 NOV - ØSTRE ORAM

Every living creature has a personal space, crossing of which causes discomfort, anxiety and an impulse to move away, defend oneself or escape.

Personal space is characteristic for humans and animals, but the study of plants revealed that they also exhibit the possession of such a space. The research shows that plants feel violations of their comfort zone and react to it in a negative way. Is it possible that machines also have a personal zone? The next industrial revolution will use machines equipped with artificial intelligence (AI) and we will have to learn to coexist with it.

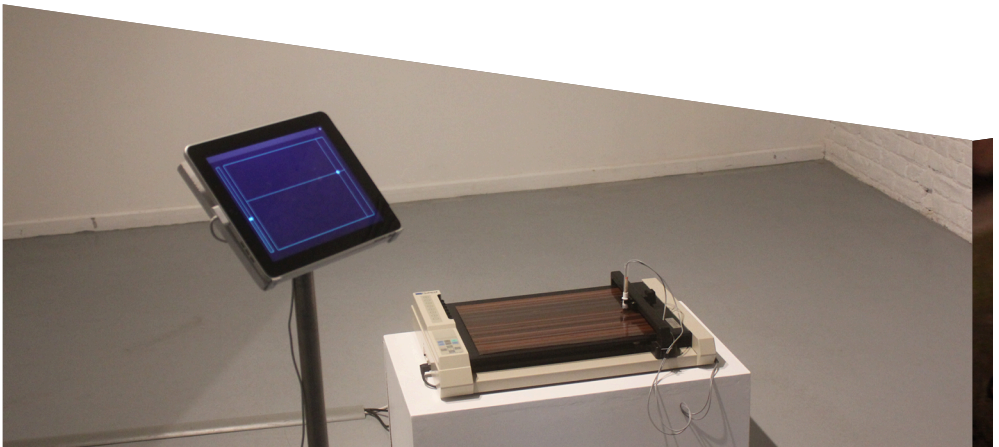
What will it be like? The presented artwork is an interactive sculpture-machine with a certain level of intelligence. It can control space surrounding it. While not disturbed, it lives its own life. It is anxious when it senses human presence nearby. If an intruder comes too close to it, its personal space is violated - and the sculpture leans to avoid contact.



## PERSONAL ZONE

# Signal to Noise

This prototype electro-mechanical sound device is based on the Roland DXY pen plotter (a printing technology of the 1980s), combined with audio cassette tape technology to playback pre-recorded 'found' sounds from a magnetically encoded audio tape surface. The resulting installation is a multi-temporal assemblage of these marginalized technologies, a hybrid sonic drawing device able to recall and explore archival media. Within these recordings, existing narratives are disrupted and fragmented, straying from chronological order into non-linearity. This draws analogies to both the device's merged hardware assembly and to the 'media archaeological' interweaving of media timescales and histories. The REMAP project engages with obsolete media artifacts and technologies, with an intention to use such past media devices to help critique the impact of current globalized digital and technological consumerist culture. It seeks to explore the notion of 'Zombie Media... the living dead of media culture' (Parikka/Hertz), an accumulated mass of discarded waste electronics and a continued physical existence beyond obsolescence.

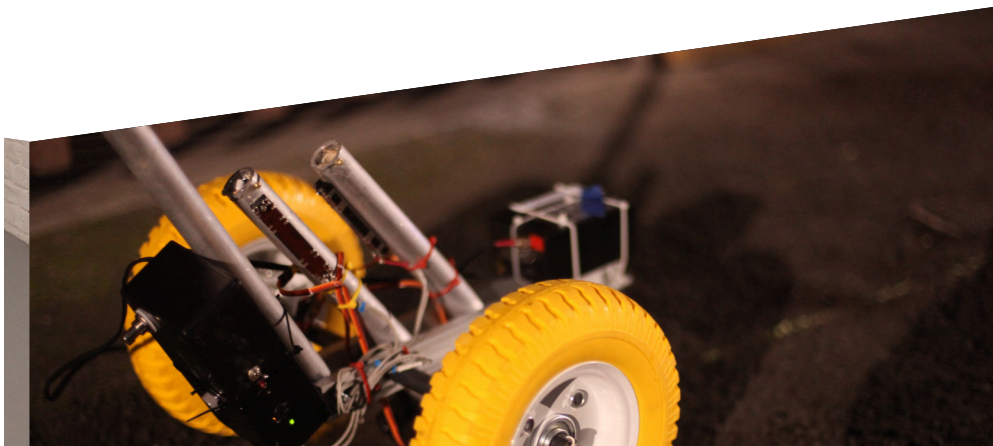


**19-22 NOV**  
**ØSTRE ORAM**

**REMAP**

# Alexandre Castonguay

Cociclo proposes a participatory experience in the streets of the Bergen, enabling a reflection on the collection and visualization of data. An electronic circuit responds to the concentration of pollutants in the air; it emits audible beeps that augment in frequency following the increase in carbon monoxide (CO) concentration. The participants build a visualization of geolocalized-data collectively through 'audio augmented dérives'. The 'Cociclo marker' is a chalk-marking tool that inscribes the CO variations directly on the city streets. Presented as an artifact in the gallery, it links interior space to the outside through this continuous line. The traditional visualization tools are not adequate for citizen involvement: we often witness data heat maps of pollutants within our cities, but they feel distant and not related to our actual experiences. When situated at street level and witnessing the rapid evolution of pollutants because of our proximity to their sources, the data becomes more accurate; the experience is embodied and not abstracted.



**cocíclo**

**19-22 NOV  
S12 GALLERI**



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# FIELDS

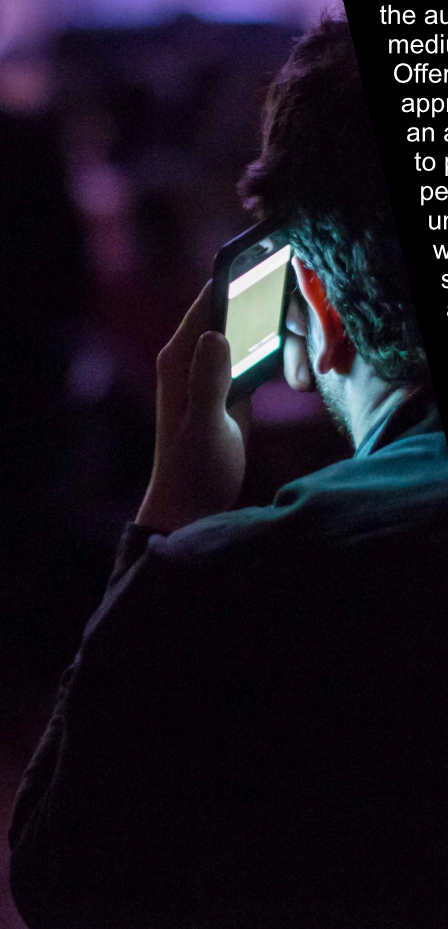
**Tim Shaw,  
Sébastien Piquemal**

**19 NOV 21:00 - ØSTRE-Fongaard**

In this performance we present Fields, a networked system exploring new areas of musical performance and spatialized sound through the use of the audience's mobile devices as a medium for sound diffusion.

Offering both a new technological approach to sound diffusion and an alternative way for audiences to participate in performances, Fields opens up unique forms of engagement within live musical events. The system is available over Wi-Fi and participants can easily join through a web browser. Once a device is connected, sound are played from it, creating the possibility for each member of the audience to hold their own personal speaker. The result, provided a number of participants are connected, is an omnidirectional, multi-located soundscape that the performers can control live and improvise with.

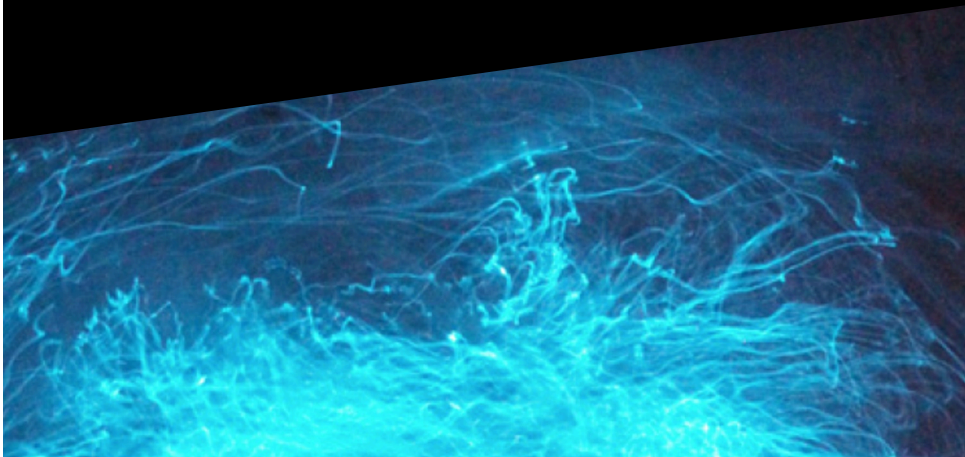
Photo credit : Chris Scott



# Ben Freeth

## Bio-Vortex (Bio-Illuminating The Vortex)

"Some things, though they are not in their nature fire, nor any species of fire, yet seem to produce light" (Aristotle) This project envisions a hybrid musical instrument, part living part electromechanical; it works with the natural metabolism of bioluminescent algae as a technical system interfaced with open source / DIY lab equipment and light detecting and sound generating electronics. The idea is to develop a truly sustainable musical instrument, one where all of the energy needed to power the instrument is provided by the sun. For the algae this is through photosynthesis, for the electronics through solar cells. Solar charged batteries are used to power an instrument based around simple magnetic lab stirrers (2 magnets that spin + a stirring bar within a fluid). These create a vortex within several flasks containing a liquid medium of algae (*Pyrocystis Lanula*), which generate intense momentary bioluminescence. This light is converted to sound through a set of custom electronics.



