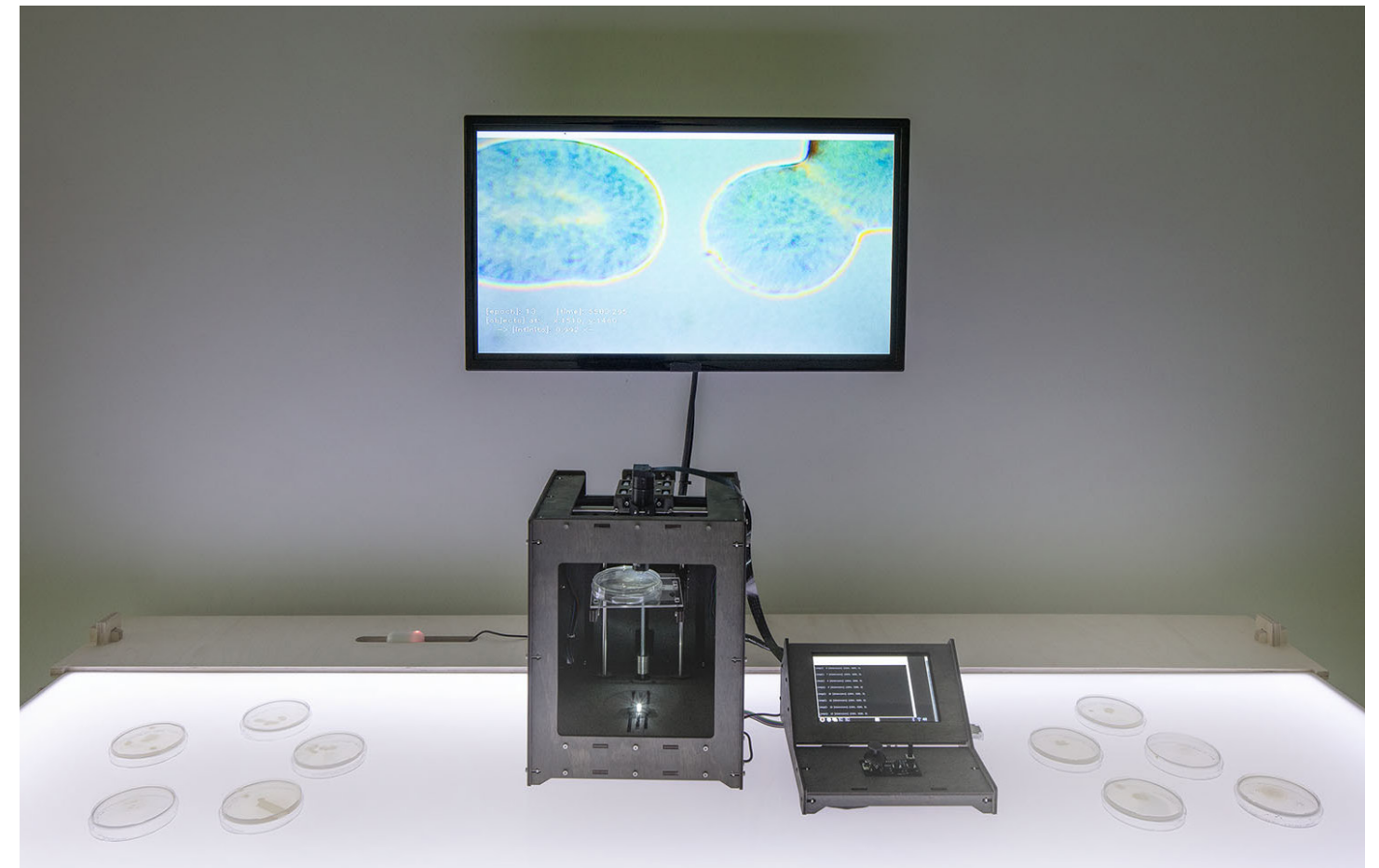


INTERSPECIFICS

SELECTED WORKS 2013-2020



SPECULATIVE COMMUNICATIONS (2017-2020)



Speculative Communications is the outcome of a 2-year artistic research, dedicated to the study of patterns that emerge from the morphology of various species of the genus of bacteria *Paenibacillus*. The project develops an observation environment that allows humans, through a machine, to recognize repetitive organized behaviors within biological cultures.

The system classifies events, and endows them with a unique sound and visual gesture, to achieve an auto generative joint composition, which is orchestrated by the movement and changes in the shape of the microorganism.

Over time, the machine accumulates the logics of transformation recorded, turning into artificial intelligence that can potentially anticipate the bacteria's reactions and co-evolve with it through the same audio-visual composition.

Inspired by research centers such as SETI, an acronym for Search for Extraterrestrial Intelligence, Speculative Communications is half a research space for non-anthropocentric communication and half a self-generating system of non-human intelligence.

In collaboration with the Fernan Federici Research Group and Keymer Lab, Santiago de Chile. With the support of the National Fund for Culture and the Arts [MX], National Fund for Scientific and Technological Development [CL], Media Lab Prado [ES], and Arte Alameda Laboratory [MX]. It was first exhibited at the DAAD Gallery Ontological Machines solo exhibition, curated by Dahlia Borsche.

PRESENTED AT_

Ontological Machines. DAAD Gallery, Berlín [DE]
Frecuencias Comunes. BioBAT Art Space [US] (2021)

+ INFO_

http://www.berliner-kuenstlerprogramm.de/de/veranstalt_detail.php?id=2135

<https://github.com/interspecifics/ComunicacionesEspectativas>

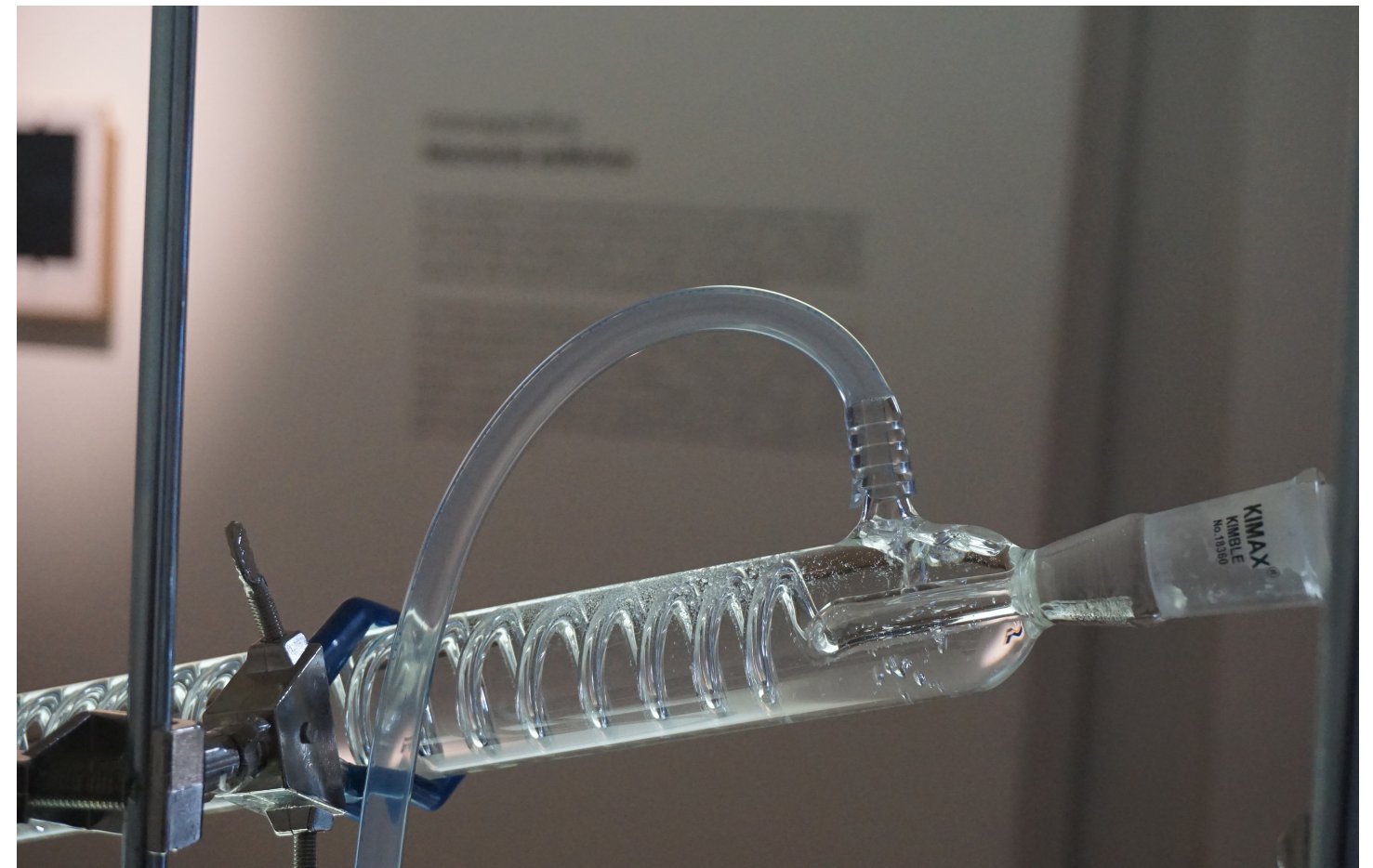
<https://www.flickr.com/photos/microhom/albums/72157714026700577>

<http://interspecifics.cc/work/speculative-communications-2017/>

<http://interspecifics.cc/comunicaciones-espectativas/>



SPHERICAL MEMORY (2019)



Odo-edible installation that activates the memory of the viewers by exposing them to the smell of wet soil. The piece synthesizes the petrichor: a distinctive, earthy, usually pleasant odor that is associated with rainfall when following a warm, dry period and that arises from a combination of volatile plant oils and geosmin released from the soil into the air and by ozone carried by downdrafts.

Arranged in a semi-dark room that minimizes the stimulation of the rest of the senses, a distillation instrument breaks up the hydrolats of the petrichor, which upon contact with air, come of infused in a solidify edible gel. Right beside, a bioprinter produces spheres with this material, to be ingested by the viewer.

Upon entering the mouth, the spheres disintegrate and release the odor that travels through the pharynx to the olfactory bulb, a place with direct connections to areas of the brain strongly linked to emotions and memory: the amygdala and the hypothalamus.

Right after the experience, the audience shares their memories ending in a recorded audio memoir of the piece. The collection already has more than a thousand testimonies, which derives in sound activations of the work.

Commissioned by Iván Edeza for the collective exhibition Sinestesia Olfativa, CDMX 2019.

PRESENTED AT_

Sinestesia Olfativa. Museo del Perfume [MX]

+ INFO_

<https://github.com/interspecifics/memoria-esferica>

<https://www.flickr.com/photos/microhom/albums/72157714026483507>

<http://interspecifics.cc/work/memoria-esferica-2019/>



TERRESTRIAL ENSAMBLE (2018)



The Terrestrial Ensemble is a mechanical-sound instrument made up of 4 Teponaztles, an electronic system, and software that accesses data from the National Seismological System.

The Teponztle is a drum of Mesoamerican origin built with the trunk of a thick tree, hollowed out from the bottom to form a resonance chamber. It has three openings on its top, cut into an H shape to be hit with rubber balls on mallets, often made of deer antlers.

The data obtained, an accumulation of information from past earthquakes, activate the rhythms that the mallets play on the drums and soundly represent the variability in the tectonic movements of the country.

This piece is part of a line of research that addresses the convergence of ancient and contemporary technologies, based on a series of transduction processes between physical forces and data materialized in to sound.

