



KORT OM PIKSEL

Piksel er et nettverk av kunstnere og en årlig mediakunsthøst, basert i Bergen, som retter søkelyset mot forholdet mellom kunst og frie teknologier, arrangert for første gang i 2003. Festivalen involverer deltagere fra over et dusin land som utveksler ideer, utstiller og presenterer kunst- og software prosjekter, og gjennomfører workshops, performance og diskusjoner som både estetisk og politisk berører tematikken rundt fri programvare, åpen maskinvare og kunst.

Piksels grunntanke bygger på at kunstnere, på tvers av fagfelt, selv skal ha kontroll over sin egen produksjon. Derfor er redskaper som fri programvare / åpen maskinvare sett på som best egnet til dette. Internasjonalt er Piksel kanskje det viktigste møtestedet for aktører i dette feltet, som mer og mer fremtrer som en ny bevegelse med økende aktivitet og oppmerksomhet rettet mot seg. Under fjorårets festival samlet Piksel nærmere 70 deltagere fra 12 forskjellige land til 4 dager med utveksling av kunst, kode og idéer basert på fri kultur i praksis i Bergen sentrum. Piksel16 går av stabelen 24. - 27. november på ulike lokasjoner i Bergen sentrum, deriblant Østre, Lydgalleriet og Bergen Arkitektskole, og i samarbeid med en rekke lokale Bergensaktører.

Etter 14 års eksistens har Pikselfestivalen vokst til å bli et stort arrangement, som faglig er et av de viktigste møtestedene internasjonalt for kunstnere og utviklere som arbeider med fri programvare og åpen maskinvare. Kjennskapet til tematikk og nettverket som er samlet gjennom festivalaktiviteten har åpnet for at Piksel involveres i flere spennende samarbeidsprosjektet internasjonalt og lokalt utenfor festivalperioden.

Pikslo_Deep_Diving II 2016

I tråd med Pixsels ambisjoner om å lokalt forankre den elektroniske kunsten og Pixsels tematikk, ønsker vi i år å gjennomføre prosjektet Pikslo_Deep_Diving II 2016 som består av en workshop og et seminar.

Under festivalen i 2009 arrangerte Piksel workshopen 'bioelectronix for artist' under ledelse av Marc Dusseiller og Andy Gracie fra Hackteria(hackteria.org). Hackteria er et initiativ for open source og gjør-det-selv (DIY) biologisk kunst.

Dette er et felt der det internasjonalt har vært stor aktivitet de siste årene og vi har også bl.a. sett etableringen av The Finnish Bioart Society under ledelse av Erich Berger, i tillegg til at det har vært arrangert HackteriaLab workshops en rekke forskjellige steder, både i Europa og i Sør-øst Asia.

I tilknytning til Piksel festival 2014 gjennomførte vi prosjektet PikseteriaLab 2014 som bestod av en workshop som ble avholdt i forkant av og under festivalen. Den ble ledet av Marc Dusseiller sammen med Paula Pin, Adegredden Donora og Budi Prakosa fra Hackteria i Sveits og Lifepatch i Indonesia. Ca. 10 lokale deltagere var med og workshopen kulminerte med en presentasjon og konsert under festivalen.

Prosjektet var et viktig initiativ for Piksel og skapte solide kontakter og fornyet interesse for videre satsing på DIY Biohacking, syntetisk biologi og økologiske/klimarelaterte problemstillinger.

Til festivalen i 2015 inviterte vi kunstner Robertina Šebjanič fra Hackteria/Ljudmila til å lede en workshop med fokus på utforskning av marine miljøer og ulike typer forurensning relatert til livet i hav og sjø. Pikslo_Deep_Diving II 2016 blir en oppfølging og videreføring av dette prosjektet.



Pikslo_deep_diving part II.

