

An underwater photograph with a deep blue background. On the right side, there is a bright yellow sea slug with a textured, bumpy surface. A spider web is visible in the lower right corner, partially illuminated. The overall scene is serene and natural.

FEM
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BOOK OF ABSTRACTS. 2019.

FEMeeting 2019 Women in Art, Science and Technology

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Cultivamos Cultura

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FEMeeting: Women in Art, Science and Technology

Following the first FEMeeting 2018 – Women in Art, Science and Technology, which took place June 15-19th, in Portugal in the locations of Lisbon, Evora and Sao Luis – Odemira, the organizers have the pleasure to announce FEMeeting 2019. The second FEMeeting – Women in Art, Science and Technology, also takes place in Portugal and its activities spread over three different locations, Vila Nova de Milfontes, Lisbon and Oporto, and is scheduled from May 30th until June 5th 2019.

FEMeeting's aim is to bring together women from all over the world to share and disseminate their projects in arts, science and technology research. As a result many participants expressed interest to continue the meetings with FEMeeting 2019 in order to strengthen the network, contribute to the development of art-science research methodologies and grow cooperation strategies increasing knowledge sharing and bringing communities closer. In Art, Science & Technology women are a visible presence in international festivals and conferences, either working as faculty, curators, artists, scientists or having an interweaved role. The balanced numbers between genders is an undeniable phenomenon and consequently this is an interesting

time to reflect on the status quo of contemporary science and art.

FEMeeting 2019 continues to emphasize that contributions to the conference are welcome from individuals who identify themselves as women, independently of their sex. The concept of woman might be considered as a challenging one as it is nonconsensual in its multiplicity of roles and arousing cultural imaging. FEMeeting is a space for the co-habitation of individuality and uniqueness. The organizers of the conference wish to provide the opportunity for the gathering and presentation of artwork and research experiences in the unspoiled environment of southwest Portugal, followed by the two days of events open to the public in Lisbon and Oporto.

ABSTRACTS

STEMarts Lab: Merging art, science, technology and nature through artist-led interdisciplinary collaborations

In this talk I will share the work from past and future projects that evolved from the STEMarts Lab, a sci-art platform which applies the latest science research and technological innovations to arts and education through artist-led interdisciplinary collaborations, sci-art installations and STEAM programming for schools or festivals. The STEMarts educational model is based on carefully designed media-rich workshops, hands-on demos or community interventions built around the core principle that all content must make a connection to self, society and our place in the universe as a whole, thereby empowering global citizens and caretakers of the planet.

Students engage with social practice that invites collaboration with individuals, communities, and institutions in the creation of participatory and experiential art. Students work with artists and scientists to explore art as a process and 'way of knowing' in parallel and intersecting with the scientific way of knowing. I will share examples of installations based on this research, exploring this intersection of art, science, technology and nature.

AGNES CHAVEZ

Agnes Chavez is Cuban-American interdisciplinary artist and educator based in Taos, New Mexico, Berlin and Lisbon.

Chavez experiments with data visualization, sound and projection art to create participatory experiences that explore at the intersection of art and science, nature and technology. She collaborates with artists, scientists and youth to create sensorial experiences that reveal new solutions to personal, social and environmental challenges. In 2015 she was invited to the Havana Biennial to present the Origination Point, an installation that evolved from a research stay at ATLAS@CERN. She is currently completing Fluidic Data, a permanent installation at the CERN Data Center that will visualize the data from the Large Hadron Collider in real time. As curator/educator she is co-founder of The PASEO Festival, an outdoor participatory art festival in Taos New Mexico whose mission is to transform community through art and art through community. In 2009 she founded the STEMarts LAB a Research and Innovation project that applies the latest arts, science and technological innovations to youth programming through interdisciplinary artist-led collaborations. The STEMarts Curriculum Tool is an online hybrid platform that complements real world interdisciplinary science/art exhibits and events. She is the developer of SUBE, a multisensory language curriculum for teaching Spanish and English to kids through art, music and games now in its 23rd year.

www.agneschavez.com

The artist is a woman. I am a woman of the wood

Renaissance is the period when Master of Art are showing their talent to the world. They participate to the society at a higher level. We can see Leonardo Da Vinci advising the king of France and Michel Angelo being the favorite of the Vatican. It is also the period when witches were burned to death by hundred. So many talented women were killed and scarified during the period because they were supposed to be girlfriends of devil. May be the reason why there is no woman counted in the Master of Art in history today ...

ALAN TOD

Alan Tod is the artistic identity of Julien Isoré, French painter and director involved in Total art. After graduate in comparative intellectual property law in Paris in 2001, Julien Isoré worked for 7 years for the media- TV- business industry as story editor and director. In 2005, he open his first painting studio in Paris and start the international campaign for LOVE (2007- 2012) where he experimented total art. (www.artforlove.fr) In 2007 he inter the school of fine art of Lisbon (CIEBA) as independent researcher In comparative anatomy in collaboration with school of medicine of Lisbon, with School of sociology of imaginary of La Sorbonne university and with Les cahiers européens de l'imaginaire edition CNRS. In 2015, Julien Isoré became Alan Tod, the forest artist and since, he never stop to be.

Woman is art history has been few represented as name leaders in the time freeze.