# BIO-VORTEX

19 NOV 21:00  
ØSTRE-Fongaard

# Roosna & Flak

Blood Music is inspired by Albert Camus' reading of the Sisyphus myth, where, in a surprising gesture, he declares Sisyphus to be a free man, not, as most others would think, slave to a meaningless task. Sisyphus, as the archetype of an absurd man, is aware of the futility of his actions, but will keep going on anyway, never giving in to the comforts of absolute truth of any kind. He knows that absolute truth is impossible, and so sets forth to create his own truths, taking the freedom he needs to do so from the emptiness. Using dance and interactive technology, Roosna & Flak fill the stage with interdependent sound and movement. In the process they are dealing with the question: How to amplify and expand the body's movements through sound, so that the body literally becomes an instrument, turning the dancer into the musician of her own soundtrack?

support: The Norwegian Arts Council, STÜ, Tallinn.

Photo credit : Kaur Ives



19 NOV 21:00  
ØSTRE-Fongaard

**BLOOD MUSIC**





# Jean-Francois Blanquet

20 NOV 21:00 - ØSTRE-Fongaard

With prepared audio tapes of encoded texts and a setup of tape players, Jean-François Blanquet mixes and composes a sound piece with different sonorities of code that still contain meaning. The texts produced are about a second civilization that took place next to ours in the digital universe. While the music code is built and evolves, the audio stream is received and computers are used to decode its textual substance. From the machines, texts emerge in the video stream and are re-arranged with mixers to create an interpretation of the moment. The public is immersed in a song of digital code while the video expresses the meaning contained in the stream. This sound composition is decoded and then re-arranged live, creating an experience of continuity in the cut-up processes. The result is projected with a beamer and then directly recorded by a VCR on a single VHS tape.

LOGFORDATA\_CONNECTION

# HIGH BITCH

20 NOV 21:00 - ØSTRE-Fongaard

A spatial sculptural sound scenario  
more or less. SCREAMING IT is  
a collaboration between Dr. Nexus  
(DE) and Greta Christensen (DK).



Photo credit : aleks slota / licia londini

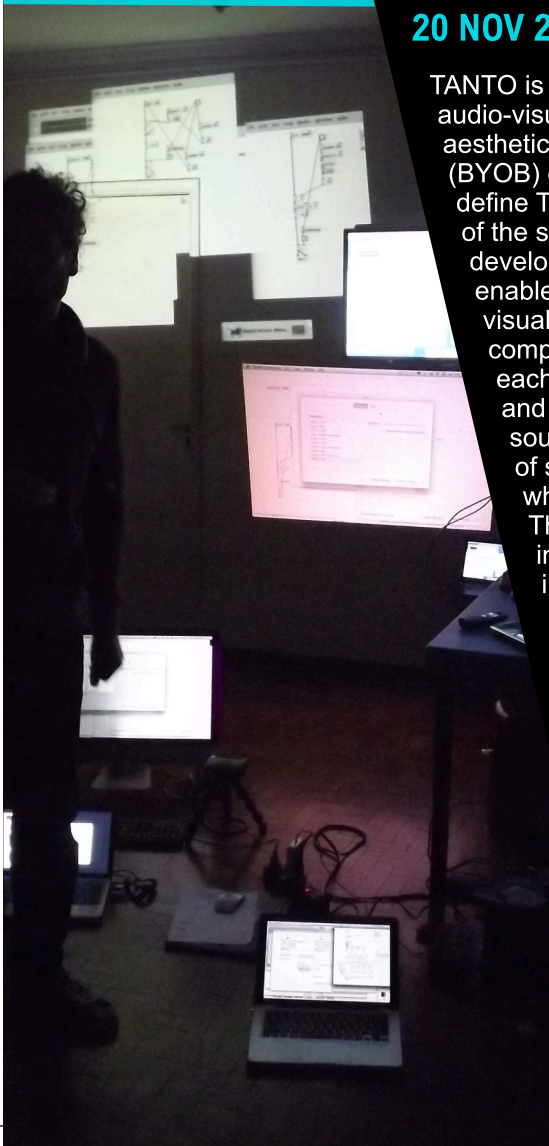
## SCREAMING IT

# TANTO

## André Damião

20 NOV 21:00 - ØSTRE-Fongaard

TANTO is a networked live coding audio-visual piece inspired by the aesthetics of Bring your Own Beamer (BYOB) events. The elements which define TANTO are the characteristics of the software building blocks developed for the performance that enable performers to exchange visual code during the composition: a lot of computers, each computer needing a sound and visual output of some source, and a composition made of screens and projections where the code can be seen. The network becomes an instrument in which delays influence rhythms and feedback. The compositional procedure draws attention to timbre sets by the use of spaciousness in and around speakers, and frames that alternate in dense arrangement: groupings, pairings, grids and screen clusters. This precarious "Acousmonium" becomes a form to create dialogues between code, sound, and architecture.



# Rob Canning, Barbara Kukovec Antonios Galanopoulos

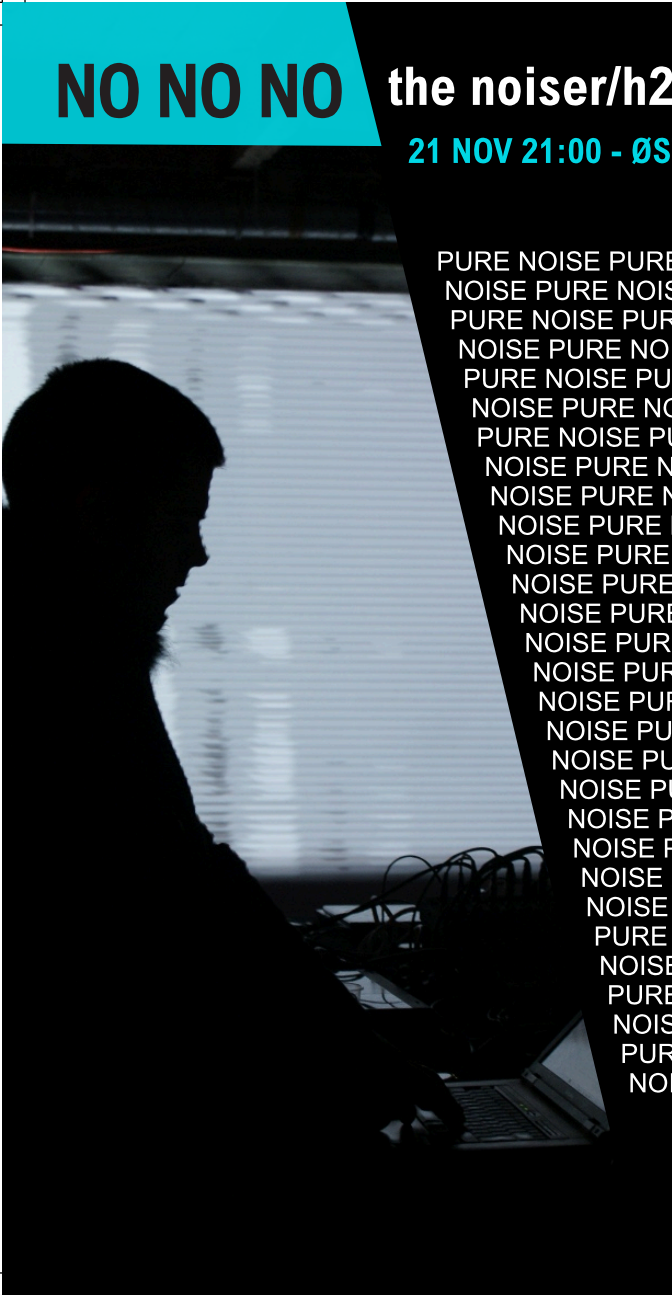
**20 NOV 21:00 - ØSTRE-Fongaard**

CipherSongs: Trustless is the second in a series of performance and installation works reflecting on issues surrounding encrypted network communication technologies. This data driven, audio-visual installation/performance responds to real-time data from the Bitmessage service, which is a decentralized, peer-to-peer, trustless communications protocol. The service became popular after the 2013 Snowden revelations exposing the widespread collection and analysis of communications metadata. These works respond to the threat to our "right to a private life" posed by the planned amendments in the UK to the Data Retention and Investigatory Powers Bill (aka The Snoopers Charter). This amendment seeks to criminalize the use of encrypted communications in the UK. In this context, CipherSongs functions as the 'canary in the coal mine', an early warning system where the disappearance of song indicates a dangerous problem within the system.