Do-It-Yourself citizen science data bank on animal and plants sea biodiversity in Hordaland.

workshop conducted by Robertina Šebjanič (SI), Kat Austen (UK/D), Slavko Glamočanin(SI), Gjino Šutić (CRO) phd. Adeline Seah (Singapore), Dmitry Morozov (Russia), **Aisen Caro Chacin (USA) and Pikel team (main organiser) for PIKSEL FESTIVAL 2016.**

Piksel Festival
20th-27th November 2016

Keywords:

underwater sonda, sonification, sound pollution, underwater sound, underwater sound pollution, anthropogenic influence on the sea life, hydrophone, sonar, field recording, biodiversity of life in port in bergen, acoustic ecology, seafaring, animals, fish, jellyfish, nordic sea, DIY biology, DIY chemistry, anthropocene,

#marine-playground #marine-ecology #marine-sustainability #water-comunication #marine-inheritance #microplastic #luminescence #marine-environment #marin-technosphere #marine-healthcare #open-hardware #kids-marine #marine-climate #marine-research #marine-outofthebox #marine-DIYtechnologies #marine-connections #salt #fish-design

Last year Pikel hosted the workshop Pikslo_deep_diving part. I / / underwater interception of the nordic sea with great success. Interesting findings were covered



by the researcher team (artists and scientists) on microplastics and sound pollution at the Bergen shores. (more info at WIKI).

In 2016 we want to dwelve deeper into the knowledge of the sea biodiversity.

Pikslo deep_diving workshop departure point is to explore the impact of traffic on the sea life of the port.

Hordaland will be the main “object of research”. The workshop, focused on sea based animals and plants life, will develop new techniques to create and maintain a do-it-yourself citizen science data bank about the surrounding sea biodiversity. Taking Bergen port as an example of the Hordaland biodiversity.

An identification of species is a critical component of large-scale biodiversity monitoring programs and to move this into the domain of the people who live next to the sea is a way to reconnect with the environment and get interest for exploring the biodiversity of the marine habitat.

There are two possible approaches: micro and macro. First, by observation and second, by the development of a protocol on “how to make” a Do-It-With-Others DNA barcoding to classify marine species (plants and animals) in the marine environment.

The project encourages the interrelationship between sound, nature, and society, as a starting point to rethink nicer sonic environments for the animals living in the world’s oceans and sea’s.

The underwater sound pollution is the reality of recent development and industrialisation reflecting on the sea. Specially the upper level of the seas, where there is most of the living in the seas and independent by the level of the sonic pollution in the sea. We would also try to research the deep sea level to understand what is happening there.

World seas and oceans are presenting more than 70% of surface of Earth. 97% of it is saltwater, 2% is fresh water in the form of ice and only the remaining 1% is drinking water, which is distributed around the planet very unevenly.

The exploration of any ecosystem requires detailed study and observation. The ocean is the complex, challenging, and harsh environment on Earth and accessing it requires specially designed tools and technology. It has only been within the last 50 years that technology has advanced to the point that we can 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 imaginations and helping us to understand it also in the ways that we did not imagine them before.



Collaborators - team:

Robertina Šebjanič (SI), Kat Austen (UK/D), Slavko Glamočanin(SI), Gjino Šutić (CRO) phd. Adeline Seah (Singapore), Dmitry Morozov (Russia), Aisen Caro Chacin (USA) and Piksel team (main organiser).



A lot of knowledge regarding the seas in Norway we will also use are <https://www.nodc.noaa.gov/OC5/nordic-seas/> and in collaboration with the Marine Institute Bergen.

WORKSHOP

Workshop / project:

During the 5 day work-intensive interdisciplinary research, the four main mentors and collaborators would open the process of the exploration of the context of DIY biology, DIY chemistry and sound. An DIY laboratory in the context of the Piksel festival would be main environment of the development of the workshop. We will spend time out on the field trips to the fjords and surroundings in Bergen and also closely collaborate with the Marine Institute in Bergen to collect needed data. In the DIY laboratory we will work with the material we will gather at the field trips.

- Development of underwater sonda - for sound recording, measures of ph, temperature, etc, in the Bergen port.
- Development of a kit to see the genotype of the plants and animals.
- To continue with microplastic research.



- How does the traffic impact on the life of the Bergen port.