When indeed woman were more probably first artist in first place. From The cavern hand who trace its hand-print on the wall to feudal time where women were leading ateliers as much as they were experimenting the life in the wood, women were producing art and leading art production and spirituality. The feudal period is the last time women artist were leading that much until the postmodern time when it starts to change again. (50's to now) We've been just living almost 500 years of hiding the woman of the wood behind a Mona Liza picture... Even with a penis. I will try to give you some examples from art, law, politic history and collective imaginary, to support my speech but : « I am a woman of the wood, and I am coming back to you girls ». I am that Witch with red hair who has the power to make men falling in love for her and work for her. Like a dragon's master, I am a woman and I have the power of speech since the cavern. I invented love. »

Saving Cities & Reviving the Countryside

Cities continue to grow and attract people, culture, jobs, and wealth. The downside of this is what we see happening now in Lisbon, a booming economy and growing metropolis which cannot be sustained indefinitely, environmentally, spiritually, or otherwise. Movements exist - and need to exist! - to improve city life, to make neighborhood connections stronger, to protect inhabitants against increasing cost of living, and to strengthen arts, culture and all the intangible qualities which make cities so attractive. And yet perhaps one of the best ways to save vibrant city life is to transfer the focus outside urban centers, to re-energize and repopulate the countryside to make these places more appealing to people who have never lived outside a city context and for those who left a long time ago. In this talk, we will explore urban and rural interdependence, resilience, and how we might decentralize and distribute the benefits of both contexts to more people. Alison will share specific examples of projects and efforts she is or has been involved in and around New York City, San Francisco, and Lisbon.

ALISON POWELL

Alison Powell is an agrarian advocate and community organizer, living part-time in Lisbon and part-time at the countryside home of the O Bosque Collective in northern Alentejo. Prior to moving to Portugal, she spent 6+ years as a Program Manager for language understanding and machine learning research projects at Google in San Francisco.

She graduated from Columbia University in New York City in 2009 with a degree in Environmental Policy and a focus on climate change mitigation policies in agriculture and local food movements. She has also worked in environmental education programs in the United States, India, Costa Rica and Ecuador. Currently, she is focused on collective urban and rural agriculture, collaborative projects, and meetings that promote the intersection of culture, economy and sustainability.

ALLISON LEIGH HOLT

Allison Leigh Holt is an interdisciplinary artist based in Oakland, CA. Holt has exhibited internationally, and has received numerous awards from institutions including the U.S. Department of State (Fulbright Scholar, Indonesia), Djerassi Resident Artist Program, the San Francisco Arts Commission, the David Bermant Foundation, Cemeti Institute for Art + Society (Indonesia), the Experimental Television Center, and Bullseye Glass Co. Recently, she was a resident researcher at the Harvard-Smithsonian Center for Astrophysics, and a resident artist at the Santa Barbara Center for Art, Science + Technology. She has presented widely, notably at the 20th Annual Science of Consciousness Conference, Imagining the Universe: Cosmology in Art and Science at Stanford Arts Institute, and the University of North Dakota Writers Conference, where she was a keynote speaker alongside science fiction author Kim Stanley Robinson and theoretical physicist Brian Greene. Holt studied at The Evergreen State College (BA) and Massachusetts College of Art (MFA).

The Conversation: Feedback Structures, Ways of Knowing, and Neurodivergence

This paper outlines general theoretical implications of feedback systems for framing the interrelated nature of living agents and systems. The model of feedback is identified as forming an ideal conceptual structure for visualizing the sensing, processing, and exchanging of information occurring perpetually, at all scales of life, including within human cognition.

Along with the constructs of the Neurodiversity Model, enactive/expanded media, and 4E cognitive theory—embodied, embedded, extended, and enacted mind—this paper presents research with experts across disciplines and discusses the results of over six years of teaching experimental film/video to autistic individuals. It was written at the invitation of PUBLIC Journal for its upcoming 59th issue: Interspecies Communication (July 2019).

Transitions

This film was shot in The Monastery of Batalha, a world heritage site that is a wonderful piece of architecture, still remaining unfinished and an inspirational locus for filming as if the camera were wandering in a dream, moving to a distant place.

ANA BARROSO

Ana Barroso is a researcher at CEAUL, University of Lisbon. She has been participating in international conferences and she has also published on film and art in national and international magazines/books. Her video works have been screened in museums, art galleries, film festivals and building facades in many countries around the world. She is the recipient of 4 international awards.

Augmented reality as an alternative form of art exhibiting

The buzzwords like “Augmented Reality”, “Immersion” and “Interaction” are kept being used in promoting the entertainment services. To make classical art more attractive to the public, these technologies are also implemented in the museums and galleries. By transforming an analogue art work and putting it into the digital world these institutions expect to create the effect of gamification and therefore make the perception of art easier and smoother. But if we take a look on the artistic strategies, we may see that the idea of immersivity was never about making art easy to consume. According to the Merriam-Webster dictionary, one of the meaning of immersivity is “the absorbing involvement”. In context of art, it means spectator enters the reality of the art work. The laws of this reality reveal themselves gradually and, if we talk about modern and contemporary art, which has left behind the attempt to reproduce the reality, are much different from those that the spectator is used to. For unveiling of these laws artists for ages have used different tools, both in terms of form and content, like polychorality in Renaissance church music, Kurt Schwitters’ “Merzbau” installation, Brecht’s “Verfremdungseffekt” in theatre etc.

Development of technologies has opened new possibilities of creating the immersivity via the art form. Nevertheless, according to Heidegger, purpose of technology is the storage of resources and commodities. And the museums can be regarded as a technology of preserving artworks by aestheticising them, giving a contemplative nature. However, art is gradually transforming from an object of contemplation into the action. Thus, with this change the old exhibiting and curating practices are becoming obsolete and one should look for a new way of presenting art that will fit the contemporary state of it and the one of spectators as well. Use of Augmented Reality technology can facilitate the merge of reality of spectator and the digital reality of an artwork.

To demonstrate this use case of Augmented Reality (AR), I have created the virtual exhibition "I am not here for you", that consists of 6 audio and visual artworks, and is dedicated to the topic of a role of women in the urban space. This concept together with the way of being presented works on making the spectator perceive the relation of the environment to the topic brought up in the artworks. The exhibition is available via the mobile application that uses the phone's camera interface to detect the location surrounding the spectator and placing the artworks around.

Conclusion: After trying out this format of exhibition, collecting the opinions of its spectators and connecting the outcome with the theoretical research done beforehand, I came to conclusion that virtual exhibitions are beneficial in terms of accessibility, immersivity and preventing the mediation of digital artwork by the physical object. But it remains to be the risk that the technology itself can distract from the purpose it is used for.

