International Conference

ART

BERLIN

LABORATORY

UNDER THE VIRAL SHADOW. Networks in the Age of Technoscience and Infection

9 October 2021, 11:00 am – 7:00 pm CET

Online, with livestream (<u>https://www.youtube.com/watch?v=1HeVZolbuWg</u>)



In the international interdisciplinary one-day conference Under the Viral Shadow <u>Art Laboratory Berlin</u> will explore various networks – biological, cybernetic, and social – also in light of the COVID-19 pandemic. It will include presentations by seven international artists (currently on show at ALB) whose research and media are either in the life or computer sciences, as well as guest scholars from art and media theory, biophysics, and computer science who will explore biological, digital and social networks under the pressure of new technologies. A special keynote by Roberta Buiani will discuss the multiple implications of viruses, natural and human-made in an age of technoscience and infection.

The core of the *Under the Viral Shadow* project is the group exhibition featuring works by internationally renowned artists – who will all speak at the conference: *ArchaeaBot: A Post Climate Change, Post Singularity Life-form* by Alex May and Anna Dumitriu features an underwater robotic installation investigating 'life' in a post-climate change future, based on recent research on archaea, believed to be the oldest forms of life on earth. Anna Dumitriu's object *Engineered Antibody* is a custom beaded necklace based on an antibody engineered to contain a combination of 21 amino acids – which could not occur in nature – but was originally derived from the blood of an HIV patient. *PROBE II: Subaudition* by Benjamin Bacon is a binary set of extraplanetary machines that apply machine learning methods to investigate speech to text recognition decoding spoken language, turning it into kinetic energy, light, colour, patterns and reflection. Gene Kogan's project *Abraham* is an 'autonomous artificial artist' based on decentralized AI. In interaction with the public, the work critically reflects on promising techniques from machine learning, crypto economics, and computer art. *Physarum Topologies* by Sarah Grant makes use of living slime mould to demonstrate bio-computed information routing through different topologies of computer networks. And finally, wearables such as *Electric Skin* and *Sonic Skin* by Vivian Xu explore the concept of human-machine co-evolution, offering a possible future human perception that may re-invent our relationship to the environment.

Concept of Conference: Regine Rapp & Christian de Lutz Conference Team: Regine Rapp, Christian de Lutz, Tuçe Erel, Linus Kaufhold, Tim Deussen.

PROGRAM & TIMING (CET Time Zone)

Abstracts and Bios – next page

11:00 – 12:45 CET Introduction | Under the Viral Shadow. Networks in the Age of Technoscience and Infection Regine Rapp (Art History, Curatorial Research, Art Laboratory Berlin) Christian de Lutz (Curatorial Research, Art Laboratory Berlin)

Panel A | Bodies, Organisms and Machines

Vivian Xu (Artist, designer, Shanghai/Kunshan): The Skin Series Anna Dumitriu (Artist, Brighton): Engineered Antibody Alex May, Anna Dumitriu (Artists, Brighton): ArchaeaBot: A Post Singularity and Post Climate Change Life-form Moderated by Regine Rapp

13:00 – 14:30 CET

Panel B | Digital and Biological Networks Sarah Grant (Artist, Berlin): Physarum Topologies Christina Oettmeier (Biophysics, University of Bremen): On Physarum polycephalum Danja Vasiliev (Artist, Berlin): How Computers Talk Moderated by Christian de Lutz

15:30 – 16:30 CET **Keynote | "Going Viral"** Roberta Buiani (Media Theory, Fields Institute for Research in Mathematical Sciences, York University/ University of Toronto): *Going Viral Moderated by Regine Rapp & Christian de Lutz*

16:50 – 18:30 CET **Panel C | On Artificial Intelligence** Benjamin Bacon (Artist, Duke University Kunshan/ Shanghai): *PROBE - Subaudition* Gene Kogan (Artist and programmer, New York/ California): *Abraham* Alexander König (artist, media theory, Berlin): *The Clouds Edge* Katta Spiel (Computer Science, Design, Cultural Studies, TU Vienna): *Adversarial Example Moderated by Tuçe Erel*