Rob Canning (Laptop),  
Antonios Galanopoulos  
(Laptop), Barbara  
Kukovec  
(Voice/Electronics).

**CIPHERSONGS:  
TRUSTLESS**





**NO NO NO**

# the noiser/h220/Fetveit

21 NOV 21:00 - ØSTRE-Fongaard

PURE NOISE PURE NOISE PURE  
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[illegible][illegible][illegible]



# Kasia Justka



21 NOV 21:00 - ØSTRE-Fongaard

## high voltage, pressure and sparks

The smell of electric potential  
difference.

Signal tensions oscillating between  
9000 or 3 volts as well as  
thousands of Hertz....

In order to see, to hear the  
physical aspects of electricity.

Spark ionization, electric  
discharge, pulses and voltage  
breakdown.

Oscillating tension with lights ,  
sounds and electrified  
atmosphere.

The heart of audio-visual  
synchronisation // SIGNAL,  
Flow of electricity.



# Nicolas Maigret

## THE PIRATE CINEMA - Live Performance (2012-2014)

The hidden activity and geography of real-time peer-to-peer file sharing via BitTorrent is revealed in The Pirate Cinema (2012 - 2014), a live performance by Nicolas Maigret and Brendan Howell. In their monitoring room, omnipresent telecommunications surveillance gains a global face. The artists plunder the core of the restless activity online, revealing how visual media is consumed and disseminated across the globe. Each act of this live work produces an arbitrary mash-up of the BitTorrent files being exchanged in real time according to specific media categories, including music, audio books, movies, porn, documentaries, video games and more. This fragmented and transitory content is browsed by the artist, transforming unknowing BitTorrent network users into contributors to an endless audio-visual composition.



**THE PIRATE CINEMA**

**21 NOV 21:00  
ØSTRE-Fongaard**

# Tijs Ham

Three Mixers is a live electronics performance which combines the expressive sonic landscapes of feedback mixers with digital processing in SuperCollider. The setup takes its inspiration from the classic DJ rig: two sources of sound on the sides and a mixer in the middle. Instead of using turntables, the sound sources are modified with mixers feeding back, combining no-input and circuit-bending techniques. The sounds come together in a digital mixer that works as both a controller and soundcard. SuperCollider code is being controlled through the newly developed Modality toolkit, which ties all of the sounds together. Three Mixers investigates the borders between chaotic behavior and digital control. The project was funded by the Stimuleringsfonds for e-culture (NL) and has been developed at STEIM and BEK.



21 NOV 21:00  
ØSTRE-Fongaard

**THREE MIXERS**

# Quimera Rosa

21 NOV 21:00 - ØSTRE-Fongaard

With a nod to 'The Piano Teacher' by Elfriede Jelinek, this performance revises the universe of Blade Runner in a post porn version: here, the replicants have left humanity for good... mixing scenes of cyberpunk surrealism with non-conventional sexual practices, SEXUS 3 transforms their bodies into sexo-sounding instruments through electronic prosthesis connected to the flesh with BDSM techniques. The sound of this piece is generated live by contact of the bodies. In this performance Quimera Rosa condenses seven years of electro-chemical experiments. Will you subject to its empathy test?

Photo credit : Alessia Bombassi

## Sexus 3 [Part I: Zhora]

# Servando Barreiro

22 NOV 21:00 - ØSTRE-Fongaard

In these times where terms like artificial intelligence or artificial life are settling into different technological fields such as automotive or robotized telephonic assistance, it is good to take a look back to these terms from a different perspective.

First we must realize that we still don't fully understand how a simple plant in our garden works. At the same time, our fancy electronic car can't beat us at chess, and our telephone voice assistant (luckily) can't drive our car. Fascinated by the concept of "Artificial Intelligence" but still unable to find the delicate line that differentiates between intelligence and stupidity in the computer world, I decided to make a mysterious and pseudo autonomous audio-visual performance in which "predictability" is not among the tags that could ever be applied.

This performance is entirely composed of real life data: audio recordings, live video, and my own movements on stage are transmitted via accelerometers, video tracking, and recycled wireless game controllers.



## ARTIFICIAL STUPIDITY



# Wolfgang Spahn

22 NOV 21:00 - ØSTRE-Fongaard

Both sound and projection are based on different analogue and digital machines developed by the artist.

Each system generates simultaneously structured noise as well as abstract light patterns. The invention of moving pictures originally went along with an artificial separation of sound and visuals that is still visible today in the different codec's used for image and sound. The performance ENTROPIE merges them again. It makes the data stream of a digital projector hearable and gives an audio-visual presentation of the electromagnetic fields of coils and motors. All hard and software was developed by the artist as an open system ([www.dernulleffekt.de](http://www.dernulleffekt.de)). The two cameras and the control system run on 2 Raspberry Pi. A Python program manages the camera output.



## ENTROPIE



# Stefan Tiefengraber

22 NOV 21:00 - ØSTRE-Fongaard

WM\_EX10 WM\_A28 TCM\_200DV BK26 is a noise performance where sound and video are generated through short circuits that the artist produces with his wet fingers on opened electronic devices. The skin's resistance and the conductance of the human body combine with the components of the circuits to modify the sound. The audio signal that is heard through the speakers is sent to CRT monitors and a video projector, which visualize the signal in flickering abstract shapes and lines in black and white. The devices used, such as 'Walkmans' and 'Bontempi' keyboards are still useful in their original function. The title of the performance is the type designation of the devices and changes with the electronic objects used.

**WM\_EX10 WM\_A28  
TCM\_200DV BK26**



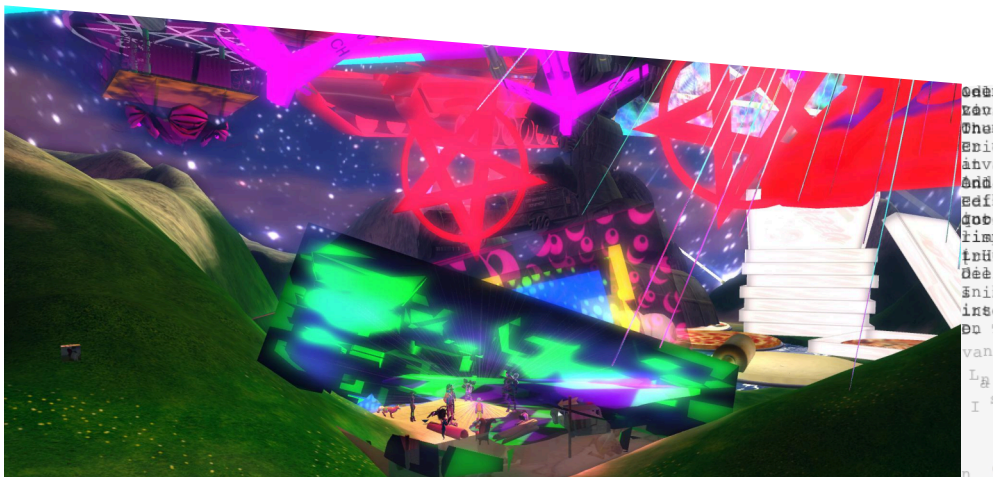
Photo credit : Kaun Ives



15

# Karen Eliot

"Imagine there's no countries, no possession, no need for greed or hunger. Imagine all the people sharing all the world." Inspired by John Lennon, we're testing this idea: Anarchotopia is a virtual island in Second Life, providing free space for anybody. Users are allowed to build whatever they like, in any style or size they wish. Since land in Second Life is very expensive, this seems to be a great gift. But be aware: The space is limited and everyone can delete any objects or eject other avatars. The emerging picture shows whether people would fight each other or live together in peace and create a beautiful place in a mandatorily shared area.



**ANARCHOTOPIA** 19-22 NOV 11:00-17:00  
UNGDOMSHUSET 1880 KAFÉ



# Shu Lea Cheang

A collection of DATA HACK: Reading (2014) Texts are randomly retrieved from online mailing lists and open archives. A dense layer of unfiltered text falls from the top of the screen, the sentences dissolve into an unsettled cloud of letters, the data debris makes up compost-enriched soil where fresh sprouts emerge to testify to our digital (non) existence. Typing (2014) Multi-channel sound is randomly retrieved and composed as the 3D rendered keys appear and disappear. Indecipherable sequences of electronic sound bytes and discordant jingles create an increasingly dissonant soundtrack, which closes dramatically with a sharp note: the end of everything. Seeding (2015) The text of a Monsanto US Supreme court case involving the infringement of a seed patent dissolves, and finally reappears as ever-replicating seeds. The seeds are distributed by human/machine power across the vast virtual farmland. Seeding is a powerful gesture towards the detriments of patents on organic farming and the desire for the liberation of seeds.