ANASTASIIA MELAI

Anastasiia Melai. Born in 1994 in Odessa, Ukraine, young curator and artist. After obtaining a Master degree in Management and working in a marketing department for several years, I decided to change my career path and get involved into art and cultural project management. I work with different media, including video, sound, photography. My works have been shown at MovingLab festival (Venice, Italy), Open Eyes 2017 film festival (Marburg, Germany), "Schönheit Wahrheit, Paradies: Digitale Kommentare zur Sehnsucht" exhibition (Dieburg, Hesse) etc. I have been conducting the cultural mediation at the collateral event of Architecture Biennale 2018, "Time Space Existence" exhibition. Currently, I am involved into developing the concept of AR-exhibitions and implementing it in the museums, galleries and other cultural institutions.

From Grid to Rhizome: Invisible Cities

In reviewing the grid arrangement of a layout in the case of (post)digital text, we decide that in light of the emergence of digital technologies and intellectual approaches to (post)digital media, which are demonstrated in the paper, this arrangement leads us away from the grid based layout where we can find new possibilities of text organization. Rhizome, described by Deleuze and Guattari (1980), is recognized as a model of how to change the view of fixed relations of a close system, which is represented by the grid, to flexible relations of an open complex system. The cultural pattern made by grid which is applied in layout of a text could be changed by actual nature of the process. In the seventies of the last century, typographers started to think about new categories of digital typefaces. Nowadays it is possible to use parametric and variable/generative fonts. These fonts are widely adjustable with alternates such as line-length x-height, stroke width, letter width, and character density. These fonts are based on a principle of dynamic changes but still are closed into mainly static grid arrangement of layout. New possibilities of post-digital media, mainly computational works as a "new logic behind the Media" (Manovich 2013) which are organised by algorithm/software, changed the condition of writing and reading. In the model of layout based on rhizome we are able to organise a text to an affect it can meet most of the preferences in the post-digital writing and reading and also use a post-digital text in the condition of artificial intelligence of posthuman self-organised systems. In the new operational logic that emerges in the interplay between data, process, interface, interaction, author and audience, the parametric/generative fonts could work well. It provides new creative possibilities of post-digital layout organizing in the unfinished system, which is based on processes. It leads to a change of the aesthetic paradigm in typography from designing a text layout as an object form to a designing process as such. In the paper I analyse my own work, a transcription of a traditional printed book "Invisible

Cities”, where the text is organized in the grid. In the history grid is connected with order, regulation but also control. In the ergodic literature it is possible to reorganise nearly unfinished text parts, such as in books by Italo Calvino. Nomad principle, the map, finally rhizome together with permutation scheme and theory of City mental image (Lynch, 1960) led to making the diagram of Calvino’s text. The diagram organized the text order and real audiovisual material from Venice. The spectator’s imagination could enjoy Calvino’s idea of a text combinatory by the interactive 4 walls interior mapping. The algorithm opened a text arrangement free of static grid, but we could not change delimitation of square shaped medium, because we expect it.. We explicated that rethinking of a new form of objects is not as important as the process in which unfinished possible arrangements, caused by “swerves” (Brassett, 2017), can be organised.

ANDREA GOGOVA

Andrea Gogova is a PhD. candidate of Multimedia and Design, FMK UTB in Zlin. Her previous Studies of Natural Sciences has led her to focus in inter/transdisciplinary research, spanning Art & Design, Technology and Sciences. She is interested in the research of process based theoretical paradigm into typographical design. Her reflection based on "ontology of becoming" is applied into approach of design theory. She focus in the post-digital text layout, which is based on the operational logic that emerges in the interplay between data, process, interface, interaction, author and reader.

ANITA MCKEOWN

Anita McKeown (PhD, FRSA, MAAG) is an interdisciplinary artist, curator, scholar and educator, interested in Creative Placemaking and Open Source Culture and Technology. As a long-term associate researcher of SMARTlab she works across the intersection of arts, technology and social change through arts-led education, outreach and PhD supervision. She has worked for a number of organizations within the arts, including ART.e @ the art of change, Lewisham Youth Theatre, Irene Taylor Trust/Music in Prisons, Razor Edge Theatre Company and Heart N Soul Theatre Company. Anita collaborated with Amigos Bravos' Beautiful Midden project. In 2013, she became part of the The Paseo core development team, who initiated The Paseo arts festival, NM (2013). Recognition of her artistic practice includes appointment as the first Artist in Residence in the Rio Grande Del Norte National Monument, (2013) and recipient of a BRAVO award, for Memphis 45s, a digital AV motion sensor project (Memphis, TN. USA (2004). As an elected fellow to the Royal Society of Arts (2008) with over 80 exhibitions, performances and residencies to date she presents her collaborative, participatory practice nationally and internationally within arts and non-arts arenas. Anita collaborates with a range of arts and education organizations in Ireland and the USA, working at the intersection of expanded art practices, community development and local, national and international policy making.

Waste 2 Taste; integrating community co-design and augmented reality for rural development

(CoDesRes is a 2 year project funded by the Irish Environmental Protection Agency (Jan 2018 - Jan 2020) based on the Iveragh Peninsula, SW Kerry, Ireland to encourage localised engagement with the Sustainable Development Goals (SDGs). CoDesRes utilises a bespoke arts-led methodology, the permaCultural resilience (pCr) praxis, as the foundation for community engagement through STEAM place-based community education and capacity building.

This presentation shares the process of the creation of Waste 2 Taste; an edible medicinal trail, one of CoDesRes's three community projects, that engages with SDG 4 - Quality Education; SDG11 - Sustainable Cities and Communities and SDG 15 - Life on Land, while contributing to Cahersiveen's response to rural depopulation and a limited tourism model.