18:30 – 18:50 CET Final Discussion With all speakers and moderators

Abstracts and Biographies

Panel A | Bodies, Organisms and Machines

Vivian Xu | The Skin Series

The *Skin Series* explores the future of human perception, and how emerging possibilities in wearable technology can reinvent our relationship with our environment. Using the skin as an interface and venue for experimentation, *Skin Series* proposes the concept of wearables as prosthetic extensions of ourselves into the world that can evolve the boundary between our internal and external selves. The series explores the possible co-evolution of man and technology, seeing the two as hybrid communication system, and draws attention to the role of environmental influence on our sensory perception that in turn changes our behavior. In her artist talk, Vivian Xu will share her research and design process in developing alternative sensory systems through the two wearable pieces in the *Skin Series*, the *Electric Skin* and the *Sonic Skin*, and how she anticipates these new pathways may shape new forms of human-environment interactions. #Electric Skin #Sonic Skin #wearables #body technology interface #sonar # electromagnetic fields #sensory ecology

Vivian Xu is a Beijing-born inter-disciplinary artist, designer, and researcher. She is an Assistant Professor of Media and Arts at Duke Kunshan University. Her work explores the boundaries between bio and electronic media in creating machines and sensory systems, often taking the form of artifacts, installations, and wearables. Her work has been presented at various institutions in China, the US, Europe, and Australia. She has held teaching or research positions at various institutions including Parsons New School for Design, New York University Shanghai, and the Chinese University of Hong Kong (Shenzhen). She co-founded Dogma Lab with fellow designer, artist, and Professor Benjamin Bacon. <u>https://www.vivianxu.studio/</u>

Anna Dumitriu | Engineered Antibody

Anna Dumitriu will discuss her artwork *Engineered Antibody* (2016) which takes the form of a beaded necklace based on an antibody purified from the blood of an HIV positive patient. Made up of 452 hand-made beads, it both represents and physically contains the actual 21 amino acids of the antibody in the precise order. The light chain and heavy chain of the protein structure have been folded into the exact structure of the antibody. An antibody is a protein that is produced by the immune system in order to combat foreign bodies and viruses. Collaborator Xiang Li is working to improve this antibody by engineering it to better block HIV infections through the introduction of an additional amino acid called sulfotyrosine. #antibodies #amino acids #HIV #artists in laboratories #synthetic biology

Anna Dumitriu is a British artist who works with BioArt, sculpture, installation, and digital media to explore our relationship to infectious diseases, synthetic biology and robotics. Past exhibitions include ZKM, Ars Electronica, BOZAR, The Picasso Museum, HeK Basel, Science Gallery Detroit, MOCA Taipei, LABoral, Art Laboratory Berlin, and Eden Project. She holds visiting research fellowships at the University of Hertfordshire, Brighton and Sussex Medical School, and Waag Society, as well as artist-in-residence roles with the Modernising Medical Microbiology Project at the University of Oxford, and with the National Collection of Type Cultures at Public Health England. <u>http://www.annadumitriu.co.uk</u>

Alex May & Anna Dumitriu | ArchaeaBot: A Post Singularity and Post Climate Change Life-form

Alex May and Anna Dumitriu will discuss their work *ArchaeaBot: A Post Singularity and Post Climate Change Life-form*, an underwater robotic installation that explores what 'life' might mean in a post singularity, post climate change future. Based on new research on archaea (a group of unicellular micro-organisms believed to be the oldest form of life on earth adapted to life in extreme conditions) combined with the latest innovations in artificial intelligence and machine learning, the artists have tried to create the 'ultimate' species for the end of the world.

#post singularity life form # climate change #archaea #artificial life # robotics

Alex May is a British contemporary artist questioning how our individual and collective experiences of time, and formation of memories and cultural record, are mediated, expanded, and directed by contemporary technologies. His work forges creative links between art, science, and technology through a wide range of digital new media. His international exhibition profile includes Ars Electronica, LABoral (Spain), IMPAKT (Netherlands), FACT (Liverpool), Furtherfield (London), WRO Media Art Biennale (Poland), HeK (Basel), The Francis Crick Institute, Bletchley Park, Eden Project, Science Gallery in Dublin (Ireland) and Bengaluru (India), ZHI Art Museum (China), and the Beall Center for Art + Technology, University of California, Ivine. www.alexmayarts.co.uk/

Panel B | Digital and Biological Networks

Sarah Grant | *Physarum Topologies*

Physarum Topologies is a study of computer network topologies in collaboration with *Physarum polycephalum*, or slime mould, who is noted for transforming its cellular body into a distributed network of protoplasmic tubes between food sources found in its habitat. Sarah Grant will discuss her thought process behind this project, including some of the questions and insights she has gathered on ways of connecting during the course of her experiments with slime mould.