...wat het kost, maar wat het oplevert.#39; Hij benadrukt dat de gemeente Heerlen niet alleen moet kijken naar de kosten, maar ook naar de opbrengsten. Het is belangrijk om te kijken naar de opbrengsten van een kunstwerk, zoals de toename van de toeristische attractie en de verbetering van de leefbaarheid.

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**19-22 NOV 11:00-17:00**  
**UNGDOMSHUSET 1880 KAFÉ /**

## DATA HACK -TYPING, READING, SEEDING

# Nick Montfort

These are three of the four "Concrete Perl" poems, realized as 32-character Perl programs: Alphabet Expanding, ASCII Hegemony, and Letterformed Terrain. One can simply copy and paste the following lines individually into a terminal -- these correspond to the three titles above: `perl -e '{print$,$"x($+=.01),a..z;redo}' | perl -e '{print" ".chr for 32..126;redo}' | perl -e '{print$,$_=(a..z)[rand$=];redo}'` For purposes of determining the platform precisely and counting characters, the rules of Perl Golf are used. These rules, for instance, do not count the (optional) newline at the end of a one-line program. The Concrete Perl programs work on all standard versions of Perl 5.8.0 and have been verified as 32 characters long using a count program. These programs are also written to work and to be visually pleasing on terminal windows (or terminals) of any geometry. The fourth program is designed to crash and so is not a screensaver-like work.

**CONCRETE PERL** 19-22 NOV 11:00-17:00  
UNGDOMSHUSET 1880 KAFÉ

# Nick Montfort

Beginning in 2007, I wrote a series of seven very short Perl programs to generate poems. Each program in the ppg256 series consists of exactly 256 characters of code. The programs use no data sources except for strings in the code itself, no other programs or special libraries are invoked. Six of the seven programs are included. In ppg256-1 I sought to create a large vocabulary and to shape the output text so that it can be identified as a series of poems. In ppg256-2 I sought to create more variation in word length, line length, and strophe length and shape. In ppg256-3 I tried to at least evoke short and unusual narratives. In ppg256-4 I tried to create short, masculine, nonsensical utterances. In ppg256-5 I tried to develop my own version of Tristan Tzara's February 1921 Dada manifesto. In ppg256-6 I implemented a sort of clock, writing a program that would produce the same output when run at the same time.

```
j kit sits spill
e
e
e the twins
s
w to grin - a skill
u pall shits the grin
w the grit - a grin
e fall & pin
d kill
k skit
s sill
i the twit
w pall
k the sin
s sill & chin
g the shill
z
e the sits
s
s bat kills the spin
e of twill
e grin
w of shin
v the chit - a shin
e
e to skit
e to fan
e fan
e shit kills the spin
e
e the sills
s
s the kit
u spill grits fill
e fit shits shin
```

19-22 NOV 11:00-17:00  
UNGDOMSHUSET 1880 KAFÉ

PPG256

# Pall Thayer

Contemporary art is driven by its success in a consumer-based society. In other words, it's worth whatever someone is willing to pay for it. That's fine. However, there is a growing amount of art that has no resale value. It is immaterial, it is ephemeral, and its value will not grow over time. This is an example of a work of art that exists only as value. The complexity and intricacy of the work grows with every contribution. It is a literal painting of its monetary worth and provided as an overlay over established work of historical and monetary worth.



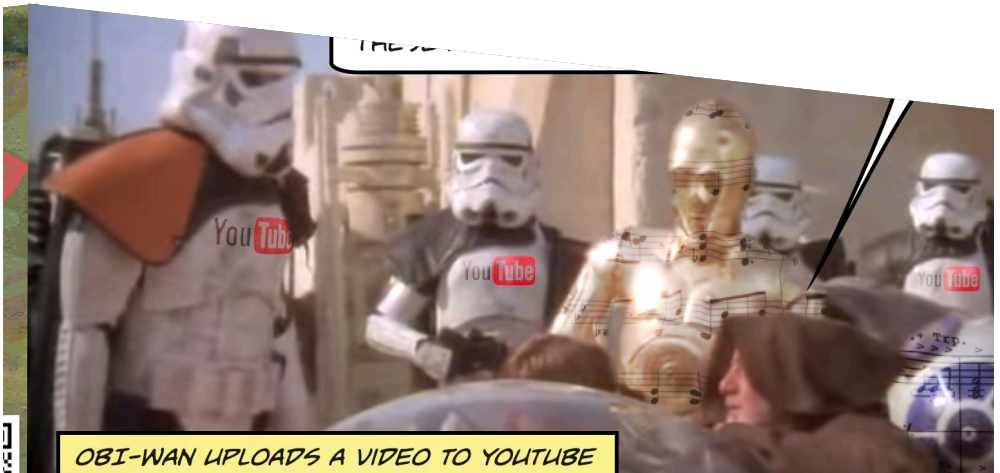
To interact, donate bitcoin to:  
1A4zhsAvpOML1pCPoR6r7pYGTq42McJEz7

**FOR WHAT IT'S WORTH** 19-22 NOV 11:00-17:00  
UNGDOMSHUSET 1880 KAFÉ



# Benjamin Grosser

At the behest of corporate copyright holders, media sharing sites like YouTube and Vimeo have implemented listening algorithms designed to identify uploaded music. However, these “Content ID” systems are designed to presume all use is illegal use; every match is automatically flagged, muted, and/or removed. Music Obfuscator enables users to hide music from Content ID. Each audio track submitted to the Obfuscator will be altered using a variety of signal processing techniques. The degree of alteration will be adjustable in order to accommodate changes in detection systems over time. How drastic will the changes need to be to evade detection? What kind of an aural world can exist on the edges of computational listening? The Music Obfuscator helps us understand the answers to these questions. The system is web-based, allowing easy drag-and-drop of audio files, and---with permission---the archives obfuscated results for others to browse.



*OBI-WAN UPLOADS A VIDEO TO YOUTUBE*

**19-22 NOV 11:00-17:00**  
**UNGDOMSHUSET 1880 KAFÉ**

**MUSIC  
OBFUSCATOR**



# Matteo Pasin

Deconstructing a MS-Dos videogame, frantically running through textures and levels of Duke Nukem 3D (Windows7 glitching colors). A series of 9 videos glitching the 9 levels that compose the second episode of DN3D Lunar Apocalypse: Spaceport, Incubator, Warp factor, Fusion station, Occupied territory, Tiberius station, Lunar reactor, Dark side, Overlord. This video is part of Fragments and Flows: a research which uses photography and video as cognitive survey instruments, targeted to problematize the look into the daily life and to witness and document the becoming as the first principle of reality. The intent is that of unveiling noise as the original element underneath the superstructure (fragments) that delimits and constrains the multiplicity in the becoming of matter (flows). It is not to create, represent, abstract, but simply to contemplate and document, free from preconceived perception of pragmatic and utilitarian patterns through a kind of immanent deconstruction.



# Mari Ohno

We release extremely subtle sounds from inside of our bodies that are hard to perceive. Although the body makes these sounds, they cannot be heard because of the limited audible range that a human being can hear. This work is a composition using the sound of the composer's bloodstream as a sound source. All the sounds were created from the bloodstream, recorded mainly in an anechoic chamber. The purpose of this work is to deconstruct and reconstruct the components of personal biological information via computing. These sounds were composed to express another reality beyond the boundary of the animate / inanimate.



**19-22 NOV 11:00-17:00**  
**UNGDOMSHUSET 1880 KAFÉ**

**FLOATING SOUND**

# Giuseppe Gavazza

"The phenomenon of music is given to us with the sole purpose of establishing an order in things, including, and particularly, the co-ordination between man and time." (Igor Stravinsky) This project started from the recording of the opening concert of a contemporary art exhibit: three different audio samples - each of 100" - were fragmented and played throughout the 100 day duration of the exhibition continuously, every day longer and longer up to the full 100% sample at the end of the exhibition, 100 days later.

This crescendo molto lentamente is ruled by 3 different metronome timings: 1 – normal western actual time: 100 days/24 hours/60 minutes/60 seconds. 2 – french revolution time: 100 days/10 hours/100 minutes/100 seconds. 3 – smooth time: every sample of a 1 second fixed duration performed at time intervals ever shorter, up to the 100% sample; a rhythmic glissando. This version uses three samples of my voice reading the present statement in three languages: English, French and Italian.



**AS TIME  
GOES ON**

**19-22 NOV 11:00-17:00  
UNGDOMSHUSET 1880 KAFÉ**



# BERGEN INVOCATION: A SONIC REWORKING

19-21 NOV 11:00-17:00  
ØSTRE LOBBY



## John Bowers, Tim Shaw

### Bergen Invocation: A Sonic Reworking

Drawing on traditions of psychogeography, improvised noise performance, soundscape research, DIY technologies and public making practices, we will create a performative installation that offers an imaginative remapping of Bergen. In collaboration with workshop attendees we will make recordings and conduct rituals in sites selected for their geological and historical salience, or in how they reveal the actuality of contemporary patterns of production, consumption, dominance and spectacle, or anticipate utopian or dystopian potentialities. Inexpensive self-made technologies for environmental sensing, sonification, and parodies of fitness tracking devices will accompany us. Microcontroller-based algorithmic sound file playback devices will be created as part of a sculptural mapping of the body of materials collected. A series of collective performance actions will take place both in the city and in Piksel venues. Overall, in the course of three days, we intend to sonically rework the city: quod est in sono est sicut quod est in posse.