Despite being the largest town in the region, Cahersiveen does not fully benefit from its Ring of Kerry location, the 179km 'must do' circular scenic route around the Iveragh Peninsula, South Western Ireland. As a town-wide trail, Waste 2 Taste embodies a systemic and situated creative approach to Cahersiveen's concerns by addressing social, environmental and economic issues through the integration of a community co-design process, physical locations and an augmented reality layer.

Devised to re-imagine the town's overlooked, undervalued or wasted spaces, encourage the protection of plants and highlight the biodiversity in the region, while contributing to economic regeneration; Waste 2 Taste embeds community capacity building through the integration of STEAM education, while contributing to the town's unique tourism offerings. For FEM2019, Dr. Anita McKeown, artist and principal investigator will present the project's underpinning methodology and co-design process and visual elements from the trail.

Biosensor Color Signaling

As we move into the age of CRISPR gene technology and the designing of biological organisms, how does aesthetic desire become a factor in the world's evolutionary future?

Humans, as "apex species" designers and patent holders, project our sense of "wanting" into our creation of novel biological characteristics. How do we mitigate our presence as hierarchical manipulators who imbue our "creations" with self-reflexive fictions and desires that impose a foreign aesthetic onto the environment and the organisms within it? How do organisms themselves create desirous color and pattern, and for what reasons?

In flower petals, color acts as a signaling device. As carotenoids and anthocyanins accumulate and change color, a visual display communicates the plant's development cycles. Flowers also create an intense sense of desire in humans, and as such, human's botanical longings become as much at issue as the plants' features themselves.

My research-based art practice focuses on how biological color is naturally created, and how this can be synthetically manipulated on the molecular level in plants and bacteria. In my artwork "Variegation" I have examined the markings of highly-bred camellia flowers, and how patterns of red, white and pink break, stipple, blotch and margin to create a color scheme that evidences cellular mutations and changes in gene regulation.

In the piece "Sectoring" I look at the bacteria *Serratia marcescens*'s ability to create striped colonies of red and white growth patterns after being manipulated by UV light. Currently, I am collaborating with molecular biologists to create a piece titled "Rendering a Bio Synthetic Carotenoid Pathway" in which we design genetic primers to create a biosynthetic colorproducing pathway in bacteria. Color change is used as a type of biological assay to determine and visualize gene synthesis. Regulation, or "artistic control" can be achieved both on the DNA sequence level, and post-transcriptionally by supplementing the agar growth medium with micronutrients that induce or block the pathway. Art-based research can provoke an aesthetic response, and it can also be deployed as a type of organismal "bio-sensor." Bio-art practices can be used to reformulate principles of creation, patterning, and biological manipulation, while recontextualizing this information into a broader social/ scientific discourse with multiple applications.

CAROLYN ANGLETON

Carolyn Angleton is a bioartist, researcher and experimental gardener. She holds a MFA from Rhode Island School of Design, a BFA from Colorado State University and is currently pursuing a degree in biotechnology. She is retired from a professorship at Sierra College in Rocklin, California, and has taught art, critical theory and feminist studies at California State University, Fresno and CSU Stanislaus, both in the central valley of California. She is the founder of SacBioArts, an art/science studio, and cofounder of ARC-BAC, a synthetic biology collaborative at American River College in Sacramento, California. Her artwork has been shown throughout California and internationally, including venues at the Yerba Buena Center for the Arts, Ca, the Crocker Art Museum, Ca, the National Museum for Women and the Arts, Washington D.C. and the Japan Media Festival. She is a recipient of a Djerassi residency award. As an active participant in the biohacking community, she serves on the organizing committee for the MIT Biosummit, and has received project funding from "BioHack the Planet" in Oakland, California for her research project "Rendering a Biosynthetic Carotenoid Pathway". She speaks internationally at conferences on the topic of artistic desire and CRISPR technology.

Medicine for Misandry and other social, anatomical and pharmacological experiments

CAT JONES

Cat Jones is an interdisciplinary artist, writer and researcher thinking across social, biological and metaphysical realms. She is alumni of SymbioticA and ANAT's Synapse, affiliate artist researcher, Sansom Institute, Body In Mind, UniSA, previous Creative Australia Fellow and current Create NSW Fellow.

“Philosophy in-between Science and Art

My talk has two main objectives, 1) to clarify the Deleuzian thesis according to which Philosophy is a creative work of elaboration of concepts open to the outside of Philosophy, namely to Science and Art. 2) to give an example of a portuguese research structure created with this purpose within the Centre for the Philosophy of Science of the University of Lisbon (CFCUL): the Science-Art-Philosophy Laboratory (SAP Lab), an innovative, experimental and interdisciplinary laboratory aiming at integrating the work of scientists and artists with the conceptual analysis which philosophy is prepared to provide. As I will show, in SAPLab, Science and Art experiment the active character of Philosophy as a dynamic conceptual catalyser to the new theoretical problems which defy their work and, in parallel, philosophy is challenged through the experimental connection with Science and Art.

CATARINA POMBO NABAIS

Catarina Pombo Nabais was born in Lisbon in 1976. Degree in Philosophy from The Classic University of Lisbon Faculty of Arts (1998), obtained the Diplôme d’Études Approfondies in philosophy at Université d’Amiens, France (1999) and completed his PhD in Philosophy Université Paris VIII, under the guidance of the philosopher Jacques Rancière (2007) have obtained the maximum degree for a PhD thesis in France. In 2013, he published his first book, entitled Gilles Deleuze: Philosophie et Littérature, the publisher L’Harmattan, Paris. It scholarship Post-Doc at the FCT Center of Philosophy of Science, University of Lisbon (CFCUL) that is integrated member since 2006. From 2007 to 2014 was head of the research group “Science and Art”. It is currently head of the subject line Sci Art Philo-LAB.