The structure of the workshop:

- field recording and exploring
- establishing a open source and open hardware lab for DIY biology, chemistry and sound research (building a DIY hydrophones, DIY microscope etc..)
- public discussions with local scientist, environmental scientist, fisherman's, artist and interested parties
- public presentation of the outcome - as what kind of DIY open source tools could be developed to help the environment
- critical design of seafaring
- public presentation in the form of an audiovisual performance or lecture performance (using all the data and tools developed and recorded during the workshop days)
- exploring and empathising with the sea-life's experience of sounds under water and trying to recreate the embodied experience of it for ourselves and the performance at the end of the workshop

Devices for using during the workshop research:

- Hydrophones and other technologies for acoustic monitoring of the sea
- SONAR (Sound Navigation and Ranging)
- hydro speakers (for underwater listening)
- microscope's to see what is happening on the micro level (DIY microscope)
- recorders for the recording the underwater sound (to connect the hydrophone with the recording device)
- go pro cameras for underwater video and pictures recording
- seismographs
- small electronic components for building devices



Some of references and interesting readings for the context of the workshop from the referential journal: **Soundscape The Journal of Acoustic Ecology** and NOAA's

Marine Life

The sounds produced by marine animals are many and varied. Marine mammals, such as blue whales and harbor porpoise, produce sounds over a wide frequency range, from less than 10 Hz to over 100,000 Hz, depending on the species of marine mammal. Many fish, such as the oyster toadfish and plainfin midshipman, and some marine invertebrates, such as snapping shrimp, also produce sounds. Marine animals use sound to obtain detailed information about their surroundings. They rely on sound to communicate, navigate, and feed. Marine mammals, such as dolphins, use sound to locate and identify objects such as food, obstacles, and other whales. By emitting clicks, or short pulses of sound, and listening to the echo, dolphins can detect individual prey and navigate around objects underwater. (<http://www.dosits.org/science/soundsinthesea/commonsounds/>)

Cnidaria - jellyfish hearing under the water

At present there is still a dearth of research and understanding about how Cnidaria—with their ancient evolutionary history—actually perceive and adapt to their environment through acoustic energy and vibration, and how this has enabled them to survive over the eons despite their 'simplicity.'

Marine mammal calls can actually increase ambient noise levels by 20-25 underwater dB in some locations at certain times of year. Blue and fin whales produce low-frequency moans at frequencies of 10-25 Hz with estimated source levels of up to 190 underwater dB at 1 m. The ambient noise levels at frequencies of 17-20 Hz increase off coastal California during the fall and winter months due to blue and fin whale calls.



from the Soundscape The Journal of Acoustic Ecology

http://wfae.proscenia.net/journal/scape_6.pdf

Animal Sound Perception and Production Modes

From the preceding it is clear that many sea animals use sound in a variety of ways. Some animals use sound passively, others actively. Passive use of sound occurs when the animal does not create the sound that it senses, but responds to environmental and ambient sounds. These uses include: 1. Detection of predators. 2. Location and detection of prey. 3. Proximity perception of co-species in school, raft or colony. 4. Navigation—either local or global. 5. Perception of changing environmental conditions such as seismic movement, tides and currents. 6. Detection of food sources and feeding of other animals. 7. “Acoustic illumination” akin to daylight vision. Active use of sound occurs when the animal creates a sound to interact with their environment or other animals in it. Active uses include: 1. Sonic communication with co-species for breeding. 2. Sonic communication with co-species for feeding, including notification and guidance of others to food sources. 3. Territorial and social relations. 4. Echolocation. 5. Stunning and apprehending prey. 6. Alarm calls used to notify other creatures of the approach of enemies. 7. Long distance navigation and mapping. 8. Use of sound as a defense against predators. 9. Use of sound when seized by a predator (perhaps to startle the predator).

from the Soundscape The Journal of Acoustic Ecology

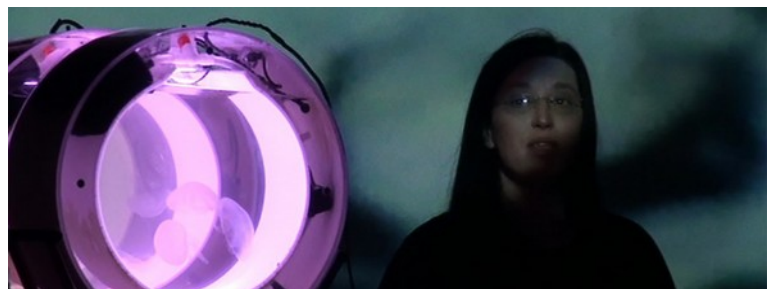
http://wfae.proscenia.net/journal/scape_6.pdf

INVITED COLLABORATORS BIOS

Robertina Šebjanič

<http://robertina.net/>

is working in the intersection between humanist and natural science. Her art – research focus is since several years oriented towards the project developed in the field of Living systems (bio-



art), AV performances, noise/sound art, installations and interactive ambiental responsive immersive environments. The context for her ideas and concepts is often realized in collaboration with other authors, and through interdisciplinary and informal integration embodies in her work. She is member of [Hackteria](#), [Ljudmila](#), [UR institute](#) and [Theremidi orchestra](#).

In collaboration with various art producers such as [DécaLab](#), [Kibla](#), [Ljudmila](#), [Kapelica Gallery](#), [Stadtwerkstatt](#), [Gallery Alkatraz](#) she did developed a-v performances and installations.



She studied at Famul Stuart School of Applied Arts and sculpture at the Academy of Fine Arts and Design in Ljubljana (SI), as well as at the Valand School of Fine Arts in Gothenburg (SE).

She has exhibited/performed /presented at solo and group exhibitions as well as in gallery's, biennials, triennials and festivals:

Le Cube / Decalab_Paris, Ars electronica – Ms Wissenschaft and Stadtwerkstatt_Linz, Touch me festival organised by Kontajner at Klovičevi dvori_Zagreb, Eyebeam & CT-SWaM_New York, Rencontres at Bandits-Mages_Bourgers, PORTIZMIR#3 -Triennale of contemporary art_Izmir, AMRO festival_Linz, Kiblix festival_Maribor, Gallery Kapelica_Ljubljana, Prima Gallery_Berlin, Paraflows festival_Vienna, Liwoli festival_Linz, Gallery SC_Zagreb, Netaudio festival_London, Likovni salon Gallery_Celje, Gallery Akatriz_Ljubljana, Haip festival_Ljubljana, Amber festival_Istanbul, The Museum of contemporary art of Vojvodina_Novi Sad, Gallery KiBela-Kibla_Maribor, SCCA_Ljubljana, Pixel festival_Bergen, Škuc Gallery_Ljubljana, City Art Gallery_Ljubljana, +MSUM_U3, 7th Triennial of Contemporary Art in Slovenia_Ljubljana, Device_Art 3.009_Zagreb, Diocletian Palace Substations, at Croatian Visual Artist Association_Split etc..

Adeline Seah (Singapur)

<https://biodiversityconnections.wordpress.com>

<https://thepangolinstory.wordpress.com>

<https://www.facebook.com/thepangolinstory>



(B.S in Genetics & Plant Biology, PhD in Developmental Genetics) is a biologist who is working on conservation genomics initiatives in Southeast Asia and interested in interdisciplinary approaches to wildlife conservation and science communication. In 2012, she founded Biodiversity Connections happy hour in Singapore to build relationships between researchers, NGOs and government agencies involved in biodiversity research and policy.

She also started The Pangolin Story outreach project with a friend to create awareness in Singapore on pangolins and the threats they face in the region from poaching for



consumption and Traditional Chinese Medicine. Since attending Hackterialab Yogya 2014, a collaboration of scientists, hackers and artists with community groups on environmental issues, she has learnt about soldering, synthesizers and moving in the direction of low-cost devices for studying our environment.

Kat Austen

<http://katausten.com> <http://worldflows.net>
<http://opendroplet.org>.

Kat F Austen is a succession of experiences and an assemblage of aspirations. In the temporal melting-pot of her life so far she has produced work as an artist, an environmental scientist, a journalist, a writer and much in between.



As an artist Kat deals with themes of environment, social justice, communities and human relations to digital culture. She creates experiences, stories and playful installations, mixing fact and fiction closely, so troublesome. She wants to touch your heart, mind, soul, body.

Kat is Artist in Residence at the Faculty of Maths and Physical Sciences, University College London, and has been artist for LAStheatre, The Clipperton Project and Utter! Spoken word, among others. She has exhibited widely, including at Museo Diego Rivera, Mexico City, Kulurbraueri, Berlin, Kreuzberg Pavillion, Berlin, The Crystal, London, Schwartz Gallery, London, Regenerate Gallery, London and Williams Art, Cambridge, among others. She has presented on interdisciplinary internationally and has run artistic workshops in Germany, the Netherlands, Italy and the UK. She is Head of Research and Design at social enterprise iilab, leading the Open Droplet water sensor project, which was recently included on the Serpentine Gallery's extinct.ly platform. With this project, she is focussing on co-design, physically evocative representations of data and community stewardship of water.