#biocomputing #slime mould #organic vs technological networks

Sarah Grant is an American media artist and educator based in Berlin. She holds a Bachelors of Arts in Fine Art from UC Davis and a Masters of Professional Studies in Media Arts from New York University's Interactive Telecommunications Program. She is a former Research Fellow at the Tow Center for Journalism at Columbia, Adjunct Professor at NYU Polytechnic in Digital Media, and Artist-in-Residence at the Eyebeam Art and Technology Center. With a focus on radioart and computer networking, she researches and develops open source software, artworks as educational tools, and workshops that demystify computer networking and radio technology. She organizes the Radical Networks conference in New York and Berlin, a community event and arts festival for social justice activations, critical investigations, and creative experiments in telecommunications. https://chootka.com/

Christina Oettmeier | On Slime Mould and Information Processing

The slime mold *P. polycephalum* exhibits rich spatiotemporal oscillatory behavior. The organism's size spans orders of magnitude, from large meter-sized stationary transport networks down to micrometer-sized amoebae. All morphotypes show actomyosin-based contraction-relaxation cycles resulting in protoplasmic streaming. The giant amoeba shows a high behavioral plasticity, leading to speculations about the origins of cellular minimal cognition. The underlying functions are not neuron-based, but are emergent phenomena, resulting from mechanochemical processes on the tubular network. In this context, we investigate how the slime mold processes information. At different parts of the slime mold, oscillation frequencies vary. We use the electronic-hydraulic analogy, implemented in a lumped-parameter model, to investigate this special case of information processing.

#Physarum polycephalum #biophysics of slime mould

Christina Oettmeier is currently a PostDoc at the University of Münster where she researches mitochondria. She obtained her Ph.D. in 2019 at the Institute of Biophysics of the University of Bremen, Germany. A biologist by training, she has a degree (German Diplom) in Marine Biogeochemistry from the GEOMAR—Helmholtz Centre for Ocean Research Kiel, Germany. Her research interests include slime molds, cell biology, light- and electron microscopy and investigating mechanisms of amoeboid motility.

Dania Vasiliev | How Computers Talk

Using a picture of a sandwich to visualize "a stack", Danja Vasiliev will talk about what's involved in digital networking and particularly the internet. From copper-pair to satellites to darkweb to cloud - the largest in-frastructure spanning the entire world will become revealed.

#critical engineering #networks #DIY technology

Danja Vasiliev is a media artist, Critical Engineer and educator born in Saint-Petersburg, currently living and working in Berlin. Vasiliev studies Systems and Networks through anti-disciplinary experimentation with hardware, firmware and software. Using computational platforms, he engages in examination and exploitation of System and Network paradigms in both the physical and digital realms. Based on these findings, Vasiliev creates and exhibits works of Critical Engineering. Since 1999 Vasiliev has been involved in computer-technology events, media-art exhibitions and seminars around the world. He has received a number of awards and mentions at Ars Electronica, Japan Media Art Festival, and Transmediale, among others. <u>https://danjavasiliev.net/</u>

KEYNOTE Lecture

Roberta Buiani | Going Viral

Whether informational or biological, all viruses appear to possess shared qualities, and to spread these qualities across disciplines, and contexts: their immateriality (because they are submicroscopic or because they are defined by code), and their non-linear and relational behavior (they come alive through advantageous connections and through a complex series of intersections) have intrigued scientists and experts. But these qualities have also been observed in the context of media, network culture, and business. I call all the myriads vectors, connections and non-linear dynamicity, as well as the emotional responses and stereotypes that have allowed these viral qualities to hop from information to biology, from specific phenomena to a set of trends and practices "the Viral."

#viral cultures #biological viruses #informational viruses #bodies, media, networks

Roberta Buiani is a media scholar, artist, and curator based in Toronto. She is the artistic director of the ArtSci Salon at the Fields Institute for Research in Mathematical Sciences (Toronto <u>https://artscisalon.com</u>). Her artistic work has travelled to art festivals (Transmediale; Hemispheric Institute Encuentro; Myseum of Toronto), and science institutions (RPI; the Fields Institute). She has published in TOPIA, Antennae, Space and Culture and The Canadian Journal of Communication among others. She is a research associate at the Centre for Feminist Research (CFR), and scholar in residence at Sensorium, Centre for Digital Art and Technology at York University, and a lecturer at the Institute for the History and Philosophy of Science and Technology (IHPST) at the University of Toronto.