The Center for Genomic Gastronomy: working creatively in the hedgerow between art and science

CATHRINE KRAMER

Cathrine Kramer is a Norwegian artist and curator working internationally. She is the co-founder of the Center for Genomic Gastronomy, an artist-led think tank that investigates the mysterious corners of the food system. As such, her work has been exhibited at MU artspace, V2_, World Health Organization, Kew Gardens and the V&A among others. More recently she also co-founded the Office of Life and Art, and curated the Open Labs exhibition at Science Gallery, Dublin under this name. She has previously also created exhibitions about food, strange weather and the future of the human species for Science Gallery. The exhibition Human+ that she curated has been shown at the Center of Contemporary Culture, Barcelona (CCCB), ArtScience Museum, Singapore, and Palazzo delle Esposizioni, Rome. She has lectured at numerous academic institutions around the world, and holds degrees from the Royal College of Art, London and the University of Technology, Sydney. Cathrine works at the intersection of art and science, with a focus on the ecological and cultural dimensions of life on Spaceship Earth.

As co-founder of the Center for Genomic Gastronomy I wish to give a brief overview of our work and present two projects that are currently in development: To Flavour our Tears and Optimize the Future!

The Center for Genomic Gastronomy is an artist-led think tank that examines the biotechnologies and biodiversity of human food systems. Our mission is to map food controversies, to prototype alternative culinary futures, to imagine a more just, biodiverse & beautiful food system. The Center presents its research through public lectures, research publications, meals and exhibitions. Since 2010, the Center has conducted research and exhibited in Europe, Asia and North America. We collaborate with scientists, chefs, hackers and farmers.

TO FLAVOUR OUR TEARS (TFOT) is an experimental restaurant that places humans back into the food chain by investigating the human body as a food source for other species. By researching the culinary needs of insects, decomposers and other eaters-of-humans we hope to intimately and materially reconnect humans with the metabolic flow of the planet and our role in shaping it. The project has already been presented in different guises at a few different festivals and exhibitions, taking the form of recipe cards, a performance, an architectural model, an animation and a 1:1 scale installation of the AnthroAquaaponics System. It also has many more potential future configurations.

Optimize the Future! Is a one night event held April 4, 2019 at the Norwegian Museum of Science and Technology in Oslo. The golden age of the oil economy is coming to an end, while bioeconomy emerges as an alternative for Norway's economic, social and environmental future. Salmon, cod, microbes and other living systems are 'optimized' through digital modelling towards innovative market products. But is such optimization actually optimal? Optimal for whom? What does bioeconomy actually mean? Is it a good alternative? This event explores these questions and invites visitors to participate in a conversation about what they want the future to be. I would like to present documentation of the event and share a critical reflection of the outcome of this event and what it means to ask questions in public.

Southern Identities Laboratory: Caminhos dos desejos between art, science and technology

What is the South? How to build an identity when the mere act of searching is already a political act as the subject ceases to be an object of exotic study in order to define itself? This itinerant laboratory of epistemological decolonization uses scientific tools and methods for an artistic purpose. It is based on the idea that some disciplines regarded as neutral are tinged with a Western halo of tautological and epistemological construction. Technology understood not only as a device, but as a process, is perceived as a bridge to ancestral knowledge that evades the autocracy of Western aesthetics and narrative as it connects past and future. The itinerant laboratory model enables the reflection and validation of the hypotheses that we formulate in the same field-territory of action and simultaneously collecting information in the manner of contemporary chronicles.

Shinan Kené was created under these premises and methodology. It is a project of art, living heritage and environment, a research exploring ways to perceive, create and understand the ancestral art of the Amazon's Shipibo-Conibo community and connect it with new technologies to make visible the impact of climate change. I had the opportunity to work side by side with this community. Nature has a relevant role in my practice, it is understood as the divinity, which includes us, this idea of continuous human-natural environment, is present in indigenous cultures. This project includes a holistic vision of a social phenomenon: the struggle for the continuity of ancestral traditions in a community of migrants in Lima the Peruvian capital. On the other hand, Future Relics is a research about the power of objects as containers, where we add information and subjective contents. It explores scientific methods and tools and combines them with new media and archaeology. In this project not only converge several axes of my practice. For the first time, all they overflowed borders.

CECILIA VILCA

Cecilia Vilca (Lima, Peru, 1972) has a Master's Degree in Digital Arts, Universitat Pompeu Fabra, Barcelona, Spain (2009- 2010). Full scholarship GIS and Atlas Design, University of Twente, The Netherlands (2005). Graphic Design Degree, Toulouse-Lautrec Design School, Peru (1998). Her artistic work is made with technology in concept and realization and explores its relations with gender, society and nature. Her main goal and poetic is to encourage reflection through revelation using technology. Her projects range from those that are built with public participation and interactivity, to those that combine scientific methods such as electron microscopy and cartography. Founding member of PatriaLab, division of MyAP, Electron Microscopy Laboratory dedicated to develop digital heritage projects. Exhibitions and lectures in Peru, Mexico, Bolivia, Argentina, Spain, Cuba, Chile, Norway, Brazil and Colombia. She was selected as an artist in residence in five Art Residency Programs in Mexico, Bolivia and Brazil and recently for ISEA2018 Festival, Durban, South Africa.

In the construction of this relic for the Orixá Oxossi (Brazilian deity) I believed, and I created, adopting several roles: the artist, the believer, the scientist, the chronicler. I understood that my practice was crossed by an identity search where spirituality and tradition were incarnated and shouted from my own artistic process. A rampant method of work was born: My Chronicler Mode. During the presentation I will explain how these projects led to the Southern Identities Laboratory, and how they are linked by this method that constitutes my own epistemological rebellion of author.

Southern Identities Laboratory was part of Hybrid Happenstances (Under 40 degrees) residency program organized by ATA (Alta Tecnología Andina/High Andean Technology) and selected for ISEA2018 - 24th International Symposium on Electronic Art, held in Durban, South Africa, 23-30 June 2018. This project had the support of Prince Claus Fund.