In words of Carlos Prieto, "the interest of the piece lies in investigating the powers of an affective and material force that is least subject to the personality of an individual in the decision-making that gives rise to the constant generation of the sound form. Information transactions between interfaces that translate the seismic energy that reaches the drumsticks and makes the teponaztles sound. "

Commissioned for the exhibition Resurrecciones de la Materia under the curatorship by Carlos Prieto.

PRESENTED AT_

Resurrecciones de la Materia. Ex Teresa Arte Actual [MX]

Contelaciones de la Audio-Máquina en México. Museo Juan Soriano [MX]

MexiFuturismos. Museo del Tecnológico de Monterrey [MX]

+ INFO_

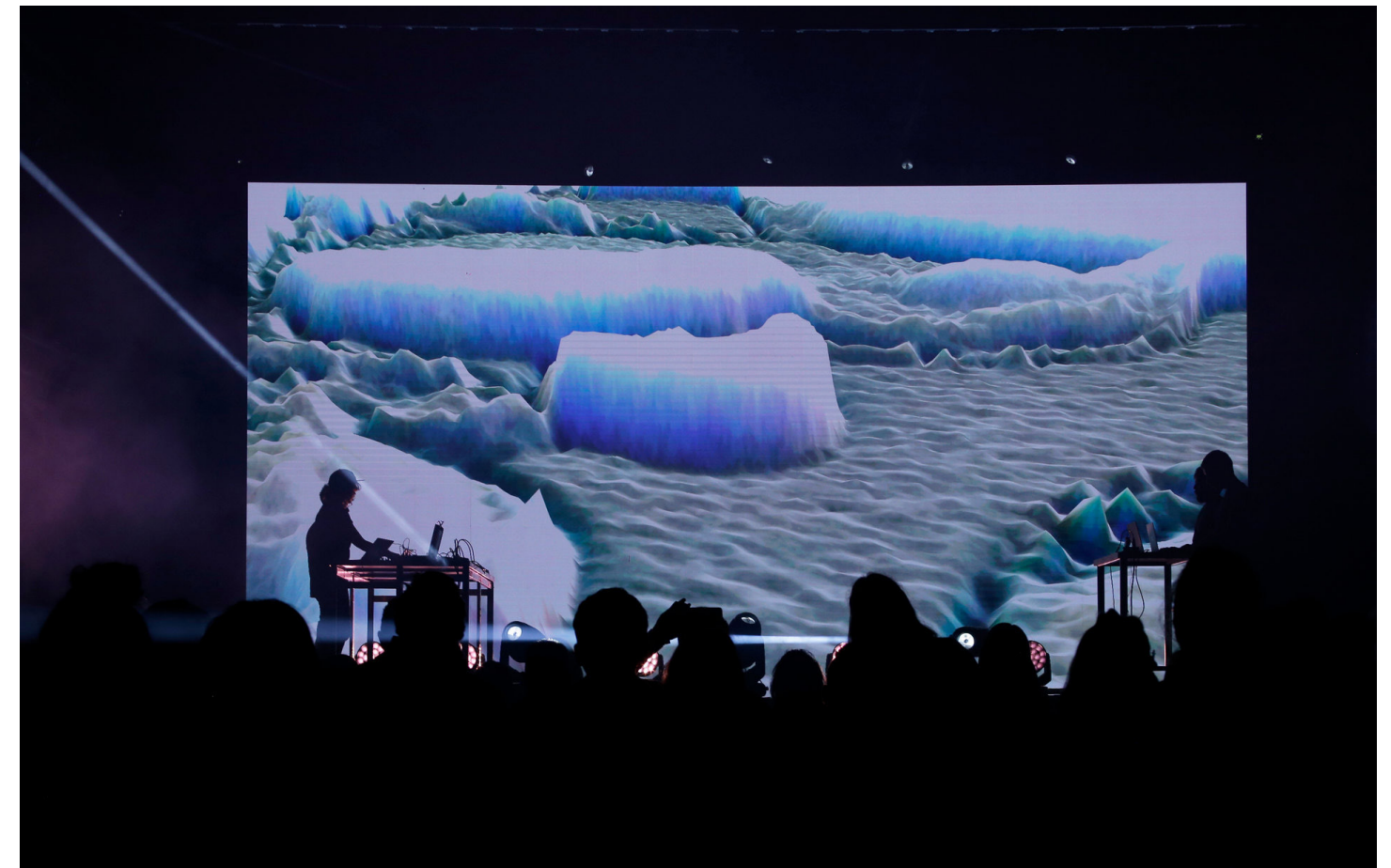
<https://www.flickr.com/photos/micro-hom/albums/72157695576190321>

<https://github.com/interspecifics/EnsambleTerrestre>

<http://interspecifics.cc/downloads/Resurrecciones.pdf>



SPECULATIVE COMMUNICATIONS LIVE (2018)



Speculative Communications is an immersive performance that introduces the viewer to the microscopic world of the *Paenibacillus* bacteria. A multi-species audiovisual narrative inspired by the morphological patterns of the colonies of this bacterium, led by Artificial Intelligence and interpreted by humans.

A dialogue amplifies during the performance, where the bacteria commands the aesthetics of the instruments and inspire the management decisions that Artificial Intelligence proposes in musical terms. A collaboration that moves away from anthropocentrism to make way for the expression of a form of universal sensitivity. The sound result is a journey that oscillates between ambient, drone, and abstract techno. For the project, we worked closely on an investigation that observes characteristics in the growth and morphology of the *Paenibacillus* bacteria. And it was necessary to develop a series of tools such as microscopes, computer vision programs, and machine learning, among others.

The project results from two years of research and development supported by the National Fund for Culture and the Arts of Mexico, the MediaLab Prado in Madrid, Cala Alliance in conjunction with the ASU Art Museum in Phoenix and the BioFabLab of the Catholic University of Chile .

PRESENTED AT_

Mutek Montreal [CA]
Mutek_MX [MX]
New Music Festival, Vancouver [CA]
Cala Alliance, Phoenix [US]
Festival Punto Ciego, Aguascalientes [MX]
Congreso de Arte de la Universidad de Colima [MX]
Festival AKi Ahora, Tulum [MX]
Festival Revueltas, Durango [MX]

+ INFO_

<https://soundcloud.com/lessnullvoid/sets/80x-speculative-communications>

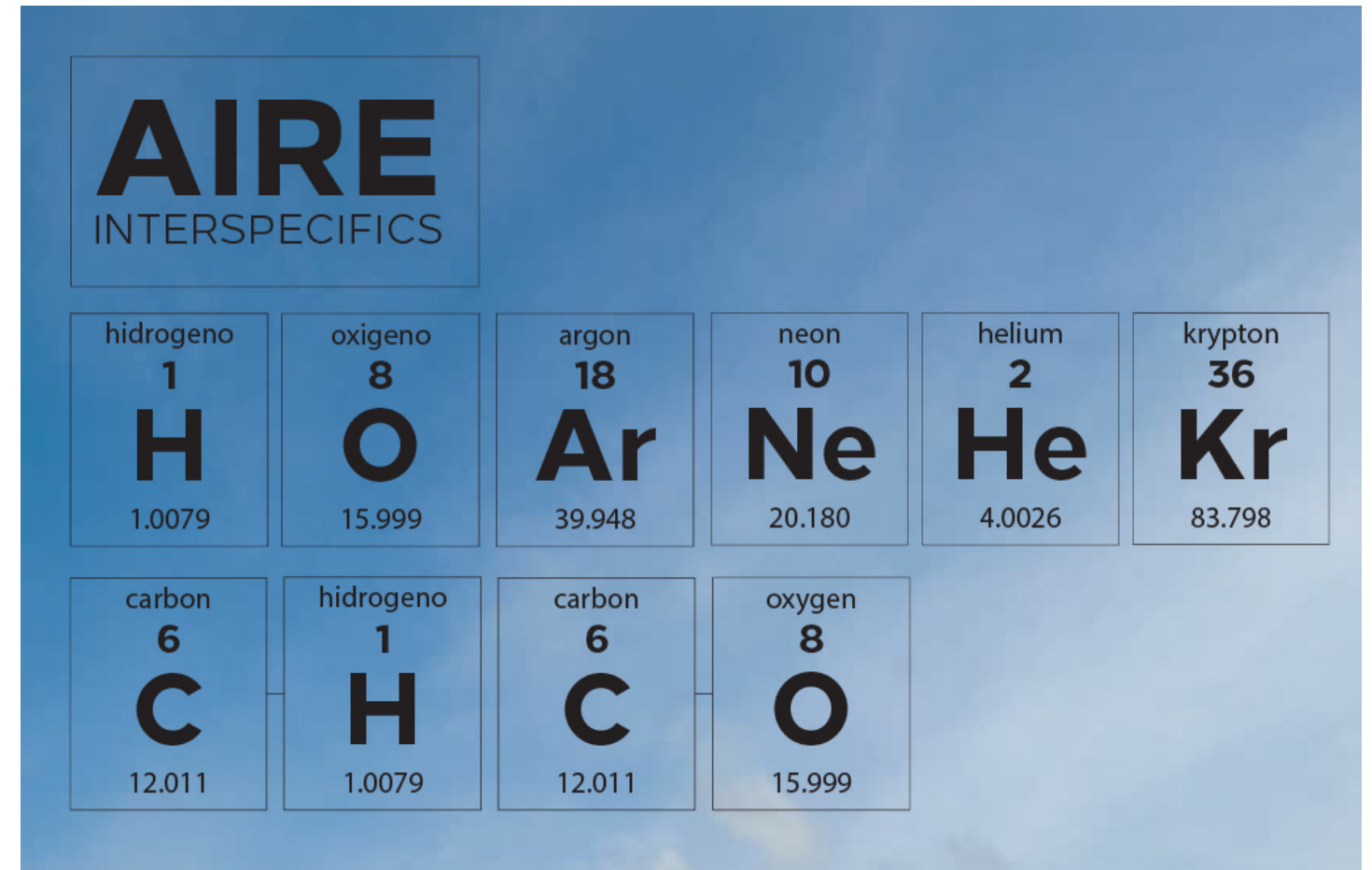
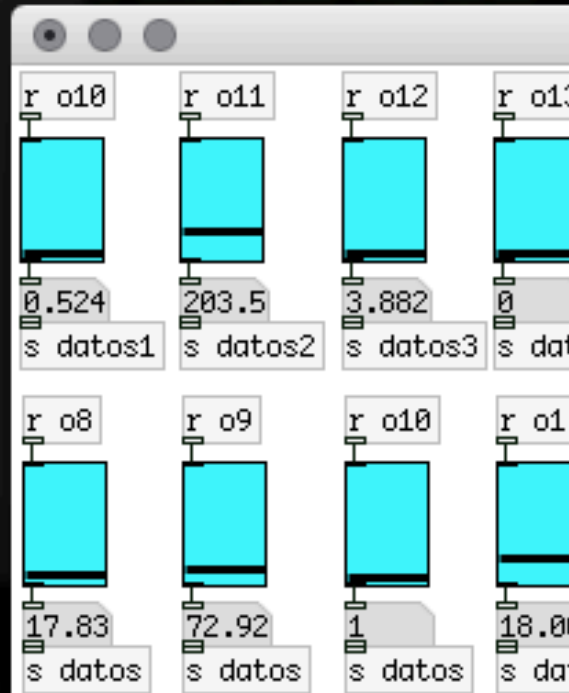
<https://soundcloud.com/lessnullvoid/sets/speculative-communications-ep>

<https://www.flickr.com/photos/microhom/albums/72157705435012691>

<http://interspecifics.cc/comunicaciones-speculativas/>

<https://vimeo.com/320857134>

AIR (2017)



Aire is a generative sound piece inspired by the complexity and variation of atmospheric data in one of the most polluted cities in the world: Mexico City. We start from a research work that is in charge of understanding how CDMX's environmental monitoring system operates and uses software written in Python to access the data provided by environmental sensors in real-time.