Panel C | On Artificial Intelligence

Benjamin Bacon | PROBE Series II: Subaudition

The project *PROBE Series II: Subaudition* is a binary set of extra-planetary machines that investigate and apply machine learning methods of speech to text recognition to explore subaudition through the degradation and meaning of spoken language by decoding spoken word into kinetic energy, information transmission and visual representation with light, color, patterns and reflection. By creating a radio frequency networkbased ecosystem between machines and interactions with the audience, the artist intermingles human culture and machine culture in the gallery space through a real-time feedback loop. In his artist talk, he will discuss his research and design process and explore how he applies, adapts, and integrates Artificial Intelligence and computational creativity in aiding and augmenting his creative practice. #subaudition #extraplanetary probe #machine surveillance

Benjamin Bacon is an inter-disciplinary artist, designer and musician that works at the intersection of computational design, networked systems, data, sound, installation and mechanical sculpture. He is an Associate Professor of Media and Art and Director of Signature Work at Duke Kunshan University. He is also a lifetime fellow at V2_ Lab for the Unstable Media. He has presented his work in the USA, Europe, Iran, and China such as the National Art Museum of China (Beijing), Gallery Ho (NYC), Wave Gotik Treffen (Germany), Chelsea Museum (NYC), Millennium Museum (Beijing), Plug-In Gallery (Switzerland), Beijing Design Week, Shenzhen Bay Science Technology and Arts Festival, the Shanghai Symphony Hall. Most recently his mechanical life and AI sculpture PROBE Series I - AVERSO SPECILLO DI DUCENDUM was commissioned and collected by the UNArt Center in Shanghai, China. https://www.benjaminbacon.studio/

Gene Kogan | Abraham

Abraham is a mission to put an artist in the cloud, an autonomous artificial agent who creates generative art through a combination of crowd-sourced human and machine intelligence. Generate artificial images from text inputs using Abraham's first creation tool.

#artificial autonomous artist #human-machine learning interface #text-to-image

Gene Kogan is an artist and a programmer who is interested in autonomous systems, collective intelligence, generative art, and computer science. He is a collaborator within numerous open-source software projects, and gives workshops and lectures on topics at the intersection of code and art. Gene initiated ml4a, a free book about machine learning for creative practice, and regularly publishes video lectures, writings, and tutorials to facilitate a greater public understanding of the subject. <u>https://genekogan.com/</u> Listen to the <u>Artist statement</u> by Gene Kogan on his work "Abraham" (5 min).

Alexander König | The Clouds Edge

The talk focuses on the technical realities of "artificial intelligence" and examines the sub-fields of machine learning by penetrating the technical knowledge spheres and deriving critical concepts directly from textbooks, papers, and coding. The obtained knowledge gets the historically recontextualized and integrated into different (media) theoretical discourses that result from the sub-areas of machine learning. The research conveys both technical knowledge and philosophical reflection on the same level. Furthermore, the integration into teaching by direct examination of underlying concepts and their discussion with students is relevant for the research. The resulting open discourses establish technology as an operative-rational reality that expresses itself in relation to the human subject and not as a separate identity. #machine intelligence

Dr.Phil. Alexander König is a media theoretician, researcher, and av-artist living in Berlin. He works as a freelancer in the fields of real-time-animation, critical engineering, and digital video. He got his Dr.Phil. from the University of Fine Arts Vienna (Department of Cultural-Theory, Prof. Diedrich Diederichsen). Alexander König was teaching semiotics and media theory at the Merz-Akademie Stuttgart for several years and is now giving lectures on Machine-Learning at Bauhaus University Weimar. His interest in the intersection between science, technology, and art lead him to work with artists like Constanze Ruhm and Emilija Skarnulyte, by providing VR-Animations and digital Simulations for experimental Movies and Installations shown at Festivals like Berlinale. He is also deeply rooted in the electronic subculture and is producing electronic music for over 20 years.

Katta Spiel | Adversarial Example

Non-binary and/or inter* people have seen increased legal recognition in recent years. However, the persistent and pervasive unpreparedness of technical systems to ac-count for us leads to artificially amplified inequalities. Decades of machine learning and artificial 'intelligence' have led to binary gender determining insurances, access to housing, medical treatment and funding opportunities, among others. In this talk, I'll discuss how we have to take the concept of an adversarial example productively to better account for the fluidity of categories structuring social engagements.