CESAR BAIO

Cesar Baio is an artist, professor and researcher. He interned at Vilém Flusser Archive of the Universität der Künste, Berlin, taught at Universidade Federal do Ceará and currently works at Campinas State University. He is the coordinator of "actLAB and is a researcher at Centro Interdisciplinar de Semiótica da Cultura e da Mídia, Grupo de Pesquisa Fotografia, Imagem e Pensamento and Laboratório de Pesquisa em Arte e TecnoCiência. He is co-founder of the collective Cesar&Lois. He is interested in the relationship between art, technology and society.

FABÍOLA FONSECA

Fabíola Fonseca is a biologist with a PhD from Universidade Federal de Uberlândia (Minas Gerais State- Brazil). To study the relationship between science and art, she was led to Church Lab at Harvard University, where she finished part of her PhD. Currently she is engaged in two projects in Brazil, the "Livro de artista de mosca da fruta: costuras entre ciência e arte" and a postdoc position in the Art program at Universidade Federal do Ceará (Brazil) where she is developing bioart artwork.

RENO ALMEIDA

Reno Almeida is an interdisciplinary artist and designer which interests cross artistic data visualization and different struggles around information and societies of control. Undergraduate in Digital Systems and Media at the Federal University of Ceará, he is currently pursuing a Master Degree in contemporary arts. His work "Sossego" was exhibited at the Augmented Cinema, in Toronto, Canada, and "Rio do Tempo". was shown at 5th Mostra ICA, in Fortaleza, Brazil.

Blind Spot

This research has a starting point in the performance "Ponto Cego" (Blind Spot) which took place in Fortaleza: we performed wearing lab coats, gloves, masks and walked to a public space watched by security cameras. Each person had a Petri dish with agar in their hands to collect fungal spores from the air. Our aim was to raise questions about the relationship between art, science and technology and to discuss how science and technology are changing our lifestyle. We highlight the issues regarding the control made by 360° security cameras present in all big cities today, which have the peculiar characteristic of seeing all their surroundings with no blind spot.

Those cameras are a part of the scenario in major big cities in the world AND we have been disciplined not to see them or feel uncomfortable with them, as Foucault said. If we are not seeing why are we going to question it? How are those cameras being noticed by people who walk to those places? How have them changed our lifestyle, our relationships and behaviors? We are questioning all that to discuss the transition between disciplinary society, as proposed by Foucault to a controlling society as proposed by Deleuze and Guattari. While a disciplinary society uses the confinement to discipline people, a controlling society uses the continuous control and instant communication. Then we were subtly disciplined not to feel uncomfortable with the cameras neither question what they have captured. How have those cameras captured us? How has the data been used? Who is using it?

Definitely we are not uncomfortable with cameras.

From this discussion we created the Blind Spot performance. We started collecting fungi spores spread in the air to call the attention for those unseen cameras. To discuss it we have used some concepts from the philosophy of difference by Deleuze and Guattari, and the concept of spread vigilance by Fernanda Bruno. Thus we have thought about the agencement produced by the cameras: how are we being products of those processes that have captured us?

CLARISSA RIBEIRO

Clarissa Ribeiro, Ph.D., is an Architect, Media Artist, and Researcher, teaching experimental design strategies in Architecture. She is the director of the CrossLab, at the University of Fortaleza. As an independent artist, she has been producing and exhibiting experimental interactive installations exploring complex affectiveness through macroscale metaphorical translations of subatomic scale phenomena. Working in collaboration with other artists, research groups and art collectives, she has been exhibiting and presenting her works and ideas in several countries. For the last 20 years her artistic practice has been focused in investigating the connections between the sciences of complexity – cybernetic, information theory, systems theory – and artistic expressions and poetics in media arts. From 2014 to 2015 she was an Associate Professor for Roy Ascott Studio in Shanghai, China. Recently, from 2013 to 2014, she was awarded a Fulbright grant in Arts, and was living in Los Angeles, California, as a Postdoctoral Research Scholar, connected to the UCLA Art | Sci Center and Lab. During her Ph.D. in Visual Arts by the University of Sao Paulo, Brazil From 2006 to 2011, she was a visiting research member of the CAiiA-Hub of the Planetary Collegium, living for one year in the UK.

Gold-Diggers: Cupriavidus-Aurifactorem (Shaking a Wonder Maker)

Proposed as an aesthetic and conceptual dialogue with Sally Potter's 'The Gold Diggers' (1983) and Dara Birnbaum's 'Technology/Transformation: Wonder Woman (1978-79)', in "Gold-Diggers: Cupriavidus-Aurifactorem (Shaking a Wonder Maker)", a video collage, the bacteria Cupriavidus Metalidurans CH34 assumes the role of the female film star – or the Wonder Woman persona – meaning that the microorganism colony is seen as an icon and object of exchange. The intention is to explore or investigate, from a cross-scale point of view, the nature of gold (representing money) and the nature of the female protagonist. The bacteria colony is the one who produces gold additionally acting as a decontaminant actor for the environment. The microorganism colony's biochemical technology puts it in a very special place under human eyes – the one of a superhero. Similar to Dara Birnbaum edited and remixed Wonder Woman, by the power of a molecular mechanism the microorganism produces a valuable quasi-magic substance that can interfere in economic relations and create wealth and privilege in a scale far beyond the nano. An audio fragment extracted from Dara Birnbaum "Technology/Transformation" and a short fragment of the same video remix showing the woman transformation into the superhero after a blue light explosion are combined with a short video produced by Dr Nandkumar Kamat, Associate Professor at the Goa University. The short video shared by professor Kamat on Youtube captures the process of gold encrustations by bacterial on quartz in rocks samples from Goa. An additional fragment of a dialogue performed for Sally Potter's 'Gold-Diggers' is placed at the very beginning of the timeline (figure 2). Focus variations due to the microscope manipulation to adjust the lens distance to the sample privileging specific details in the process of gold deposition by the bacteria are intentionally choreographed with Birnbaum's collage sound fragments in loop.