**20 NOV 11:00-17:00**  
**UNGDOMSHUSET 1880 KAFÉ**

**COCÍCLO**

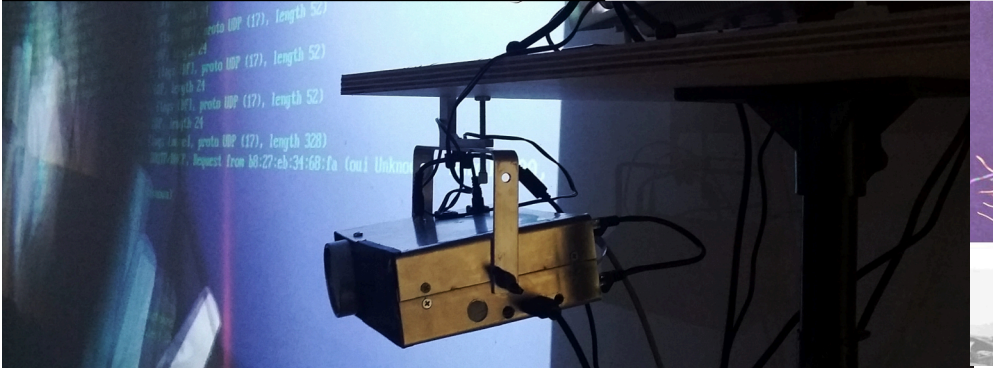


## **Alexandre Castonguay**

In this performative workshop, the participants will assemble an electronic circuit that translates Carbon Monoxide (CO) concentrations into audible sound. The design consists of an Esp8266 based circuit, a CO sensor and a piezo element that enables the sonification, geolocalization and visualization of collected data on a community map. The project mixes artistic, environmental and social concerns and adheres to the design principles of open hardware and software. The workshop occurs over 5 hours in which the operations of the circuit and the code will be explained during assembly. The group will then ride or walk in order to experience a 'situationist dérive' that transforms our understanding of the city and collects a lasting reminder of our paths in Bergen. Participants are invited to keep their Cocíclos in order to continue building a collective map online where a growing community of users can access the contaminants' variations over time.

# EMBEDDED ART SYSTEM

19 NOV 14:00-17:00  
ØSTRE BAR



## Wolfgang Spahn, Malte Steiner

This is a free and open source multi visual modular system based on the Raspberry Pi. The platform gives the possibility to combine many independent devices to create a more powerful system than most single computers can provide. Open Source and Open Hardware give the possibility to access all resources and to build a network with full control at the same time. It is possible to control simultaneously up to 255 independent embedded platforms and keep the costs low by using the Raspberry Pi. Each one runs a python program that controls the Omxplayer, the Raspicam, Open GL objects and a Paper-Duino-Pi Board with all its analog inputs and outputs. This Python program can be controlled with the Open Sound Control protocol. All embedded systems in the network are connected via Ethernet for exchanging OSC messages. In the workshop Malte Steiner and Wolfgang Spahn will show the basic functions of the Embedded Art System and how to control it via OSC.



20 NOV 14:00-17:00  
ØSTRE-Fongaard

**BODYNOISE &  
PERFORMANCE**

**BodyNoise**

## Quimera Rosa

### Body as a sensorial interface

This workshop is focused on experimental body sound and performance. We are interested in a collective creation of DIY artifacts as a tool to re-signify our relationship with technology and its role in the production of subjectivity. We assume a cyborg notion that seeks to experiment with hybrid identities, escaping from an infinite list of dichotomies such as natural/artificial, humane/machine, human/animal, man/woman, homo/hetero, art/science, human/environment, touch/sound, ability/disability, normal/abnormal, public/private... We propose an electronic circuit that generates sound through contact between our bodies>> bodynoise amp. This device transforms body electrical activity into sound through contact between different bodies. [BN A] allows for a tactile / sonic cyborg synesthesia and the deconstruction of identity. We use it to experiment with different body states, coupling the device to the body as prosthesis. Quimera uses this device in performance and has given more than 20 workshops in Spain, France, Canada, Switzerland, Portugal and Germany about its construction and use.

# FIELDS

22 NOV 11:00-16:00  
ØSTRE-Fongaard

Photo credit : Chris Scott

## Sébastien Piquemal, Tim Shaw

Smartphones are now almost ubiquitous; their built-in speakers can be surprisingly loud. Personal mobile devices are slowly becoming a powerful platform for live performance. The Fields system enables musicians and composers to explore the potential of these devices for sound diffusion. It is a distributed, open-source, modular instrument that is fully configurable. In this workshop we will introduce participants to using Fields as a performance or installation tool. We will cover technical aspects such as setting up, configuration and customization of the system with WebPd. We will also share experience gathered from a year of composing for tiny mobile phone speakers, trying different audience configurations, and dealing with technical limitations. The workshop will allow for participants to create their own work using Fields and will culminate in a listening session and open discussion. Participants need to bring their own laptop and optionally a mobile device. Programming skills are not required, anybody is welcome.

**19 NOV 14:00-17:00**  
**ØSTRE-Fongaard**

**LIVE PROJECTION MAPPING**  
**WITH AZIZ!LIGHTCREW'S FREELINER**



## **Maxime Damecour**

'alcFreeliner' is a open source projection mapping tool built to improvise animations on anything in the reach of a projector. Developed over the past 2 years, it has become quite full of features. But its interface is very rudimentary; it relies on a keyboard, mouse, and three lines of informational text. This workshop will be enough to make some very satisfying projections limited only by your imagination. Please bring a computer with GNUlinux/osx/win and Processing 3.0 installed; a three-button mouse is also recommended.



# PIKSEL KIDZ

**PIKSEL15**  
**19-22 NOV**

## CITY-GO!

Har du en historie å fortelle om Bergen? Og som som du vil andre skal få høre når de går rundt i byen?

**City-go!** gir deg opplevelsen av en utvidet virkelighet av Bergen by skapt av DEG!

Velg et sted i Bergen som betyr noe spesielt for deg, og fortell oss hvorfor. Vi spiller inn historien din og legger den inn i kartet på appen vår, og når noen besøker stedet ditt vil historien bli gjenfortalt.



Har du lyst å lage en robotskulptur som styres av sollys? Sammen med kunstneren Egil Paulsen vil du få produsere skulpturer som får energien sin fra solen, og omformer denne til kinetisk energi.

Kunstverkene som produseres av deltakerne vil bli en del av utstillingen **Piksel Kids** under Pikselfestivalen, 2015.

## CITY SUN!

## CITY WATER!

Er du nysgjerrig på vann og klima? Hva betyr det at vannet er sunt eller usunt, og hva trengs i vannet for at dyr og organismer skal kunne leve i det?

På dette verkstedet får du lage dine egne sensorer og instrumenter til å teste vannkvaliteten med, og resultatene blir visualisert i Minecraft! Vi drar til sjøen i Bergen og tester hvordan det går med vannet der. Bli med, og vær en miljøbiolog for to dager!



## PIKSELKIDZ

er du mellom 8 og 18 år gammel? Så sjekk ut våre KIDZ og ikke-fullt-så-KIDZ verksteder!

For påmelding, send email : [tiril@piksel.no](mailto:tiril@piksel.no)

<http://15.piksel.no>

BAFT



NORSK MUSEUM FOR KULTURSKILLING

pnk

2015

SKOLELAND FOLKESKOLEN

2015

2015

OCA

AFB-33

2015

2015

# CITY WATER!

19 NOV 18:00-21:00 S12 GALLERY &  
21 NOV 11:00-17:00 UNGDOMSHUSET 1880

**Gemma Latham, Elisabeth Weihe**

Are you a "water curious"? Does a certain temperature of muddy water mean the water is healthy? Or do we need water to be full of useful stuff for animals to live in it? In this workshop, you will be making your own computer sensors and devices to test the water on the Bergen shores. Join us to be an environmental biologist for 2 days!

City-Water is an engagement project to visualize water data from the city in physical and digital environments. Young people produce their own arduino based water sensors, and gather water data from the city. This data is visualized in the game Minecraft using the Raspberry Pi mcpi API, and then documented on github, a social project distribution service. Young people explore critical thinking around their local natural environment, exploring the city and its relationship to water and the sea with their own sensors and translating this data to a game world they may be familiar with.



# CITY-GO!

19&20 NOV 18:00-21:00 S12 GALLERY &  
21 NOV 12:00-14:00 UNGDOMSHUSET 1880

## NoTours

Enrique Tomas, Horacio González

Do you have a story to tell us about Bergen? Do you want everybody to hear it when they walk throughout the city? City-Go! proposes an augmented sound experience of the city created by YOU. Choose a point in Bergen and tell us a story about it. Record the story in a sound studio and attach it to the Bergen map through a smartphone app. When someone visits the same location with their phone, the stories become alive again!