Katta Spiel researches marginalised perspectives on technology to inform critical design and engineering. Their work is situated at the intersection of Computer Science, Design and Cultural Studies. Drawing on methods from (Critical) Participatory Design and Action Research as well as theories from Disability Studies and Queer Theory, they collaborate with neurodivergent and/or nonbinary folks in conducting explorations of novel potentials for designs, methodological contributions to Human-Computer Interaction and innovative technological artefacts.

Conference Team & Moderators

Regine Rapp is an art historian, curator and co-director of Art Laboratory Berlin. Her research focuses on art in the 20th and 21st century: Installation Art, the Artist Book, and Art & Science Collaborations. As a research associate at Burg Giebichenstein Kunsthochschule Halle she taught art history. As co-founder of Art Laboratory Berlin (2006) she researches and publishes on 21st century art at the interface of science and technology and has curated and researched on more than 40 exhibition projects (Time and Technology, Synaesthesia, [macro]biologies & [micro]biologies). In 2011 parallel to the exhibition Sol LeWitt. Artist's Books, she conceived the international Sol LeWitt Symposium at Art Laboratory Berlin. Along with Christian de Lutz she developed the international conference Synaesthesia Discussing a Phenomenon in the Arts, Humanities and (Neuro) Science (2013). The Nonhuman Subjectivities (2016/17) and Nonhuman Agents (2017/18) series of exhibitions, performances, workshops, and an international conference reflected on Art and Science in the post-anthropocentric era. As a research associate at the Institute of Biotechnology of the TU Berlin, she was connecting Art & Science research in the project Mind the Fungi, whose project publication she co-edited in 2020. Publications: [macro] biologies & [micro] biologies. Art and the Biological Sublime in the 21st Centure (book, ALB, Berlin 2015); Trans, Post and Beyond. Some Reflections on Machines and the Biological (Essay, Fabrico Publishers 2018); The concept »Nonhuman Subjectivities«. Current Artistic Practices in Posthumanism (Essay, Reimer Publishers, 2019).

Christian de Lutz is a curator and visual artist, originally from New York. As co-founder and co-director of Art Laboratory Berlin he has curated over 40 exhibitions and many talks workshops and seminars, including the series Time and Technology, Synaesthesia, [macro]biologies & [micro]biologies, and Nonhuman Subjectivities. His curatorial work focuses on the interface of art, science and technology in the 21st century, with special attention given to BioArt, DIY Science initiatives and facilitating collaborations between artists and scientists. His interest is in building multidisciplinary networks and unleashing their creative potential. Currently he is involved in collaborative cultural projects connecting Berlin with other cities in Europe and Asia, building international networks for art-science and DIWO (Do-It-With-Others) communities. He has published numerous articles and essays in journals and books, including [macro]biologies & [micro]biologies. Art and the Biological Sublime in the 21st Century (co-edited, 2015), which reflects theoretically on Art Laboratory Berlin's 2013-15 program, and an introductory essay in Half Life. Machines/ Organisms, Artistic Positions in the context of Climate Change and Extinction (2018). In context of the interdisciplinary art & science project Mind the Fungi (2018-20) he was a researcher affiliated with the Institute for Biotechnology, TU Berlin.

Tuçe Erel is a Berlin-based curator and art writer. She studied Sociology at METU (2005, Ankara), received her MA from Anatolian University in 2009, and her second MA in Arts Policy and Management (with curating pathway) from Birkbeck College, UK, in 2015. Erel worked for art magazines, as content editor, archivist and gallery assistant, since 2015 as curator internationally. In 2017 February she co-curated Now You are Here with Seval Sener at Arte Sanat (Ankara) and curated Fabric/ate at Schneidertempel (Istanbul). She facilitated artists' talks, short-term/pop-up exhibitions at >top Transdisciplinary Project Space (Berlin) throughout 2018. In 2019, she curated Hactivate Yourself in 1a Space in Hong Kong. Since January 2017, she is a member of >top Transdisciplinary Project Space, where she hosted the Posthumanism reading group between 2018 and 2020. Her curatorial interests are archiving practices, posthumanism, anthropocene, ecocriticism, and post-digital theories. Since December 2019, she is a team member of Art Laboratory Berlin, collaborating on current and future curatorial projects and concepts.

Conference Team Regine Rapp, Christian de Lutz, Tuçe Erel, Linus Kaufhold, Tim Deussen.

Cooperation partner: Duke University Kunshan Studio Deussen, Berlin

Media partners: art-in-berlin.de, <u>www.art-in-berlin.de</u> Clot Magazine, <u>www.clotmag.com</u>

Supported by:

