

SHORT TEXT***aqua_forensic*****Underwater Interception of *Biotweaking in **Aquatocene**

Robertina Šebjanič (SI), Gjino Šutić (HR)

<https://vimeo.com/288379735>

SHORT TEXT FOR WORKSHOP:***Practical aqua_forensic***

Workshop - a spin off of aqua_forensic research by Gjino Šutić (HR) and Robertina Šebjanič (SI),

During the workshop participants will be get introduced to the problematics of contemporary invisible water pollutants through practice by mentors Gjino Šutić (HR) and Robertina Šebjanič (SI).

Through hybrid approach (combining science, DIY citizen's science & art) these topics will be investigated in local environment.

These invisible chemical pollutants are very present and mostly are the legal & illegal drugs – mood controllers, antibiotics, antimycotics, painkillers, hormone pills etc.

During the workshop we will work on in-vitro experiments with pharmaceuticals to see what is their impact on the microorganisms.

Workshop will also include field trip - investigation of local underwater environment with the hydrophones for using auditory senses in research and scientific tools to analyse water on site and collect soil & water sample for further lab analysis.



4 day workshop / 4h per day

aqua_forensic workshop

DIY water analytics & effect of the invisible pharmaceutical pollutants in water

Duration: 4 days (4h per day)

Participants: optimal 10 - max 15 participants

Program:

Day 1.

- intro lecture on contemporary invisible water pollutants, their significance and research conducted under *aqua_forensic* project
- practical introduction in citizen's science techniques & practices, DIY laboratory (tools, materials & setup)
- Into to basic DIY (do-it-yourself) water analytics

Day 2.

- practical intro to aquatic microorganisms
- practical intro in pharmaceuticals
- *in vitro* experiments with effect of "locally popular" consumable pharmaceuticals on microorganisms (5 different species), participants will be invited to bring their "personal pharmaceuticals" to do in-vitro experiments with them

Day 3.

- ecological research field trip:
 - * local water ecosystem exploration
 - * field research with DIY science tools and hydrophones
 - * sampling of local microflora and fauna (aquatic microorganisms)

Day 4.

- biological sample analytics (photo_safari hunt for microorganisms)
- DIY & DIWO (do it with others) conceptual science+art solution making for reducing overuse and pollution with pharmaceuticals

***important notice: setting up the workshop before start will require 1h. Cleaning up and packing after will take also 1h**



Photo courtesy of artist, field research in Dubrovnik Croatia, June 2018

AQUA_FORENSIC WORKSHOP

TECH REQUIREMENTS AND BUDGET

(4 day workshop / 4h per day):

VENUE / ORGANISER WOULD NEED TO PROVIDE:

Projector,

3 x Windows laptop computer (with admin access, so we can install drivers for analytical equipment), as we connect them to the microscope

Sound system and small mixer

Working space for 10 - max 15 participants and 2 mentors of the workshop

*3 standard biological microscopes (magnification 100-400x)

Material cost by organisers: (consumable lab glassware, chemical reagents, microbiological chemicals & nutrients, cultures of microorganisms)**

** all the material can be ordered and organised by UR institute (Gjino Šutić) if this is more convenient for you

ARRIVE AND DEPARTURE

Travel expenses: (please double check with artist the departure and arrival location prior booking the tickets)

provided by organisers

Travel for 2x people

Robertina Šebjanič

Gjino Šutić

CONDITIONS FOR ARTISTS

provided by organisers

Robertina Šebjanič: artist fee

Gjino Šutić: artist fee

PER DIEMS:

2 people x number of the days

provided by organisers

Per diems are proportional to the number of days of stay, including day for setting up the workshop.

ACCOMMODATION:

provided by organisers

two separated single rooms



Robertina Šebjanič and Gjino Šutić during field research in Dubrovnik Croatia, June 2018 (photo courtesy of artist)

SHORT TEXT

aqua_forensic

Underwater Interception of *Biotweaking in **Aquatocene

Robertina Šebjanič (SI), Gjino Šutić (HR)

aqua_forensic illuminates the invisible anthropogenic (pharmaceutical) chemical pollutants – residues of human consumption – “monsters” in the waters.

The project combines art/science/citizen science in a “hunt for a phantom” and opens the discussion about our solidarity and empathy with waters beyond human perception. It’s a voyage into the relationship between the microbial seas and humans who are **aquaforming** the water habitats all around the planet. The question is: How do the oceans feel our impact?

LONG TEXT:***aqua_forensic*****Underwater Interception of *Biotweaking in **Aquatocene**

Robertina Šebjanič (SI), Gjino Šutić (HR)

aqua_forensic illuminates the invisible anthropogenic pollutants in water habitats. The project has a strong backbone in the hands-on research that combines: art, science, and a citizen-science approach to collect and process information on pollutants – “invisible monsters.” These invisible chemical pollutants (such as legal & illegal drugs – mood controllers, antibiotics, antimycotics, painkillers, hormone pills etc.) are the residue of human consumptions discharged into underwater habitats that were explored during a residency in the summer of 2018 in two specific localities: Danube river (Linz, AT) and Adriatic Sea (Dubrovnik, HR).

The project goal is to make these invisible anthropogenic pollutants and the pattern of their effect in the water habitats visible. With samplings of water and the seabed we are “hunting for a phantom” in the context of new mythologies. It’s a voyage into the microbial seas that are forming the body of waters all around the world. Humans do relate to water in different ways in different cultures. With pollution we change the oceans inside out – influencing life and behavior of the whole cybernetic loop of the interconnected ecosystem.

The vast complexity of the ecosystem that covers more than 70% of the planet, producing over 80% of the atmospheric oxygen, is still mysterious. We are opening discussions about **aquaforming** and pushing the question of “the human footprint on water” to make it as present as the **terraforming** in the deep age of the Anthropocene.

Anthropogenic presence is now aquaforming every part of the water habitats. It is the result of our global socio-technological system and its (geo)political, social, economic interest in water – from the shallow waters on the coastal lines to the deepest points in the oceans.

aqua_forensic wishes to open the discussion about our solidarity and empathy in understanding the oceans, seas, and rivers beyond human perception. We are using the frame of art_sci installation, workshops and public discussions, to create new narratives in this art/science dialog.

By conducting citizen science investigation on forensic oceanography, we are looking into hidden secrets. The combination of science, art and field research is opening new doors in developing sustainable solutions – bringing these problems and

thus development closer to citizens. There are a lot of challenges but also potentials when working with this topic and prototyping tools for water exploration.

The major omnipresent invisible anthropogenic pollutants are the semi-consumed pharmaceuticals that stay overlooked and are changing not just us, but also the life in fresh and saltwater habitats all around the globe. The human body on average is able to digest only 20% of the drugs that we consume, while the other 80% is disposed from our body to waste systems – ending up in world's waters.

This has a malignant impact on the whole interconnected ecosystem in an escalating loop pattern. The loop is similar to the food consumption chain, which is entering a never ending circle of multiple effects on such things as the development patterns of all living organisms, from the micro level (viruses, bacteria and other microorganisms) to the largest organisms in the oceans.

There is a question we would like to ask: How do the oceans feel our impact?

Could we develop better communication with the oceans to find solutions, such as designing new and better therapeutics without negative collateral side effects?

footnote:

***Biotweaking** - “acts or (art) of improving biological organisms on any level, by available means, to exhibit and use their full potential,” concept coined by Gjino Šutić to fully define his work. Biotweaking mostly relies on DIY biotechnology - biohacking for achieving desired goals.

****Aquatocene** - is a series of research-based artworks initiated by Robertina Šebjanič that deals with cultural, (bio)political and ecological realities of aquatic environments and their consequences / challenges.

Keywords: **#water, #forensic_oceanography, #invisible_anthropogenic_pollutants, #chemical_pollutants, #pharmaceuticals, #marine_habitats, #marine_ecology, #invisible_visible, #aquaforming, #aquafarming, #monsters**

Project credits

Artists (research & development): Robertina Šebjanič (SI) and Gjino Šutić (HR)

Project supported by:

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Bios

Robertina Šebjanič (SI) is an internationally exhibited artist. Her artistic work deals with the cultural, (bio)political and ecological realities of aquatic environments. With her projects she tackles the philosophical questions at the intersection of art, technology and science. Her projects are often realized in collaboration with others, through interdisciplinary and informal integration in her work. She is member of Hackteria Network and Theremidi Orchestra.

<http://robertina.net/>

Gjino Šutić (HR) is a biotechnologist, post-modern intermedia artist, innovator & educator. He is the founder and director of Universal Research Institute & Gen0 Industries. Gjino conducts research in several fields of science (such as biotechnology, bioelectronics, experimental electronics, ecological engineering) and postmodern new media art (Bio Art, Digital Art, Installation Art, Multimedia Art & Hybrid Art).

<http://gjino.info/>

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



aqua_forensic field research during the residency at Ars Electronica June 2018, Gjino Šutić and Robertina Šebjanič at Eleonore boat on Traun river Linz photo by Micha Gerersdorfer