Kat holds a PhD in chemistry from UCL and worked as a post-doctoral research associate at the University of Cambridge. Her writing has appeared in two book chapters, New Scientist, Nature, The Ecologist and The Guardian, and she consults widely on the intersection of science, art and technology, including as a Futureshaper for Forum for the Future, for the European Commission and UK water regulator Ofwat.

The environment is Kat's passion, and her interest is largely held by finding intellectual, experiential and sensorial ways of understanding existence in all its complexity. Her work explores the interplay between acts at different levels - individual, collective, communal,



PIKSEL

festival for elektronisk kunst og fri teknologi

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municipal, state, national, international - in the context of a global, digitally-enabled society. The aesthetics in her artworks treads the line between naive and polished, messy and sleek, humorous and disjointed. For instance, she drowned a lot of tiny people in a bath to make a point about social media.

Kat has a PADI open water diving license and also licence to be crew on the yacht.

Dmitry Morozov (Russia)

<http://vtol.cc>



::vtol:: is the project of, Moscow media artist, musician and engineer of strange sounding mechanisms. In the mid 00s Dmitry started to use actively his DIY and Circuit Bent instruments for his own music projects, as well as making instruments for other musicians and media artists. He is the first batch producer of music and video synthesizers at the post-Soviet area. Besides making music and instruments, Dmitry creates audiovisual art installations and promotes Circuit Bending and DIY Electronics in Russia by means of lectures and workshops.



Gjino Šutić (Croatia)

<http://ur-institute.org/>

<http://biotweaking.com/>

Researcher, innovator, artist, educator,
founder and CEO & CSO at UR Institute &



Gen0 Industries

Gjino Šutić, conducts research in several fields of science, such as; biotechnology & biomedicine, electronics, robotics, computer science & IT, engineering, nanotechnology etc. with a focus in the field of bioelectronics and biorobotics.

Using DIY approach to biotechnology (biohacking), he designs and DIY manufactures necessary instruments and materials.

Invented the concept of "Biotweaking" (improvement of living organisms or their components to exhibit and use their full potential) which fully defines his philosophy and work.

Since 2012. started a public work by displaying his inventions and innovations such as; SRCE, B.O.C.A., MeBUMZ etc., in a variety of scientific and art exhibitions and cultural events in Croatia and abroad. Also, started teaching as an informal educator in biotweaking areas of science.

His work combines complex electronics and biotechnology, and he often uses artistic representation for the demystification of science and for bringing it closer to ordinary citizens.

In 2013. founded and started working as CEO & CSO of non-profit citizen's Universal Research Institute UR, where he also holds workshops, teaches and experiments.

in 2015. founded and started working as CEO & CSO of Gen0 Industries - for production and development of innovations.

Aisen Caro (US)

<http://www.aisencaro.com/>



Born in Boston, MA, Aisen Caro Chacin is a regenerating composition of cells that produce a woman, a Venezuelan, a Spaniard, an U.S. American, and an animal whose patterns of migration are not based on seasons, but rather chance, chaos, and opportunity. Her curiosity led her to research the intersecting fields of art, science, and technology driven by conceptual forms of inquiry. Her work has exhibited in at the New Interfaces for Musical Expression Conference, The New York Hall of Science, Contemporary Arts Museum Houston, Maker Faire, and Dorkbot.

Soaking with a sculpture background, her sponge also absorbed the MFA Design and Technology program at Parsons in NYC Spring 2013.

She received an MFA in Design and Technology from Parsons in NYC, where she taught Physical and Creative Computing. Her radar is on Human Computer Interaction HCI- designing new perceptual interfaces; and discovering the limits of digital media.

She is currently designing assistive devices as Ph.D. candidate for the program of Empowerment Informatics at University of Tsukuba, Japan. Featured as an inventor in Future Tech by Discovery Channel, awarded and published by PopSci, and shown at the NY Museum of Art and Design, she looks forward to finding other suspended disbeliefs in her pocket.

She is also a bucket of ideas open to merge and exchange with other buckets. to create cooperative work. A creative technologist, a STEAM engine.