NoTours is software by Escoitar.org for the Android mobile platform. It uses GPS technology along with the Digital Compass of the phone for allowing you to build interactive site-specific sound-narratives. You can explore and experience space through a mix of binaural and ambisonic recordings that are controlled depending on your location and movement. While enjoying it you can move freely and build your own narratives as you decide your next steps. It is an immersive sound experience without limitations.



PikselKidZ

**20 NOV 18:00-21:00 S12 GALLERY &  
22 NOV 12:00-14:00 UNGDOMSHUSET 1880**

**CITY SUN!**

## **Solar Kinetic Sculpture Workshop**

CITY SUN! Would you like to make a sculpture that becomes alive with the sun? With artist Egil Paulsen, you will produce robotic sculptures that move by converting solar energy into kinetic energy. Become familiar with how solar power works, and create art using renewable energy!

Recycling, derelict materials, and self-sufficiency are keywords that would emerge in some future where new life forms will have to rely on other building blocks than those required for biology. Thinking of plastic as the basis for new life forms in an extreme futuristic scenario has resulted in a series of 'living' kinetic sculptures. You are invited to a workshop where you can take part of this journey. Combine art and technology in a fun way by creating simple poetic machines, which in turn gives way to experiencing renewable energy technology, where movement and animism are its direct aesthetic qualities. The workshop is suitable for children of 8 years and up.

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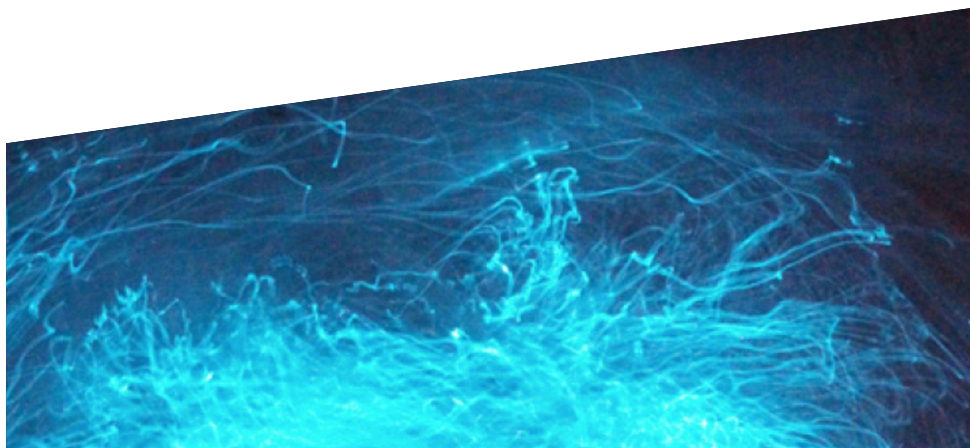




# Ben Freeth

## Bio-Vortex (Bio-Illuminating The Vortex)

"Some things, though they are not in their nature fire, nor any species of fire, yet seem to produce light" (Aristotle) This project envisions a hybrid musical instrument, part living part electromechanical; it works with the natural metabolism of bioluminescent algae as a technical system interfaced with open source / DIY lab equipment and light detecting and sound generating electronics. The idea is to develop a truly sustainable musical instrument, one where all of the energy needed to power the instrument is provided by the sun. For the algae this is through photosynthesis, for the electronics through solar cells. Solar charged batteries are used to power an instrument based around simple magnetic lab stirrers (2 magnets that spin + a stirring bar within a fluid). These create a vortex within several flasks containing a liquid medium of algae (*Pyrocystis Lanula*), which generate intense momentary bioluminescence. This light is converted to sound through a set of custom electronics.



# BIO-VORTEX

21 NOV 11:00-13:00  
ØSTRE BAR

# MUZHACK

## Arve Knudsen

Recorder V2 (instrument) [by aknudsen]



Mini UNTZtrument Midi Contr...  
aknudsen



Saxo synth [by tart2000]  
aknudsen



Moog S  
aknudsen



**21 NOV 11:00-13:00 ØSTRE**

MuzHack is a free and open platform for publishing/sharing (typically open) music technology, developed by Arve Knudsen in cooperation with the Norwegian sound research centre Notam. The project is completely open source (MIT license), and hosted at GitHub. MuzHack aims to become the standard platform for publishing open music hardware projects and sharing their designs with the community. To this end, it provides a comprehensive, searchable, catalog for browsing projects and pages for individual projects. On project pages, one is presented with pictures of the product, a textual project description, instructions for reproducing the project, as well as downloadable files required for the project's reproduction.

Project creation/editing is quite slick, for example textual parts are written in Markdown format with live preview à la Stack Overflow, allowing for rich text formatting ideal for technical purposes, while remaining easy to read and write. Pictures and files are included through drag and drop and uploaded to MuzHack's servers.

# Ben Freeth

**21 NOV 11:00-13:00 ØSTRE**

This multichannel installation features sonified & lumified data logs (including bio-data) from mine explorations (revisited Victorian lead and fluorite works), UV fluorite crystals, uranium ore, and crude oil from Mining Institute archive. It was built to highlight the vast networks that humans have carved out underground, to explore the process of archivization, and to examine the oscillations between Deep Time and the Anthropocene. Responding to the Mining Institute archive, map library bio-data and environmental data logs were collected from visits to mines in the North East of England. This data was used to create sound and visuals by inputting it into custom code written using SuperCollider, in collaboration with Sean Cotterill. The resulting field of sound involves floating clouds of oscillators moving within an eight-channel sphere. The fluorescent elements of the minerals and ore flicker and pulsate under the two frequencies of UV light, creating complex spatialized harmonics and visualizing the data logs as light.

**“GOLD LINES ARE  
MINERAL VEINS”**

# PNEK Network

PNEK (Production Network for Electronic Art, Norway) is a network structure aiming to provide good production conditions for artists working with electronic and interdisciplinary art. PNEK assists artists and structures with competence building, project development, workshops, screening/distribution of works, and activities aiming to raise the general awareness about hybrid artforms through seminars and social/artistic events. The founding members are Atelier Nord (Oslo), BEK (Bergen), i/o Lab(Stavanger), NOTAM (Oslo) and TEKS (Trondheim). As from autumn 2008 six new nodes joined the network: Piksel (Bergen), Atopia (Oslo), Utsikten Kunstsenter (Kvinesdal), Kunsthall Grenland (Porsgrunn), Dans for Voksne (Oslo), Lydgalleriet (Bergen), and from 2012 KINOKINO(Sandnes). PNEK is organized as an independent cultural foundation, funded by the Ministry of Culture in Norway.



*Production Network for Electronic Art, Norway*

DIY A-Life!



Seminar

15



# PIKSEL DIY-A LIFE SEMINAR

19&20 NOV 10:00-13:00  
ØSTRE

Biotechnological research is no longer limited to specialist laboratories: a growing community of biologists, amateur enthusiasts and technophiles is experimenting in kitchens, workshops and DIY laboratories. Some people view the democratisation of biotechnology as a threat, others as an opportunity to gain a better understanding of complex scientific interrelationships within society.<sup>1</sup>

All of us have witnessed the media-hype generated by such biotech issues as the human genome, human cloning, and debates over the use of embryonic stem cells. But what often goes unmentioned is that the real generator of radical change in fields like biotech is not genome mapping, cloning, or genetic engineering – it is “bioinformatics”, the use of computer technology to aid in the study of life.

This is worth noting because it means that any “alternative” approaches in bioinformatics and uses of biological data, will have to confront issues such as access to information, access to tools, development of skill sets, distribution of knowledge, and the challenges of transdisciplinary work. The main question which is put forth is: How does an individual or group acquire the knowledge, skills, resources, and tools needed to work in a non-orthodox manner in biotech? Not surprisingly, artists have been among the first to explore such questions, suggesting that a new type of serious research can co-exist alongside a critical and political consciousness.

In the same way that open source has contributed to a DIY computer culture and various types of hacker ethics, could the design of innovative bioinformatics software apps, combined with public access to the genome, spawn a DIY biotechculture? At the furthest reaches of the extreme, how might this “open source DNA” movement affect areas such as media art, education, body performance, regenerative medicine, body art, and wet computing?<sup>2</sup>

1.- Biotechnology for all, SATW INFO 2/15, August 2015

2.- Open Source DNA? Eugene Thacker

**19 NOV 10:00-13:00**  
**ØSTRE**

## **ETHICAL ART AND BIO ART**

**10:00 Margrét Elísabet Ólafsdóttir (IS)**

**10:30 Ben Freeth (UK)**

**11:00 Coffe break**

**11:15 Robertina Šebjanič (SI) Art + Bio**

**11:45 Hege Tapio (NO)**

**12:15 Gjino Šutić (Croatia) DIY gen ADN**

### **Margrét Elísabet Ólafsdóttir (IC)**

PhD in aesthetics and art theory from the Université Paris 1 in 2013. Her research focuses on the impact of digital media and technology on visual art in Iceland. Parallel to her research she co-founded Lorna, association of electronic arts and Lorna Lab an interdisciplinary platform of art, science and theory.

### **Ben Freeth (UK)**

Artist, musician, researcher, and lecturer whose work is a neologic spasm on the precipice of conceptualization. He uses data (bio, locative, environmental, solar, body weather / space weather), networked technologies, sonification, prototype electronics and marine algae to create both installations and contemporary sonic rituals enabling encounters with non-humans and darker more beautiful realities.

### **Robertina Šebjanič (SI)**

Ljubljana-based intermedia artist whose practice evolved from the fields of humanist and natural sciences. For several years her research focus has been oriented towards the field of bio-art, living systems, AV performances, noise/sound art, installations and interactive ambiental responsive immersive environments. Her work is often interdisciplinary and collaborative and has been exhibited internationally.

### **Hege Tapio (NO)**

Artist, curator, art consultant, and one of the founders of i/o/lab. She has worked for years in the field of bioart and curates the Article Biennial. She helped organize the first Nordic Master Class in bioart in cooperation with SymbioticA, and has produced some of the first public electronic art installations in Stavanger.

### **Gjino Šutić (CR)**

Researcher, innovator, artist, educator, and founder / CEO / CSO at UR Institute & Gen0 Industries. He conducts research in biotechnology, biomedicine, electronics, robotics, computer science, engineering, and nanotechnology. Using a DIY approach to biotechnology (biohacking), he invented the concept of "Biotweaking" which fully defines his philosophy and work.

# DIY A-Life. DNA and synthetic.

20 NOV 10:00-13:00  
ØSTRE

10:00 Christian Mong (NO) – <http://www.økolog.no>

10:30 Rasa Smite (LV)

11:00 Coffe break

11:15 Nora S. Vaage (NO)

11:45 Cristian Delgado (MX)

12:30 Kat F Austen (UK)

## **Christian E. Mong (NO)**

Christian E. Mong is an ecological advisor for urban development, from overarching urban / landscape planning right down to planning and design of green spaces and gardens. He also performs landscape analysis to map biological values and assists as an approved ecologist in environmental certification (BREEAM NOR).

## **Rasa and Raitis Smite (LV)**

Editors of the recent books TECHNO-ECOLOGIES II, Media Art Histories (Acoustic Space No. 1 2) and TALK TO ME: Exploring human-plant communication. They are the founders of E-LAB (1996) and The Center for New Media Culture RIXC (2000) in Riga, also organizing the annual international new media culture festival "Art+Communication" in Riga.

## **Nora S. Vaage (NO)**

Art historian and interdisciplinary researcher at the University of Bergen, at the final stage of her PhD dissertation on the ethical and epistemological aspects of biotech art. Nora has lectured extensively on art theory, visual culture, and image ethics. She is co-curator with Hege Tapio of the 2016 Article Biennial in Stavanger.

## **Cristian Delgado (MX)**

Molecular Biologist specialized on sy nthethic biology, working on open source and DIY molecular biology at the Universidad Nacional Autonoma de Mexico. He has collaborated on art-science projects with ARTE+CIENCIA, BIOSCENICA, PDI UNAM, UNESCO, ICTP, 3DMJMAKERS, etc. His work has received awards from MIT, UNAM and others.

## **Kat F Austen (UK)**

Artist in Residence at the Faculty of Maths and Physical Sciences, University College London. She has exhibited, lectured, and presented workshops internationally. Her work explores the interplay between acts at different levels - individual, collective, communal, municipal, state, national, international - in the context of a global, digitally-enabled society.

# PARALLEL ACTIVITIES

As part of the Píksel Festival 13th edition, a series of DIY bio-art workshops will occur:

**“Solar Kinetic Sculpture”** by Egil Paulsen,

**“Píkslo\_deep\_diving / underwater interception of the nordic sea”**,  
by Robertina Šebjanič,

**“R language, a powerfull tool for environmental data analysis”**  
by Christian Mong

**“DIY BioLab: How to mix molecular biology and electronics as new performances”** Cristian Delgado

**“Bio-Vortex (Bio-illuminating the vortex)”** by Ben Freeth.

*The Píksel exhibition will include work related to BioArt from more than 16 artists.*



**Organized by PIKSEL**

Partners: NORTH Creative Network

Support: EEA/Norway grants

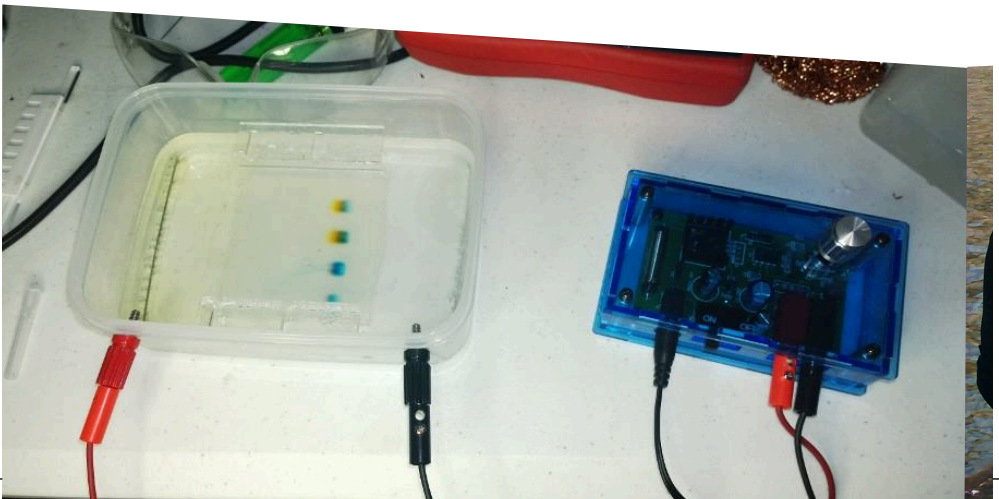
# DIY BioLab

19-20 NOV 14:00-18:00  
BIKS Håndtverkssalen

## Cristian Delgado

**How to mix molecular biology and electronics as new performances**

Molecular biology has for many years proved to be a great tool that accelerates our knowledge of biological phenomena, allowing us to redesign, reinvent and even recreate it. With this ability to change the basis of biological nature, a lot of questions ethical and social questions have arisen, but one of the most important is: Who can access this technology? A new paradigm recently developed in which many scientists and artists around the world started to make an OpenSource DIY version of this technology. This opens new alternatives for the democratization to science, allowing us to better understand it and the phenomena involved. Art becomes an integral part of this process, instead of being separated from science as many believe, they became one in a beautiful dance. During this workshop we will: Understand the basics of molecular and synthetic biology, construct a full-featured kitchen based DIY BIO laboratory, perform experiments with electronics, discuss the pros and cons of biotechnology, and read some texts.





**17-22 NOV 11:00-16:00  
BIKS**

# **PIKSLO\_DEEP\_DIVING**

**Robertina Šebjanič, Kat Austen, Gjino Šutič, Slavko Glamočanin**

## **Underwater Interception of the Nordic Sea**

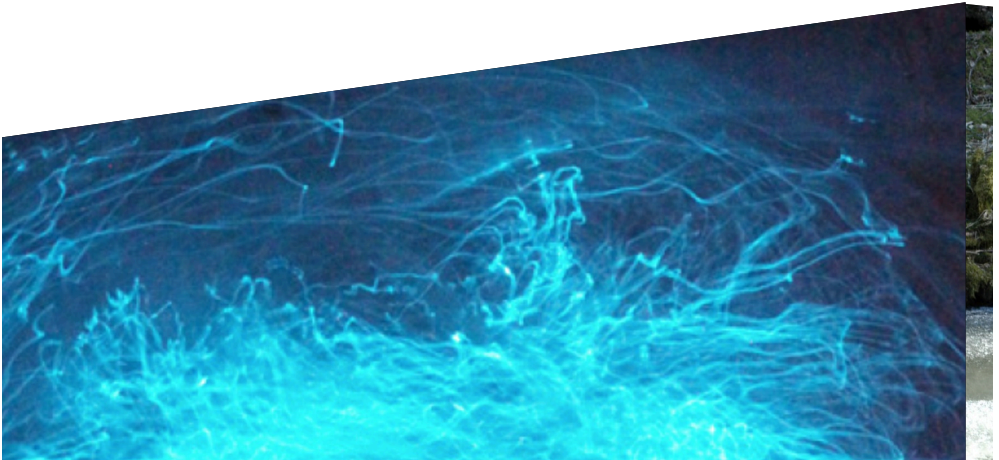
The ocean is a complex, challenging, and harsh environment; accessing it requires specially designed tools and technology. It has only been within the last 50 years that we are able to examine the ocean in a systematic, scientific, and non-invasive way. Our ability to observe the ocean environment and its resident creatures has finally caught up with our imagination. In 1490 "Leonardo da Vinci observed how the sound of ships travelled long distances underwater. Seafaring, while not in its infancy, was a "life driven" technology; the power of wind and human muscle generated the only anthropogenic noises in the sea. Over the next 400 years, ocean noise began increasing exponentially." (The Journal of Acoustic Ecology) We have continued to overtake the sound environment of the animals. During this workshop we will explore DIY biology, chemistry and sound. We will take field trips out to the fjords surrounding Bergen to collect data to experiment with in our DIY laboratory, exploring the inter-relationship between sound, nature, and society to think about the development of better sonic environments for the animals living in the world's oceans and seas.



# Ben Freeth

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**BIO-VORTEX**

**21 NOV 14:00-17:00  
ØSTRE BAR**

# Christian Mong

## a powerfull tool for environmental data analysis

It is important to categorize landscapes in a meaningful way. How and what should we build? Which buffer zones must we include? The most valuable landscapes may be vulnerable to various forms of influence, and this depends on local context. Landscapes have different value for agriculture: quality of soil and grazing conditions in outlying areas. Forest soil and peat lands can also be assessed by the carbon stored in organic material. The purpose of this course is to teach how the R statistical environment language can be applied to biological data analysis. After this course, the students will be able to use R for analyzing diverse data types from very different biological experiments. The theoretical aspects of the methodologies will be introduced, and after that, assignments and activities will provide opportunities to explore practical ways of performing the analyses. You will learn how to use R for performing statistical analysis relevant for molecular biologists. You will learn how to perform simple sequence analysis with R. You will get an essential overview of biological network analysis and the highly popular enrichment analysis of gene lists.



**19 NOV 14:00-17:00**  
**S12 GALLERI**

**R LANGUAGE**

# PIKSEL15 BERGEN

## BIKS

Kong Oscars gate 15, Bergen  
[KAFÉ](#) / [Håndtverkssalen](#)

## S12 GALLERI

Skostredet 12, Bergen

## ØSTRE / LYDGALLERIET

Østre Skostredet 3, Bergen

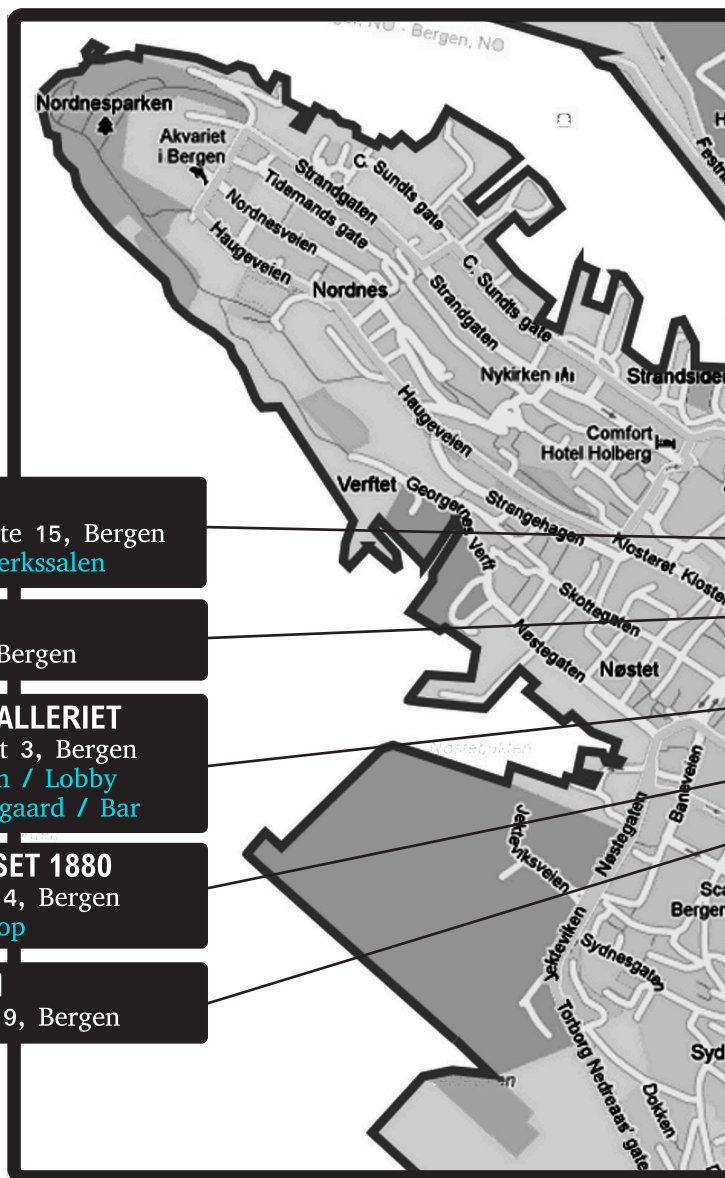
1st floor : [Oram](#) / [Lobby](#)  
2nd floor : [Fongaard](#) / [Bar](#)

## UNGDOMSHUSET 1880

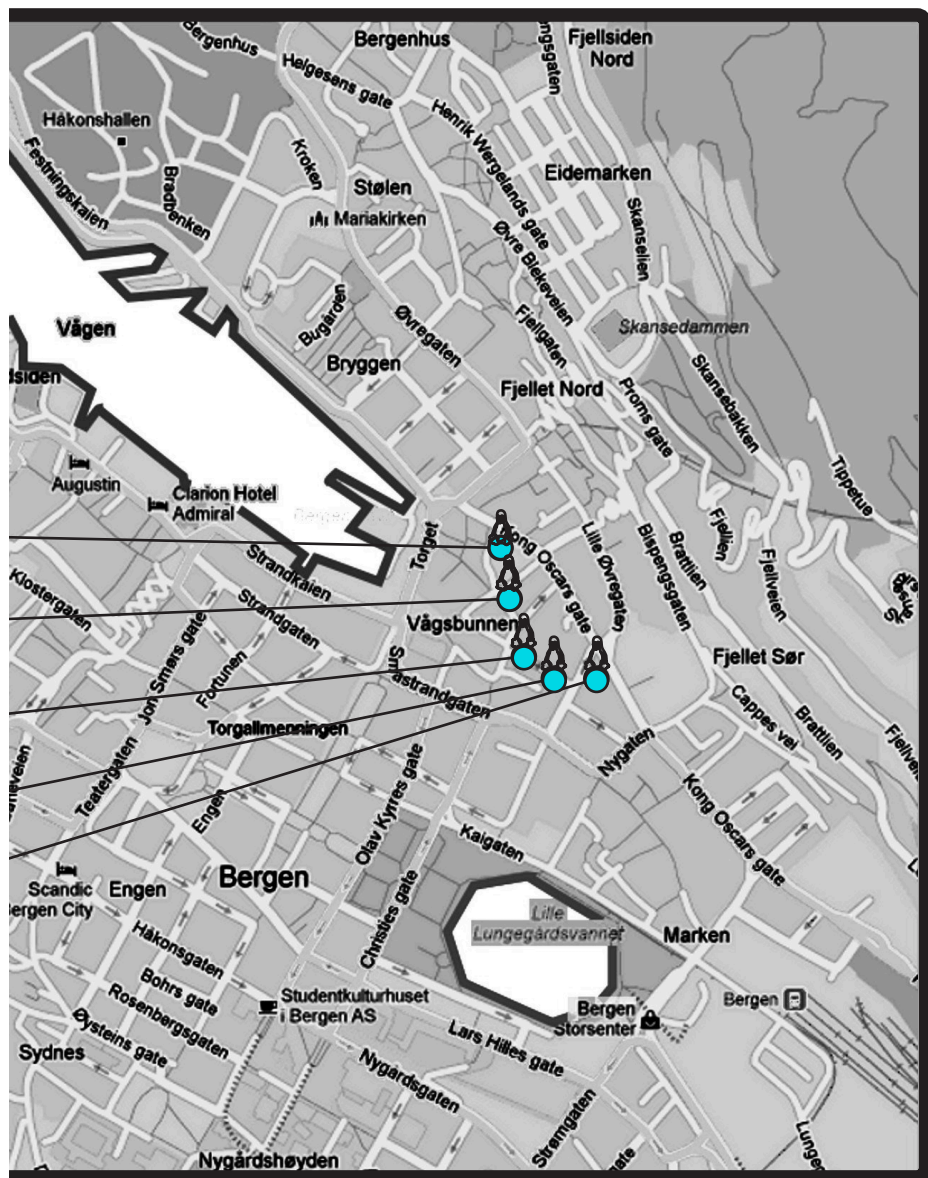
Domkirkegaten 4, Bergen  
[KAFÉ](#) / [workshop](#)

## BART GALLERI

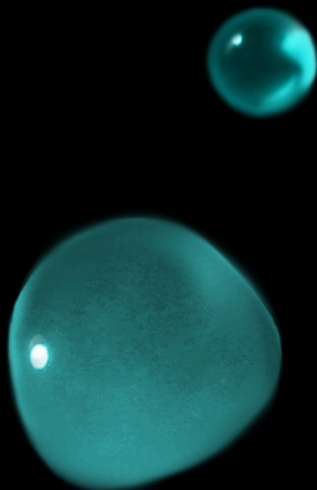
Domkirkegaten 9, Bergen











13th annual Píksel festival for Electronic Art and Technological Freedom.