The data received: sulfur dioxide, carbon monoxide, nitrogen oxide, nitrogen dioxide, nitrogen monoxide, ozone and particles per thousand, are distributed by zones and analyzed on a scale of saturation levels to give their flow character and animate an assembly of virtual synthesizers programmed into Supercollider. Each one of the pollutants has its own sound identity, and the fluctuation of the information modulates all its characteristics. The most relevant and particular patterns that the system throws detonate and switching on sound events as they happen and create the structure of the composition on the fly. Also, the wind speed and direction value serves as an axis to control the spatialization logic of the instruments in a 15-channel system organized in a Cartesian manner.

This piece is part of a series of investigations on the performativity of different physical phenomena and the ability of sound to create multi-modal experiences.

Commissioner for the Sound Experimentation Space (EES) of the MUAC under the curatorship of Marco Morales.

PRESENTED AT_

MUAC [MX]
316 Galería Sonora [MX]
Radical Openess, Linz [AT]

+ INFO_

<https://github.com/interspecifics/Aire>

<http://interspecifics.cc/work/aire-cd-mx-2016/>

<https://muac.unam.mx/exposicion/aire>



TUNING OF RIVER (2017)



Tuning of River is a mechanical-acoustic instrument inspired by cosmogony and Mapuche musical structure. In it, a group of cultrún drums is controlled by drops of water from the Calle Calle River, which is the axis of the waterway of the Ríos region in Valdivia, Chile. The Cultrún is a local and ancient instrument used to guide ritual greetings directed at the elements of nature. For the Mapuche, each ritual is a possibility for the creation of a new rhythmic pattern, frequently improvised, within a 4/4 signature, which refers to the four elements, the four seasons of the year, the four points of the compass, a sacred number that echoes animistic beliefs within their culture.

The instrument consists of twelve cultrúns, all designed by different local artisans and representing a unique voice within the ensemble, each contributing a different tone and texture depending on the choice of material and method of construction. With the aid of motors controlled by water sensors, the system achieves a generative composition, developed through a reactive programming code according to the logic of the dripping of water driven by peristaltic pumps. The code has 4 states for each of the 12 drums, 48 different states that allow a dynamic piece that reflects the materiality itself in the changes of the river.

Tuning of River was conceptualized and developed during a collective laboratory attended by more than 50 children and youth from different schools in Valdivia, Chile. In a space built inside the public library where we work together in a series of music, electronic, programming, and research workshops over a period of one month.

PRESENTED AT_

Cecrea, Valdivia [CL]
Centro Nacional de Arte Contemporáneo Cerrillos, Santiago [CL]
Museo de Arte Contemporáneo, Valdivia [CL]
Centex, Valparaíso [CL]

+ INFO_

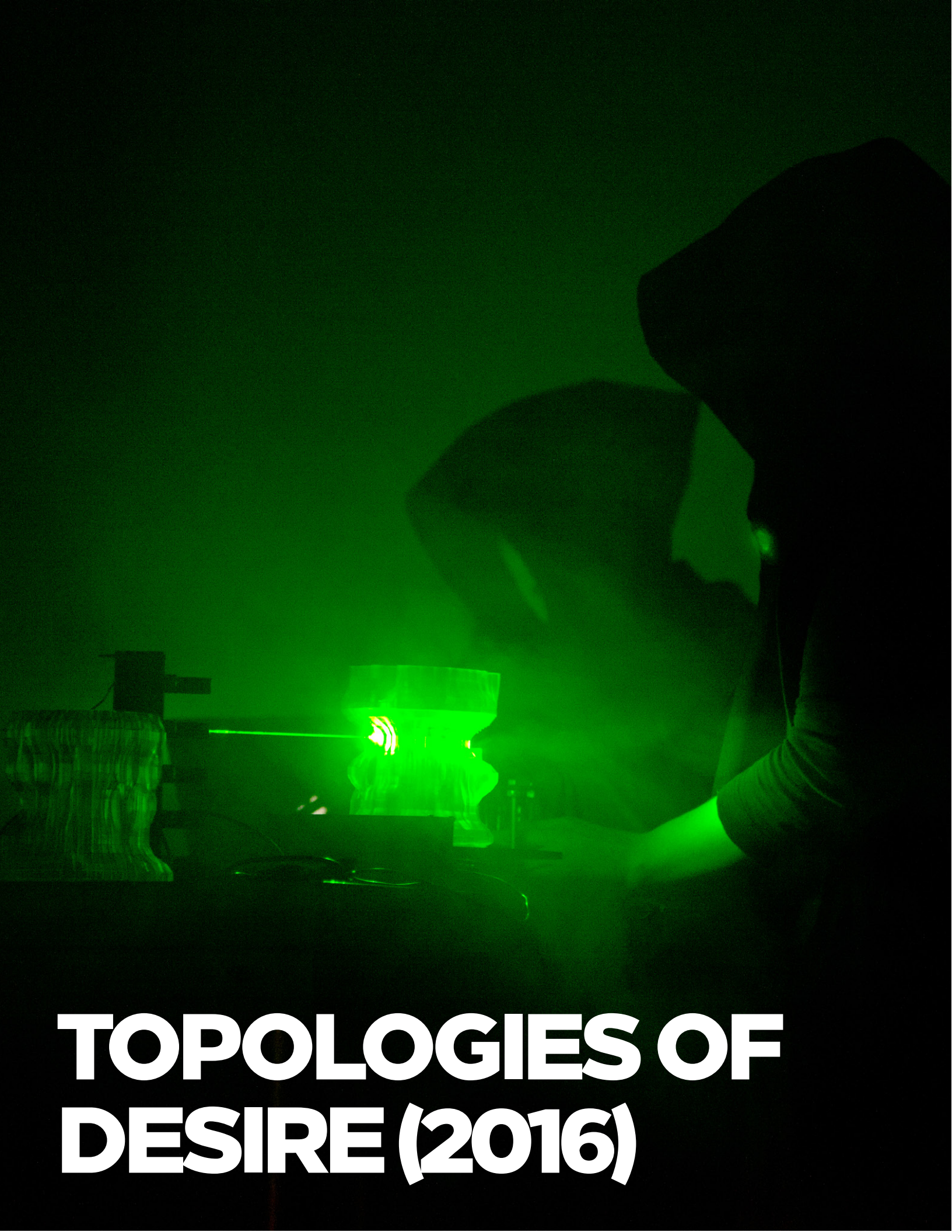
<https://vimeo.com/237334602>

<http://interspecifics.cc/work/sintonia-del-rio-2017/>

<https://www.flickr.com/photos/microhom/albums/72157686439186634>

<https://www.youtube.com/watch?v=BicvKdzDJM4>

<https://soundcloud.com/lessnullvoid/registro-sonoro-sintonia-del-rio>



TOPOLOGIES OF DESIRE (2016)



Topologies of Desire is a live act that explores the effects of psychoacoustics on the human body. It makes use of phenomena such as brain entrainment and heart coherence –used in different types of neurological and physiological therapies– to show the abilities of sound as physical energy to detonate higher states of consciousness.

An open call brought together 12 people related to the study of consciousness, who shared their strategies for constructive transformation through a 5-minute meditation. This moment of intention was recorded with electroencephalographic (EEG) technology - electrical activity of the brain - and subsequently subjected to pattern analysis. The resulting data, potentially relations between the intention of one person to another, were converted into 3D printed topologies, creating a kind of disk-totems that contained in each of its layers the living information of that intention.

During the concert, the totems are read by laser readers, built to be used as an instrument/source of a collective sound act, a ritual with elements of ancient practices but compounded with current technological tools within the aesthetics of techno-shamanism.

Commissioned for the Triennial Liquid Project of the Alumnos47 Foundation under the curatorship of Jessica Berlanga.

PRESENTED AT_

MUAC [MX]
Centro Cultural de España [MX]
Alumnos47 Móvil [MX]
Festival Bains Numériques, Paris [FR]

+ INFO_

<https://vimeo.com/178385468>

<http://interspecifics.cc/topologia/>

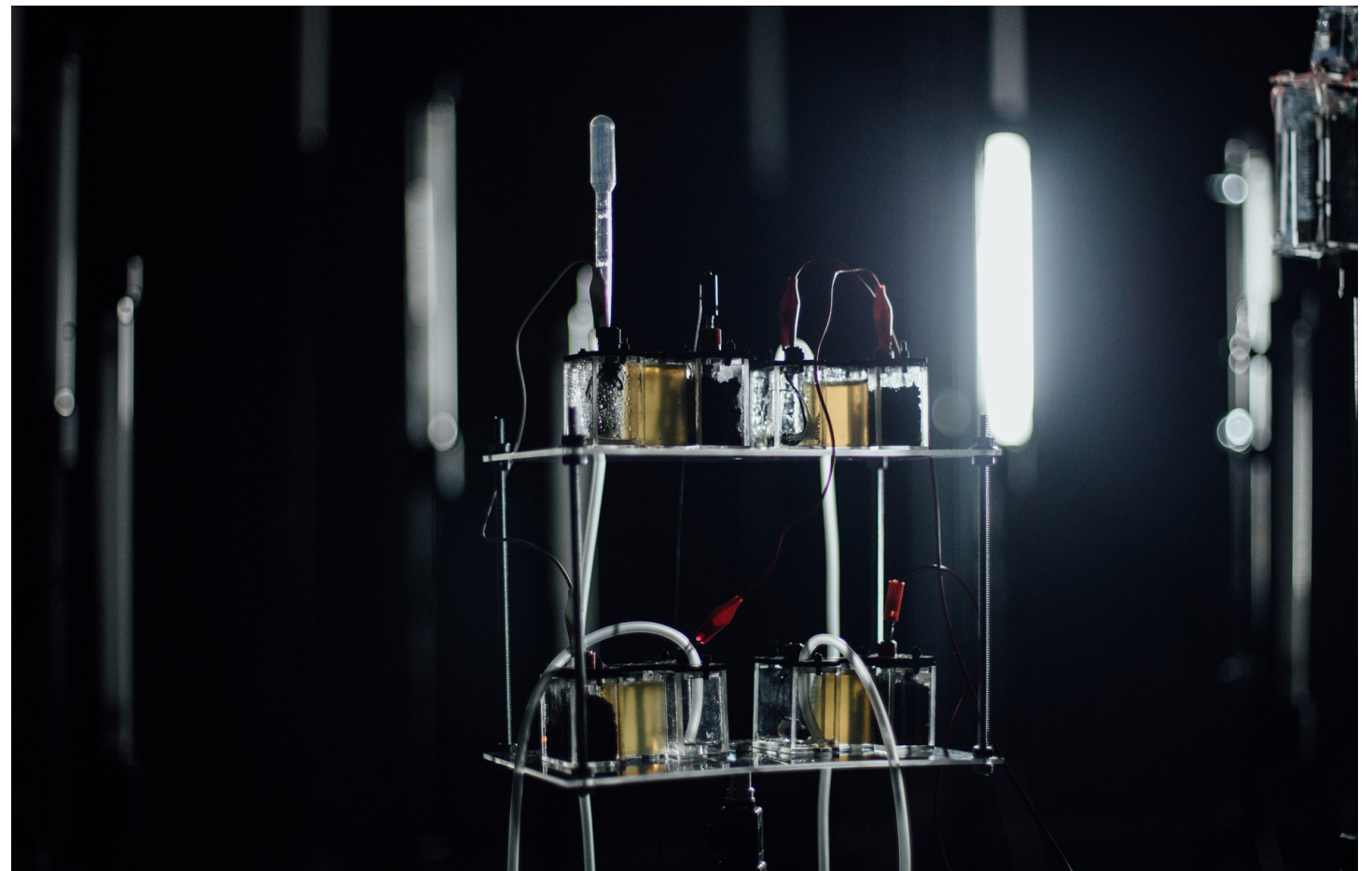
<http://flic.kr/p/aHskDMZX1Z>

<https://soundcloud.com/lessnullvoid/topologias-del-deseolive>

<https://soundcloud.com/lessnullvoid/extract-topologies-of-desire-live-at-bains-numeriques>



MICRO-RHYTHMS (2016)



In a reaction caused by the reduction of oxygen in their environment, certain microorganisms evolved to breathe thanks to an electron transfer mechanism. How could this energy represent a new sound gesture based on non-human rhythmic logic?

Microrhythms is a bio-driven sound installation in which small voltage variations inside microbial cells are turned into light events using fluorescent lamps. Subsequently, an algorithm written in Python uses Raspberry Pi cameras provided with a Coral GPU accelerator and Computer Vision to detect light changes and send data to an assisted learning machine that creates with them a graphic score for its musical performance.

The cells are fed using soil samples from each place where the piece is presented, with non-pathogenic bacteria that clean their environment and produce the micro signal that triggers all the processes in the piece. Understood as an inter-species instrument, the installation amplifies the micro voltage produced by these microscopic organisms and transduces their oscillations into pure electronic signals with which they create an audiovisual system that evokes the origins of encoded language.

Commissioned by the Medellín Art Museum under the curatorship of Jorge Barco.

PRESENTED AT_

**Museo de Arte Moderno de Medellín
[CO]
DAAD Gallery Berlin [DE]**

+ INFO_

vimeo.com/190665110

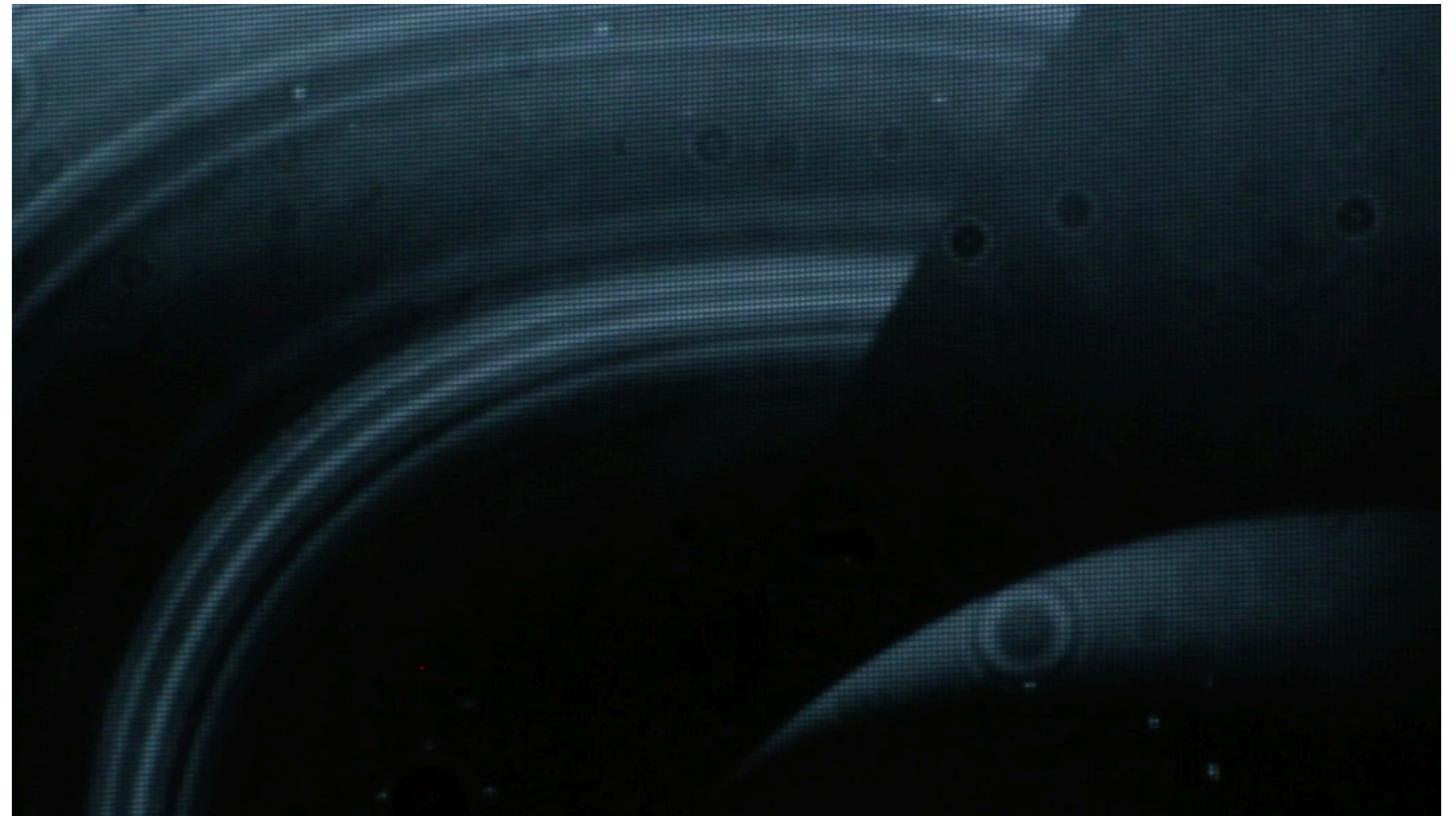
github.com/interspecifics/micro-ritmos

[http://flic.kr/s/aHskFUiDJM](https://flic.kr/s/aHskFUiDJM)

<http://interspecifics.cc/work/micro-ritmos-2016/>



SPACE, DATA & NOISE (2016)



Space, Data, and Noise is an audiovisual performance, using open data from NASA repositories, and radio recordings of inter-mission communications. It is an immersive performance inspired by the aesthetics of big data and computer noise.

To produce the performance, a Data API was developed that extracts the most relevant events from among the databases. This API allows us to serve OSC messages to coordinate and synchronize sound production in different characteristics. Produced by responsive SynthDefs in Supercollider and physical instruments, all controlled by OSC messages and converted to Voltage and Midi Controls. The visuals programmed in OpenFrameworks respond to the dynamics of the frequency ranges of the sound.

The live act was presented first presented, during the MusicMakers Hacklab: Immersive Invention of the Mutek_MX Festival.

PRESENTED AT_

**MusicMakers Hacklab: Invencción Inmersiva. Mutek_MX. Laboratorio Arte Alameda [MX]
Museo de Arte Contemporáneo, Santiago [CL]**

+ INFO_

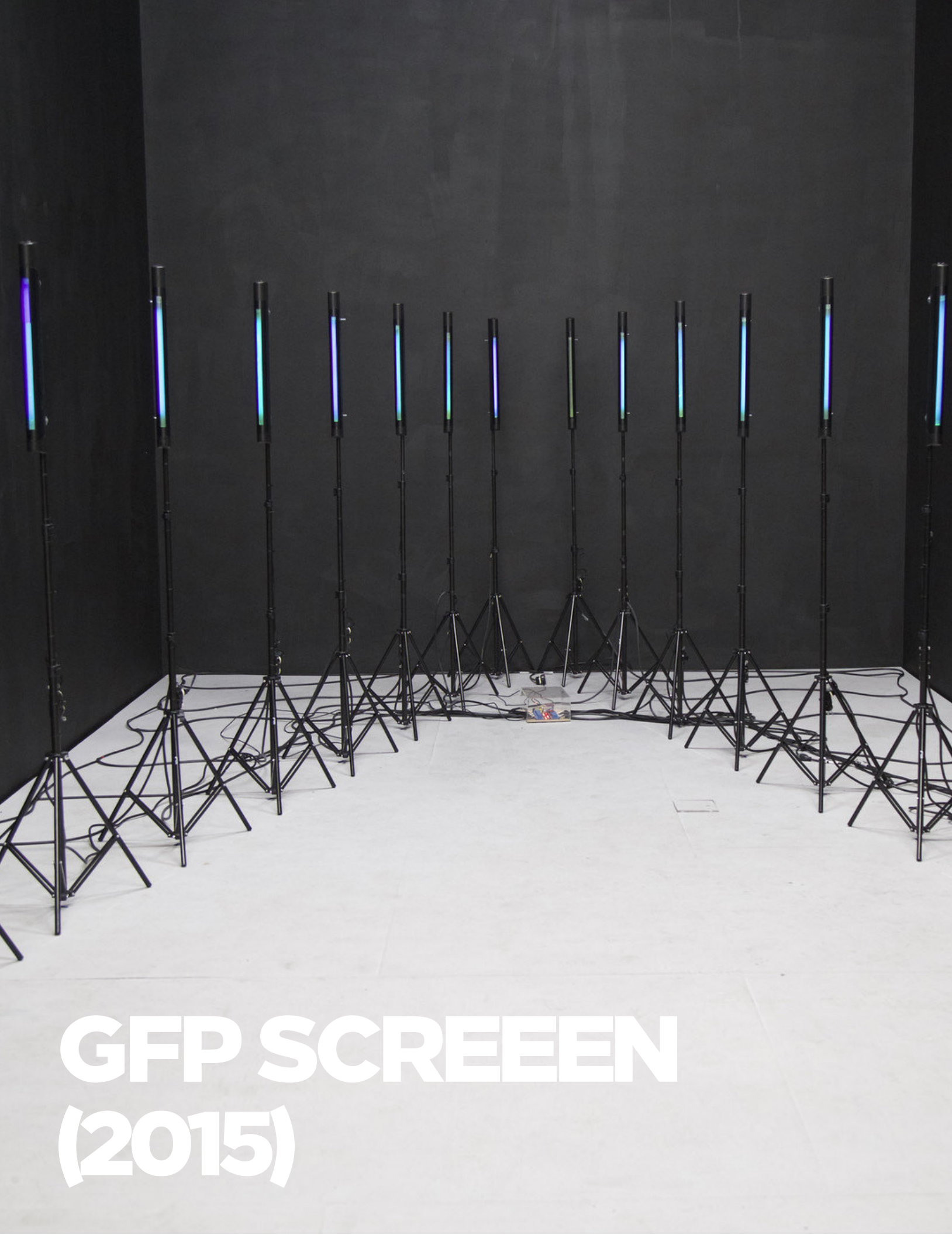
<https://vimeo.com/190128254>

<https://github.com/interspecifics/visuals>

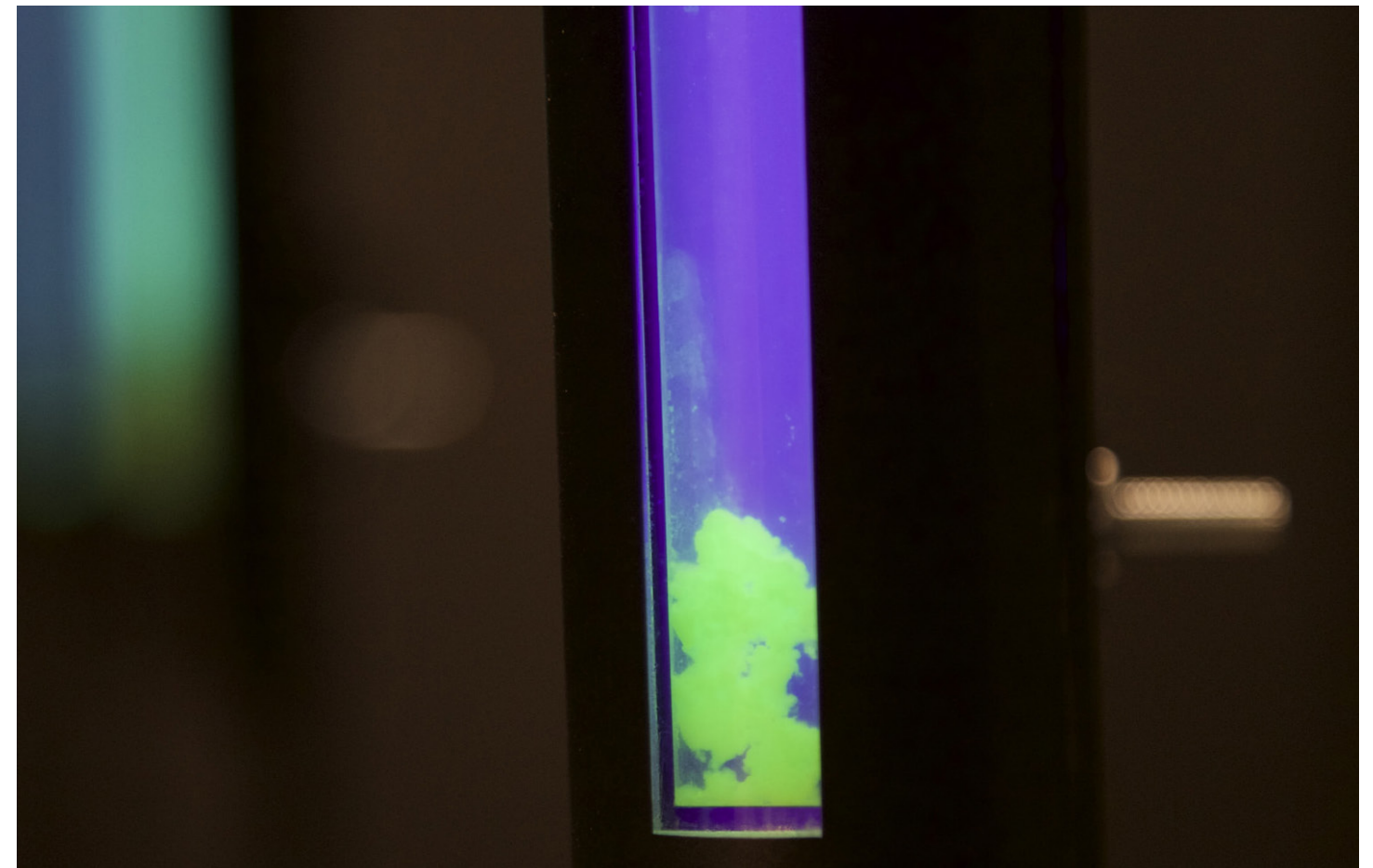
<https://www.flickr.com/photos/micro-hom/albums/72157674326834051>

<https://soundcloud.com/lessnullvoid/space-data-and-noise-musicmakers-mutekcdmx>

<http://mutek.mx/es/invencion-inmersiva/>



GFP SCREEN (2015)



GFP Screen is a 16-bit binary screen, built with blacklight lamps that activate the fluorescence of the E.coli bacteria in response to a light stimulus in the 440-nanometer range. The GFP protein is responsible for this fluorescence and gives its name to the piece.

In this screen, poetry written from a bacterial perspective and directed to beings capable of reading in binary is shown. This poem was written using the Random Poetry technique, which uses random Google searches on a topic, in this case: humans.

GFP Screen collects the main results and organizes them in two-character ASCII code sequences every two milliseconds and displays them on the screen.

This project addresses the expression of the material agency of microorganisms through light and the capacity of light itself as a means of information transmission.

E.coli's love poem:

Human: they are not real, they are animals, they are free, they are underestimated,

they are among us, they are Cthulhu, like a virus.

Human: we need air, we need love, we need water, we need to belong to.

Human: services, rights, feelings, thoughts, processes, Dreams.

Human: a sense of smell, sense of time, sense of I ask, sent to Mars, produces methane, protostomes or deuterostomes, protecting the environment, destroying everything.

Human genes: BRCA2, CFTR, MTCYB, DMD, GAPDH, HBB, HIST1H1A A

PRESENTED AT_

**Uneso. Flux 2015. Yucatán [MX]
International book fair in Guadalajara.**

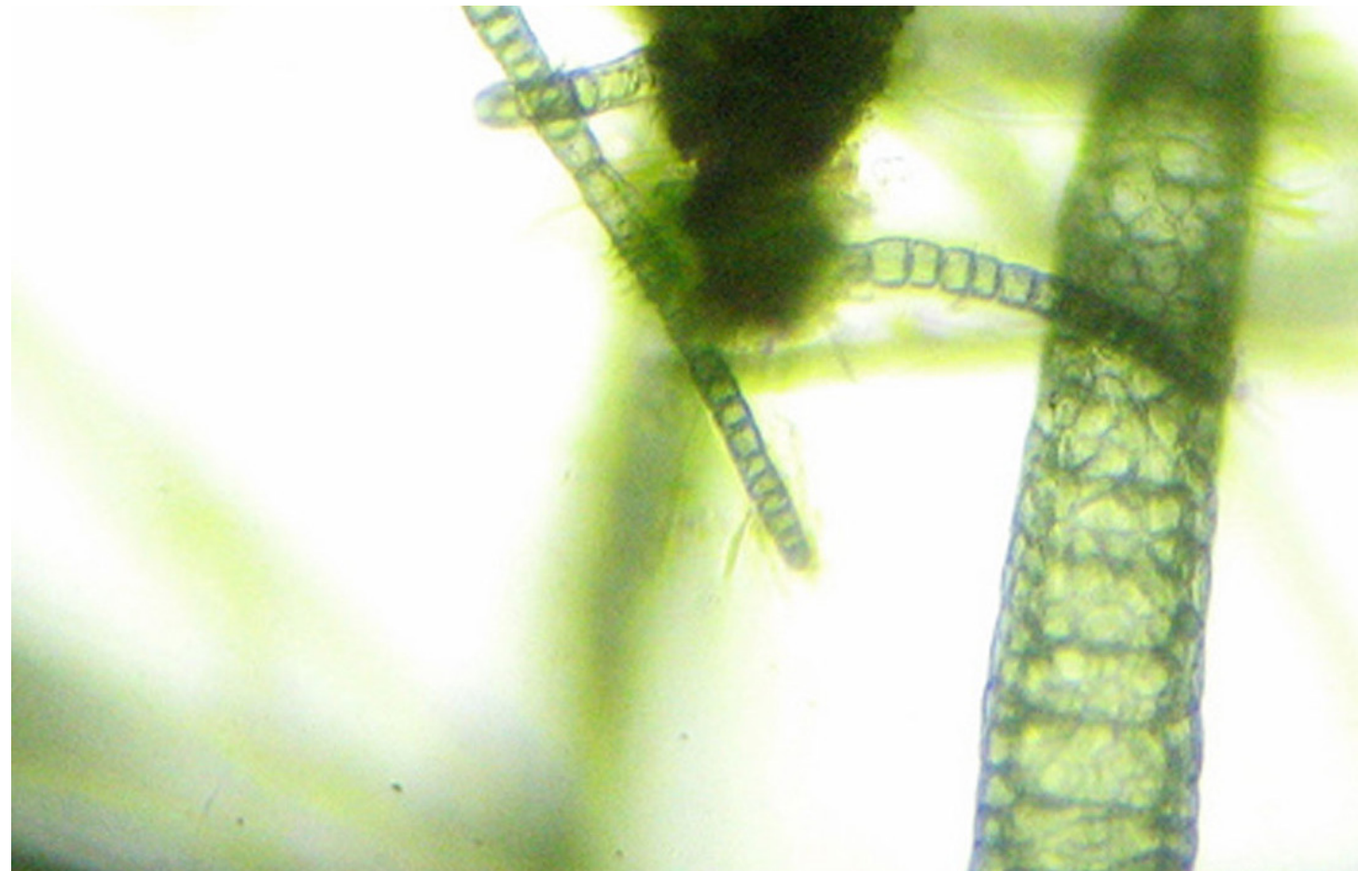
+ INFO_

<https://vimeo.com/154761739>

github.com/interspecifics/gfp



NON-HUMAN RHYTHMS 3: RIO (2015)



During the fifth edition of the Novas Frequencias Festival in Rio de Janeiro, we were invited to facilitate a collaborative laboratory focused on the sonification of bacteria from different beaches in the city. To do this, we made an expedition to three of the most contaminated areas: Flamengo, Arpoador, and Lemi. In these areas, we collect water samples that we then grow in microbial fuel cells to connect to different audio synthesizers.

For the lab, 10 local artists were selected through an open call, and for a week we worked together building a performance generated by an interface between the bacterial signal and their sound instruments. The result was a live act called Non-Human Rhythms presented as part of the festival.

PARTICIPANTS_

Biônicos

David Charles Cole

Felipe Ridolfi

Gama

Henry Schroy

Negalê Jones

peppe de souza

Re Sil

PRESENTED AT_

Casa Rio [BR]

+ INFO_

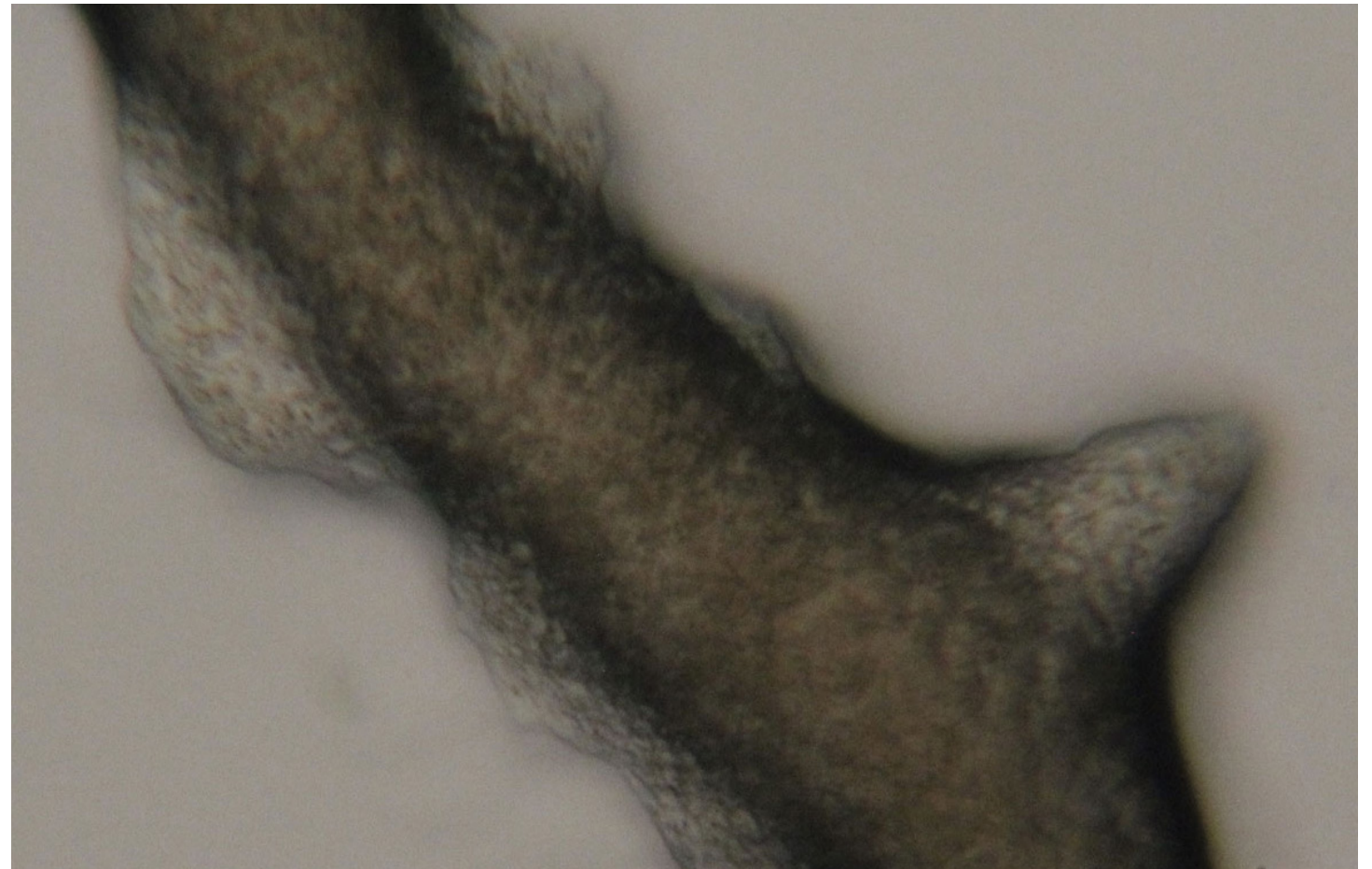
<http://www.novasfrequencias.com/2015/blog/>

<https://soundcloud.com/lessnullvoid/sets/non-human-rhythms-3>

<http://blogs.estadao.com.br/link/tecnologia-traz-novos-sons-para-a-musica>



NON-HUMAN RHYTHMS 2: PHYSARUM (2015)



Non-Human Rhythms 2 is the second release in a series of recordings featuring different microorganisms and their bioelectric activity translated into sound. 4 tracks of a *Physarum polycephalum* sonification developed at Bauhaus University as part of the Phychip project. *Physarum polycephalum* is a single-celled organism, an amorphous yellowish mass in the plasmodial phase of its life cycle that can spread on a wide range of surfaces such as plastics, metals, glass, and agar.

Two main approaches were developed for this sonification: the first focuses on the organism's analog behavior (bioelectric activity) and the second on optics-based pattern recognition software. These two systems allow the creation of a bio controller for auditory visualization purposes where common musical structures such as texture, rhythm, and phrasing can be selected, using the bioelectric activity feed as the system actuator.

In collaboration with Theresa Schubert from Bauhaus Weimar University and the Phychip project team under the direction of prof. Andrew Adamzky.

PRESENTED AT_

Spektrum, Berlín [DE]
Acud Macht, Berlín [DE]
Bright Collisions Symposium, La Haya [NL]
Inoculum@CLB, Berlín [DE]
Centro Cultural de España [MX]

+ INFO_

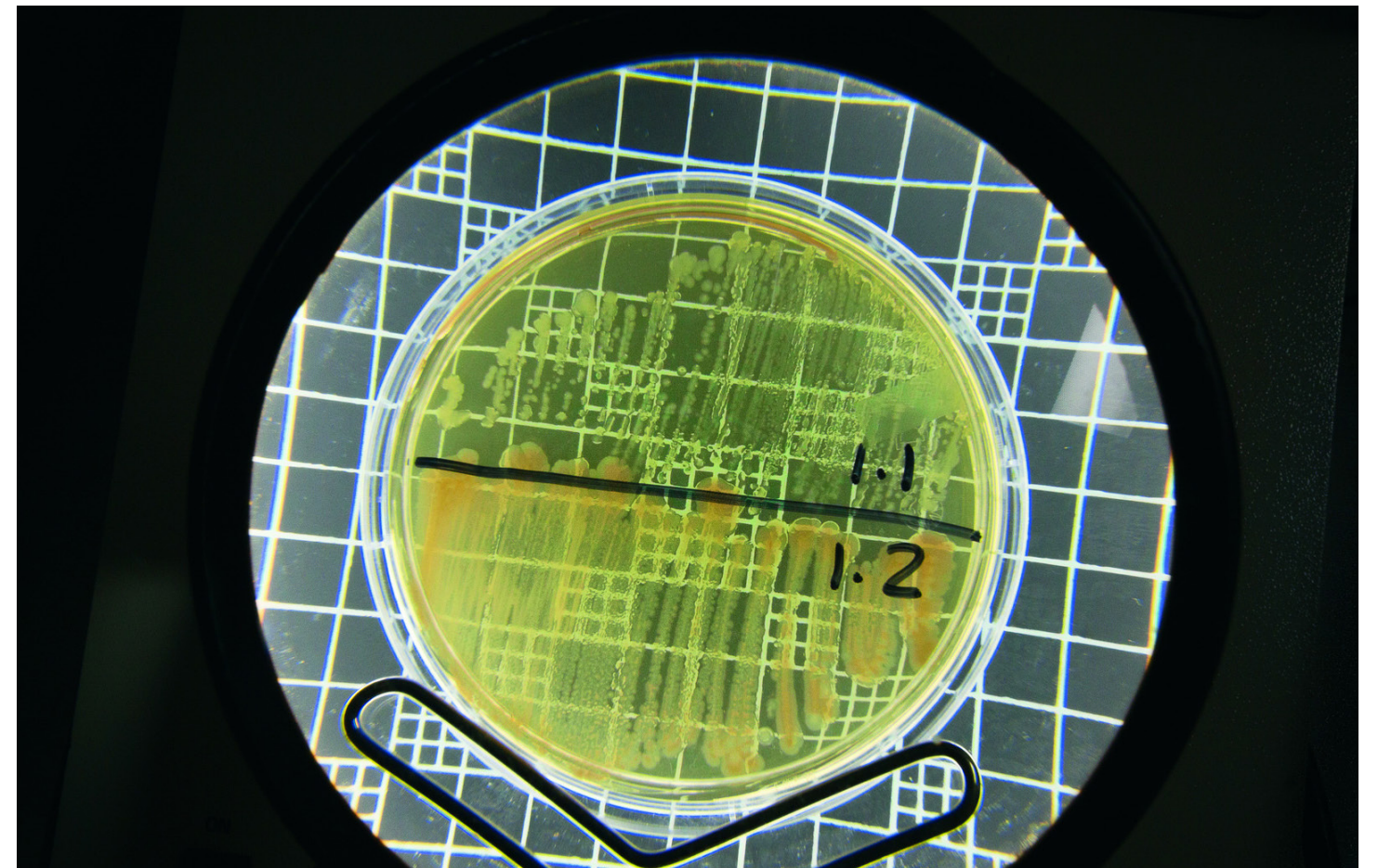
www.phychip.eu

<https://soundcloud.com/lessnullvoid/slime-mould?in=lessnullvoid%2Fsets%2Fphychip-slime-mould-music>

<http://www.wired.com/2015/10/listen-slime-mold-sing-song/>

bit.ly/20ewhVE

NON-HUMAN RHYTHMS1: GEOBACTER (2015)



Non-Human Rhythms 1 is the first in a series of recordings featuring the bioelectric activity of three different organisms translated into sound. 30 minutes of signals originating from a DIY microbial cell, with a consortium that includes a knowledge of the bacterium *Geobacter*.

The cells consist of two electrodes separated by a semipermeable membrane immersed in an electrolytic solution and convert the energy of metabolic reactions into electrical energy. The bacteria inside generate some electrical potential by breaking down waste and sewage and continue indefinitely as long as there is a food source.

In collaboration with Juan David López Hincapié and Adrián Rodríguez García Doctor of Technological Development in Electrochemistry in Mexico (CI-DETEQ).

PRESENTED AT_

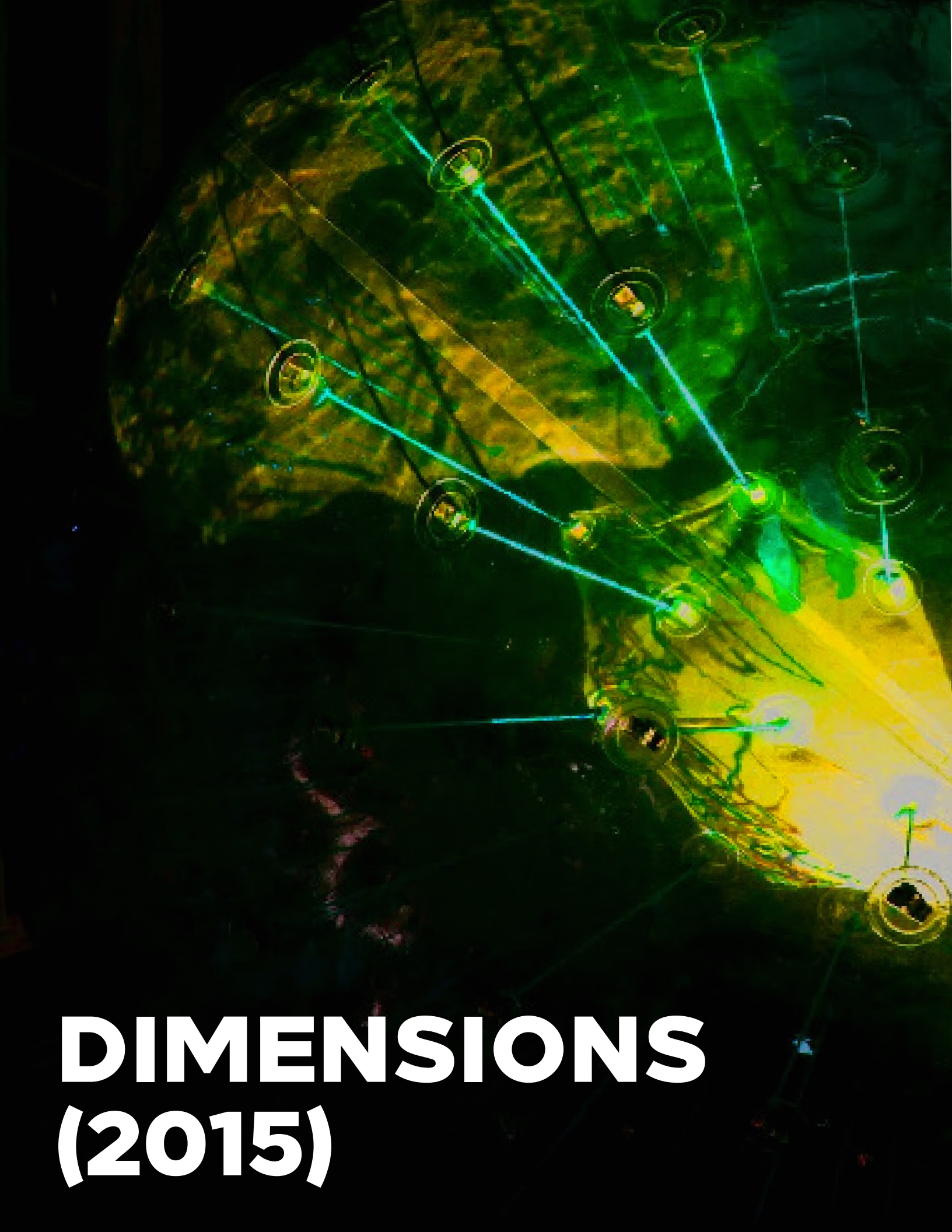
**Acud Macht, Berlín [DE]
Fact, Liverpool [UK]
TJinCHINA, Tijuana [MX]
Dorkbot, San Diego [US]**

+ INFO_

<https://soundcloud.com/lessnullvoid/nonhumarhythms1>

<http://thecreatorsproject.vice.com/blog/dirty-beats-hear-music-generated-from-bacteria>

http://www.vice.com/es_mx/tag/musica%20de%20las%20bacterias



DIMENSIONS (2015)



Dimensions is brain activity sonification and visualization system, which uses data peaks in an electroencephalogram as topographic values. The main technique is programmed in OpenFrameworks, Supercollider, and Puredata, to map the data from each electrode of an EEG headset to represent the dominant frequencies in visual and sound terms, looking for possible power, phase or trigger correlations.

The system allows the user to be aware, in real-time, of the energy movement of the brain and is presented as an augmented reality installation that uses neuro-feedback principles in which the viewer experiences the performative materialism of her own brain.

Awarded second prize at the HackTheBrain 2015 hackathon, hosted by the Waag Society and the Donders Institute in Amsterdam. In collaboration with Thömas Beelen and David Goedicke from the University of Twente, The Netherlands and Clemens Bast from the Bauhaus University, Germany.

**PRESENTED AT_
Waag Society, Amsterdam [NL]
TodaysArt Festival, La Haya [NL]**

+ INFO_
<http://interspecifics.cc/dimensions>

<http://interspecifics.cc/downloads/htb.pdf>

<https://github.com/Lessnullvoid/PotentialAccionalAccion>



ACTION POTENTIAL (2015)



Action Potential is a research project on neuroesthetics, a recent sub-discipline of empirical aesthetics, which studies the possible relationships between art perception and bioelectric signals produced in the brain in terms of active listening and observation.

The first experiments took place during the commemorative exhibition of the poet and art critic Octavio Paz at the Palacio de Bellas Artes in Mexico City. The operation consisted of recording the bioelectrical activity of 20 volunteers of different ages and backgrounds using a brain-computer interface. Participants actively observed the pieces of art while listening to a text by Octavio Paz about the work.

Once the sampling is complete, we convert the signals into sound using the OSC protocol in Pure Data, and in computer graphics through Processing with the design of an algorithm for data interpretation. Action Potential is a multidisciplinary approach aimed at aiding the exploration of patterns during data analysis in the aesthetic experience.

In collaboration with Erick Fernando González Castañeda and Alejandro Antonio Torres García, led by Dr. Luis Villaseñor Pineda and Dr. Carlos Reyes García of the National Institute of Astrophysics, Optics and Electronics (INAOE) for interpretive advice and spectral analysis of the recorded samples .

PRESENTED AT_

**Waag Society Amsterdam [NL]
Fact Liverpool [UK]**

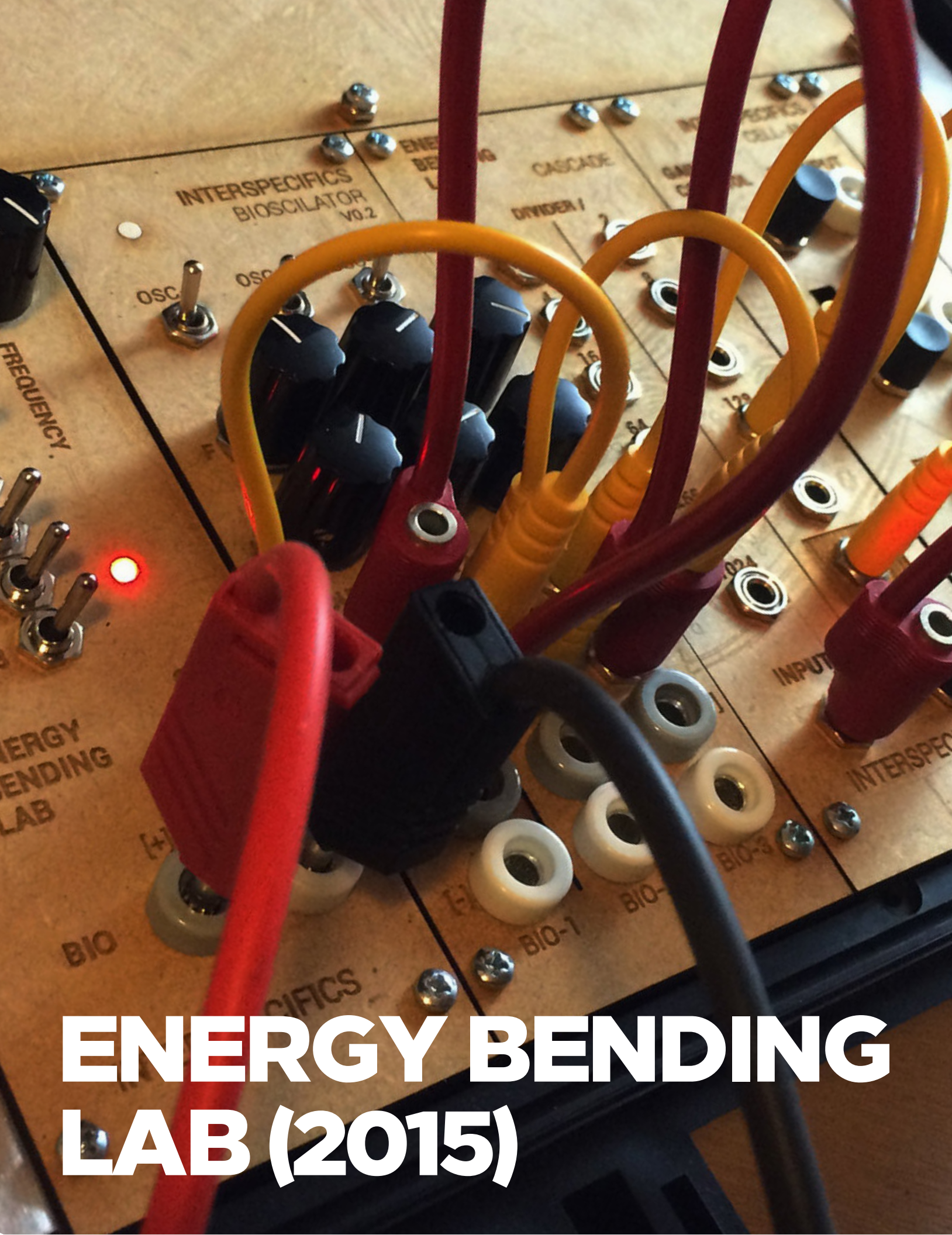
+ INFO_

<http://interspecifics.cc/potencial>

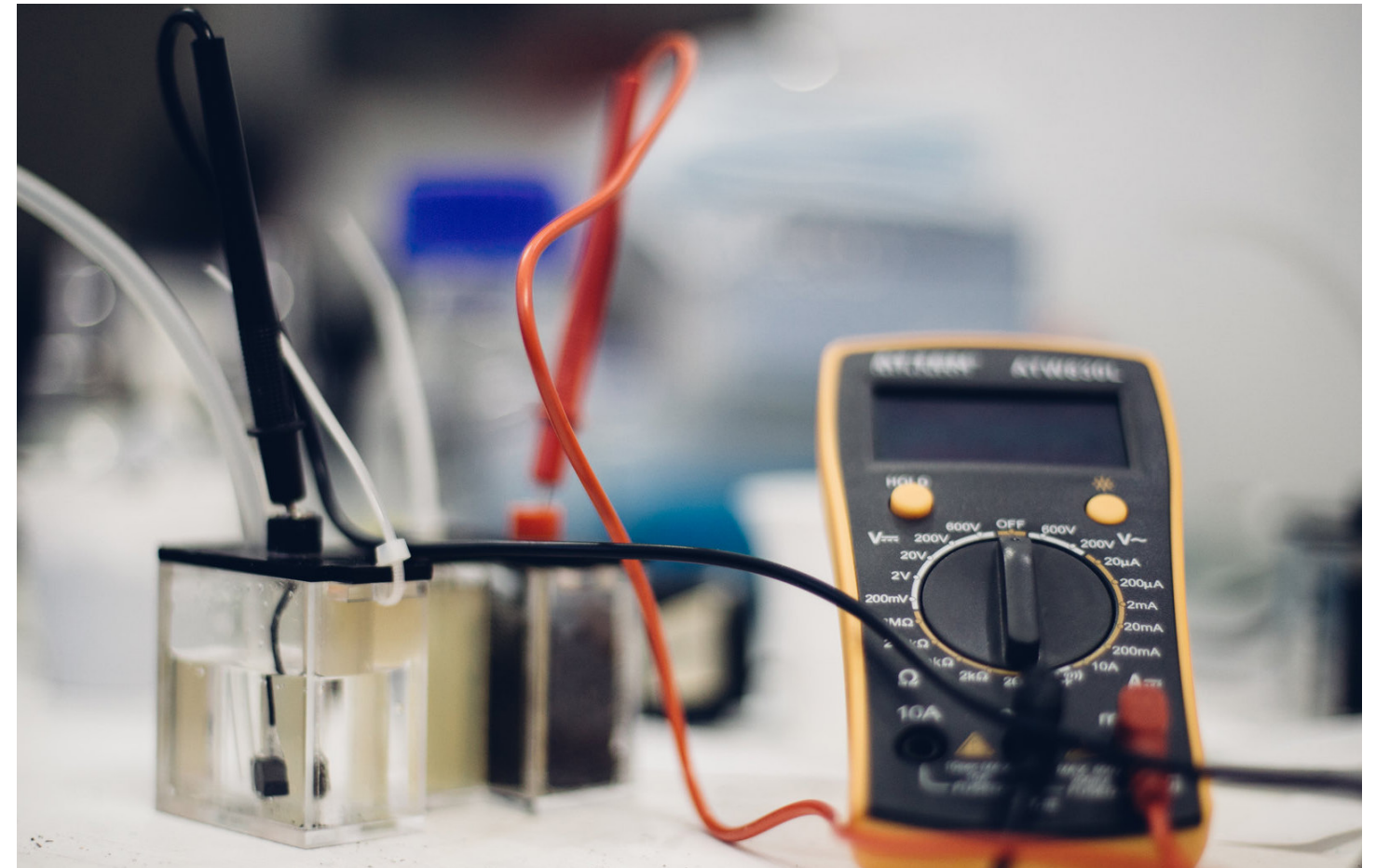
<https://vimeo.com/119816309>

[https://soundcloud.com/interspecifics
bit.ly/1P3WziU](https://soundcloud.com/interspecifics/bit.ly/1P3WziU)

<https://github.com/Lessnullvoid/PotencialAccion>



ENERGY BENDING LAB (2015)



Energy Bending Lab is an instrument made up of a set of self-designed modular synthesizers and other transduction tools, which creates a real-time sonification of the electrical properties of different bacteria.

The interface, conceptualized as a system of interaction between species, amplifies the micro voltage produced by these microorganisms and transduces their oscillatory characteristics into electronic signals that tune the internal clock of the entire system to create unexpected sound patterns arrays.

The object explores the relationship between waves, matter, and frequencies, in search of an understanding of our reality, illustrating the underlying order of the universe and human consciousness that seems to be closely related to vibration.

The ENL was conceived during a 2-month residency granted by ECAS (European Cities for Advances Sound), organized by the Cimatics festivals in Brussels, TodaysArt in The Hague, and Insomnia in Tromsø, and built during the trip using different digital manufacturing laboratories by All Europe.

PRESENTED AT_

**Bauhaus University, Weimar [DE]
TodaysArt Festival, La Haya [NL]
ICAS Festival, Dresden [DE]
Laboratorio Arte Alameda [MX]
Artificial Intelligence Conference
York [UK]
Enter state, sensing the natural
world. Washington [US]**

+ INFO_

<http://www.interspecifics.cc/->

<http://www.interspecifics.cc/-/category/modules/>

bit.ly/1nv7M4D

<http://www.ecasnetwork.eu/AiR-Interspecifics.php>



B10S ARTISTIC EXPLORATION PROGRAM IN LIFE SCIENCES (2015)



Beyond exploring the broad theoretical definition and origins of bio-art in Western culture, in B10S we analyze the of our practice in the emerging context of Latin American society.

What are the implications of taking research elements inherent in science to undertake empirical practices within art?

What are the appropriate tools for these explorations, and how can this knowledge be distributed in a collective experience?

B10S is a space to explore these questions and address the epistemological scope that arises from DIY multidisciplinary practices. A place where knowledge is collectively built, development expanded, and opportunities outreach.

During 2015 we carried out three laboratories with more than 40 participants. The labs were inspired by neuroplasticity, bioelectricity, and neuroscience. All participants, from a wide range of ages and backgrounds, were selected through an open call, and each workshop built their prototype.

Commissioner for the educational program of the Alumnos47 Foundation under the curatorship of Aisel Wicab.

PRESENTED AT_

**Fundación Alumnos47 [MX]
Centro Cultural de España [MX]
Universität der Künste Berlin [DE]**

+ INFO_

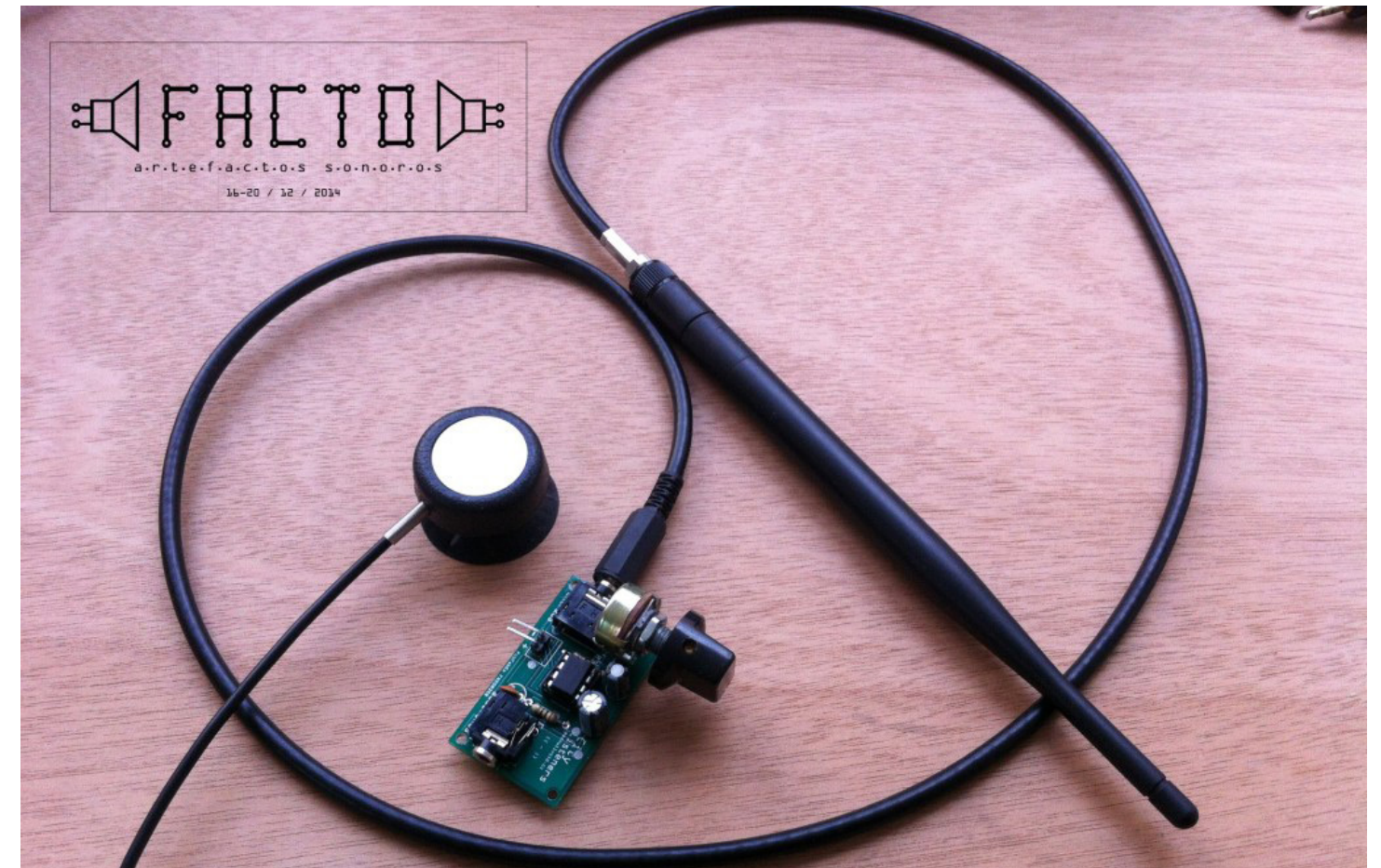
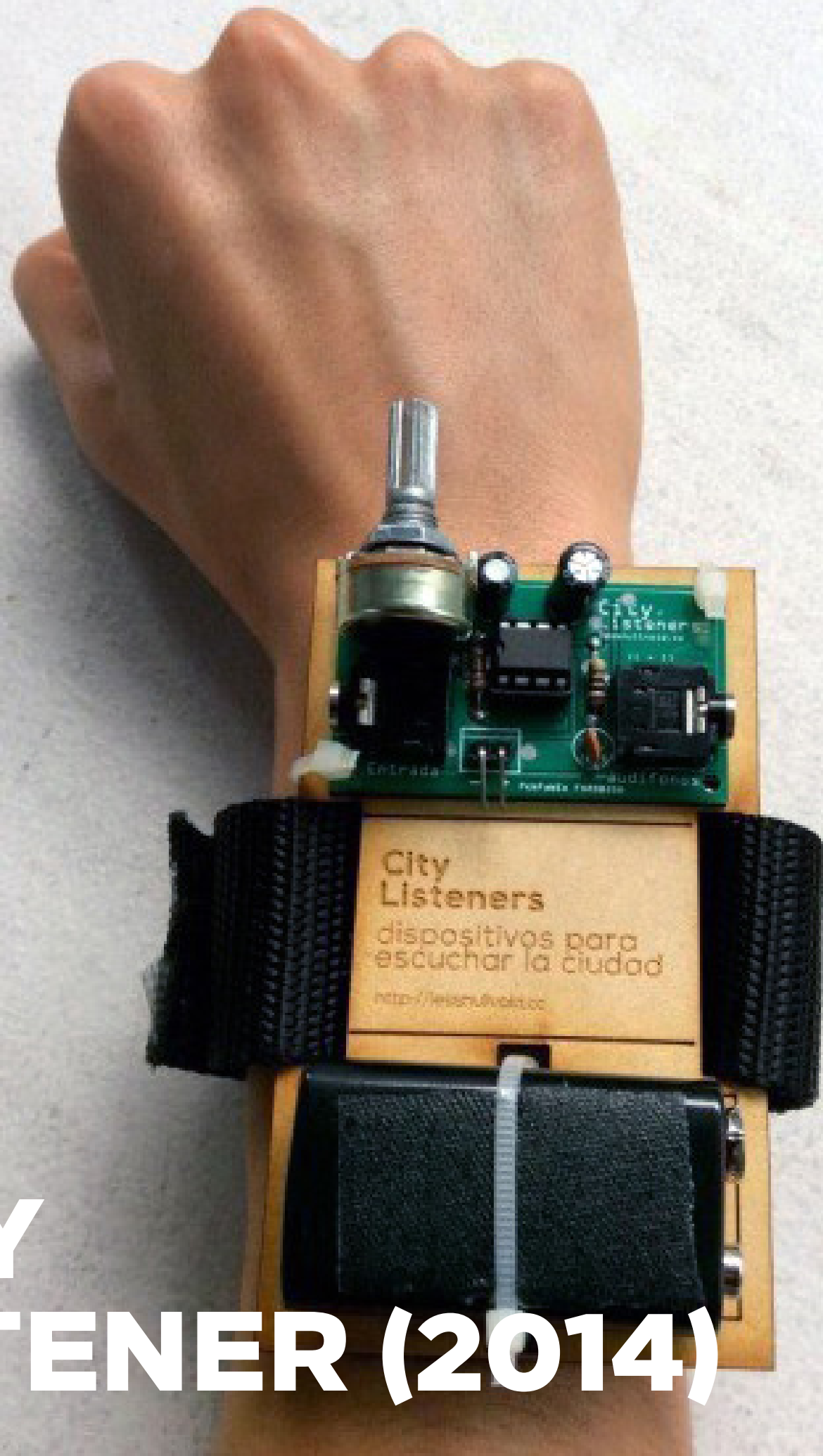
<http://interspecifics.cc/work/expedu/>

<https://www.youtube.com/watch?v=-8JWLJG3GhdE>

<https://www.youtube.com/watch?v=h-9JI8m1ALvQ>

bit.ly/200bmQT

CITY LISTENER (2014)



CityListeners is a device designed to navigate urban electromagnetic interference sources. It uses interpolation as a resource to address the plasticity of electricity, at least from one of its physical representations: sound. The circuit is designed to transduce these signals into sound with the help of an electromagnetic attraction system and an audio amplifier.

These interferences are presented as part of an imperceptible soundscape given the speed and saturation of signals that exceed our current sensory capacity. The device is first a drift tool, and also an instrument of directed listening within the context of the live act.

PRESENTED AT_

**Facto 2014 [MX]
Mextrópoli 2014 [MX]**

+ INFO_

<http://interspecifics.cc/work/citylisteners-2014/>

<https://soundcloud.com/lessnullvoid/citylisteners-emf-divice>

<https://soundcloud.com/lessnullvoid/residual-electromagnetism-live-act-extract>



PULSU(M) PLANTAE (2011-2014)



Pulsu(m) Plantae empirically analyzes the mechanisms that plants use to communicate and their biological processes as an intangible manifestation of communication for our senses. The project proposes the design of a sound prosthesis based on the biofeedback principle, a technique focused on raising awareness of the physiological functions of an organic body and uses instruments to collect information on the functioning and cycles of these living systems. The prosthesis transduces the readings obtained in a sound synthesis process that gives the plants an abstract voice. The patterns obtained from the study in different plant specimens would be the basis for the future design of a coded communication sound system.

Pulsu(m) Plantae's aesthetic conception is based on the idea of chaosmosis, coined by the Italian philosopher Félix Guattari, who proposes aesthetic subjectivity as a method of generating referential links. Pulsu(m) Plantae provides a series of interactive experiences where the technological application provides subjects with a tool to increase their perception capacity. The project seeks to analyze the non-tangible communication processes in networks of biotic elements, amplifying electrical signals that serve as transmission channels between the different types of specimens that make up the plantae kingdom.

In collaboration with Juan Carlos González, a biologist specialized in botany at the National Autonomous University of Mexico. With the support of the National Fund for Culture and the Arts Mexico.

PRESENTED AT_

**Isea 2012 Albuquerque [US]
Mutek_MX [MX]
Transitio_MX [MX]
U. Federal Rio de Janeiro [BR]
New Musical Interfaces [CA]
New Music Festival Vancouver [CA]
Upgrade San Diego [US]
Museo Tamayo [MX]
Fonoteca Nacional [MX]**

+ INFO_

<http://lessnullvoid.cc/pulsum>

<https://vimeo.com/62232734>

<https://soundcloud.com/lessnullvoid/pul-su-m-plantae>

bit.ly/1P3WziU