Andrea's Room: Entangled Realities

'The same way a beautiful flower needs a diverse and fertile soil to grow, so does the spirit, which is nourished by offerings as diverse and fertile as soil.'

In 1957, Marcel Duchamp's "Creative Act" lecture called for the inclusion of the spectator in the production of the artwork. Later, Roy Ascott expanded Duchamp's concept by pointing out that it is "the artist's imperative to explore every aspect of new technology that might empower the [user] through direct physical interaction to collaborate in the production of meaning and the creation of authentic artistic experience" (2007, p. 357), as such promoting an infinite potential for meaning creation, which I call the Semiotic Dance. This presentation looks into spiritual experiences and scientific knowledge as entangled realities promoting meaning creation through a semiotic dance, and consequently, a unique qualia experience (Cybersemiotic experience).

It is hard to accord spiritual experiences with scientific knowledge yet Capra (2016) affirms these two contrasting fields "acknowledge observations as the only source of knowledge", despite their diverging objects of observation. "Mystics look within and explore their consciousness at various levels, including the physical phenomena associated with the mind's embodiment."

Attempting to depart from the dualistic mind and body, "inner" and "outer" worlds divide reflected in Kant's understanding of living beings as self-organized autonomous systems, which places knowledge and meaning construction outside biological and social worlds and into the transcendental worlds (religion); or where meaning creation is seen as computational functions attributed to mechanistic physical states and properties of the brain; Søren Brier (2009) calls on the "embodied human living" to equate humans biological qualities shared with other species; unique inner thoughts, perceptions and feelings manifested as

CLAUDIA JACQUES

A Brazilian-American interdisciplinary artist, designer, educator and researcher, Claudia Jacques de Moraes Cardoso holds an MFA in Computer Art and a PhD in Integrative Art with focus on Interactive Art. Intersecting art, technology and science, she designs interactive hybrid art and information environments that aim to explore perceptions of space-time and the digital-physical in the pursuit of human consciousness and expansion of human knowledge. She collaborates with many artists exhibiting and presenting both nationally and internationally. She has published in Leonardo, TEKS, Art & Engine, etc., and serves as Art+Web Editor for Cybernetics and Human Knowing journal. She has been part of UCLA Art|Sci Center Collective since 2011 collaborating as Information and Instructional Designer and since 2007 also as associate director for the SciArt Lab+Studio Summer Institute. Jacques teaches studio, digital and communication arts at Westchester Community College and at Bronx Community College. Her studio is in Ossining, NY.

mind and consciousness; physical and chemical information of the world; and the cultural world of meaning creation based on linguistic and computational processes. Under this integrative framework called Cybersemiotics, spiritual and scientific worlds can coincide. Brier's "embodied human living" can be used to describe how spiritual awareness promotes a "profound sense of oneness with all, a sense of belonging to the universe as a whole" (Capra 2016), emphasizing not only mind and body but also inner and outer worlds entanglement.

'This sense of oneness with the natural world is fully borne out by the new systemic conception of life. As we understand how the roots of life reach deep into basic physics and chemistry, how the unfolding of complexity began long before the formation of the first living cells, and how life has evolved for billions of years by using again and again the same basic patterns and processes, we realize how tightly we are connected with the entire fabric of life.' (Capra 2016)

Andrea's Room aim to highlight such connections by exploring correlations between Brazilian syncretic religions with events in the natural world that parallel such understandings. Through organic and scientific iconographies, aspects of the natural world that seem forgotten or discarded against established aesthetic and moral taboos associated with Brazilian syncretic religions are revealed through offerings and visual representations.

Re/sound the un/seen

The body is the organism through which humans express themselves, exhibiting properties of life in response to a variety of stimuli, defining genders and often also society's standards and expectations. It is also a living instrument, in which each part is essential in order to make the whole system works. From another perspective, the body could also be defined as an orchestra, composed by a certain amount of sounds that intertwining together create a variety of harmonic sequences. As a political phenomena, biodata collection is not only dedicated to surveillance and control regimes, but also to sonification practices, bending human reality perception to the embodiment of what is normally unseen. From the brain waves live sonification of Alvin Lucier in 1965, to the immersive acoustic experience of the 'musical cells' in *The dark side of the cell* (2004) by Andrew Pelling and the iris data transformation of *Eyes* (2018) by Yoon Chung Han, a wide range of interactive installations have been made to convert specific body parts into sound tracks, transforming organic objects into new forms of insight. A peculiar auditory journey under the skin is in this paper the circumstance to address some ethical and political issues concerning not only the production of knowledge, but also the new perspective that such exploration allows in a visual-based era. Can the body resilience be related to sound malleability in itself? and can they be seen as an act of resistance in the not-revolutionary world? Are them both triggers of consciousness in this paradigm, or an instrument of reassurance?

What is their role in the redefinition of orality and nonlinguistic forms of communication? An infinite possibility of connections and relational dynamics make both body and sound able to give shape to invisible acts of resistance, so what their in-deep position in the governance ecosystem, in which the AI predominance is developing though the vision activity?

CLIO FLEGO

Clio Flego (Turin, Italy, 1987) is a curator, researcher, tech-artists and activist. She studied at IUAV University in Venice and received a graduate degree in Visual and Performing Arts. Clio has collaborated with international festivals and events such as, among others, 7th International Histories of Media Art, Science and Technology Conference in Austria (2017), Madeira Film Festival (2015, 2016), and LEM Experimental Music Festival in Barcelona (2014). As creative and critical thinker, she has also cooperated with Universities and cultural institutions based across Europe, including EPFL, FACT Liverpool, Digital in Berlin, Roma Trial, MACBA Barcelona, and the Venice Biennale.

Climate Change and Resistance

“Across the white immensity of an eternal winter, from one end of the frozen planet to the other, there travels a train that never stops. This is the Snowpiercer, one thousand and one carriages long.” From Jacques Lob & Jean-Marc Rochette, *La Transperceneige* (Casterman, 1982)

COSIMA HERTER

Cosima Herter is a science consultant who specializes in the history and philosophy of science, technology and medicine. She is known for her science and story consulting on the award-winning BBC America sci-fi television series *Orphan Black*.

Cultivating Microbial Narratives

Developing storylines to better communicate the complexities of science is challenging, especially when the subjects are invisible to the naked eye. We play host to trillions of bacteria living in and on our bodies, dutifully attending to their quotidian tasks, keeping in check the balance of good and harmful agents. Over the years, these characters have earned a bad rap for their role in the spread of harmful diseases. However, more recently, this sentiment is changing and researchers are realizing that the communities of bacteria stirring about and within us are more powerful in dictating human and environmental wellbeing than ever before recognized. By using documentary film and microbial sampling we attempt to illuminate the social structures between these bacterial communities.

CYNTHIA WHITE

Cynthia White is a filmmaker and multimedia artist whose work has been screened, broadcast and presented at conferences in the US, Australia, Mexico and Chile. In addition to festival awards, she has received funding and artist residencies through government and academic agencies both in Australia and the US. White is currently a Research Associate in the Arts and Design Research Incubator at Pennsylvania State University where she is collaborating with researchers from the biological sciences to investigate aspects of the microbiome. She is also an instructor in documentary film and social practice.

Dirty Panties Deck: the card spread

Fluids produced by the human body serve multiple functionalities and flow through different orifices revealing the complexity of the microscopic universe that inhabits us. In all their apparent simplicity, often faced with an expression of disgust, these fluids ease the communication between the outside world and the inside of the body. Hygienically manipulated as a sign of infection or inappropriate behavior, their excretion has been repressed and sanitized, symbolizing this way the social inhibition of otherwise normal physical functions. "Dirty Panties Deck: the card spread" is a bioritual collection of stained underwear shamelessly configured and intuitively interpreted to the seeker's exploration of self. Size and number of units vary according to the card spread layout chosen and the detail of the interpretation achieved. Dalila Honorato, Ph.D, is a facilitator of safe spaces for hosting the interaction of ideas around liminal issues in the frame of Art&Sci. Her research focus is on embodiment, monstrosity, the uncanny and the acrobatic balance between phobia and paraphilia. She is Assistant Professor in Media Aesthetics and Semiotics at the Ionian University, Greece, guest faculty at Alma Mater Europaea, Slovenia, collaborator at the Center of Philosophy of Sciences, University of Lisbon, Portugal. One of the founding members of the Interactive Arts Lab, she is the head of the organizing committee of the conference "Taboo-Transgression-Transcendence in Art & Science", the developer of the studies program concept of the Corfu Summer School in Hybrid Arts and a commissar of "FEMeeting: Women in Art, Science and Technology" launching in 2018 organized by Cultivamos Cultura, Portugal. She has been granted a sabbatical leave to develop her art & medicine research project "PARTS: on the agency of surgical leftovers", in the Spring of 2019, having gynecological tissue as focal point.

DALILA HONORATO

Dalila Honorato, Ph.D, is a facilitator of safe spaces for hosting the interaction of ideas around liminal issues in the frame of Art&Sci. Her research focus is on embodiment, monstrosity, the uncanny and the acrobatic balance between phobia and paraphilia. She is Assistant Professor in Media Aesthetics and Semiotics at the Ionian University, Greece, guest faculty at Alma Mater Europaea, Slovenia, collaborator at the Center of Philosophy of Sciences, University of Lisbon, Portugal and member of the Steering Committee of the conference "Taboo-Transgression-Transcendence in Art & Science".

<http://ionio.academia.edu/DalilaHonorato>

Her Pleasure

'Her Pleasure' deliberates on the perception of female sexual pleasure and its place in an individualistic and controlled society. Commonly disregarded in the act of procreative sex, the place of female sexual pleasure today is a product of historical and religious habituation, their socio-political constructs and its psychosomatic effects. The workings of bio political mechanisms that have far reaching vectors in today's societies of control. Despite its liberation, female sexual pleasure is judged as a self-indulging, wasteful exercise that generates no tangible results.

Through the journey of the invention of female sex toys (vibrators), the research aims to subvert politically influenced myths of reproduction, denaturalize societal constructs of domestication and revive female desires that challenge the binary. The concept of the assemblage is at the heart of these explorations and the artistic practice. The creative processes applied by the artist involve mediums and materials that allow her to explore this nexus of the pleasure object and female sexuality in its constant state of becoming, regeneration and experimentation. And the relevance of such an assemblage is further assessed in a sexually liberal, but anxiety driven, over cautious and self-indulgent society pivoting on instant gratification and steering from emotional commitments.

While the starting point of this research is rooted in the historical location of women, the investigations lead one to think of assemblages as an approach adopted by women to disassemble and reassemble their collective and personal selves (Haraway 163),

DIPALI GUPTA

Dipali Gupta is a multidisciplinary artist incorporating sound, technology and materials to deconstruct socially lived realities to regenerate new meanings. Currently living in Malaysia and Singapore, a graduate from the Lasalle College of the Arts, Singapore, accredited by Goldsmiths UK, Dipali is the winner of the Chan Davies Art Prize 2018, a panel speaker at S.E.A Focus 2019 and has presented her research at Trans/Missions 2018, McNally School Of Fine Arts. Besides this she has been a docent at the Singapore Art Museum and also contributes by writing for Art&Market and for Lasalle Praxis Press. Her art practice is an exploration of societal constructs from the domain of the feminine. Her work has been showcased in Singapore, Hong Kong, New Delhi and Malaysia. Dipali's recent project entitled 'O Her!', exhibited at Chan+Hori Contemporary, is an endeavour to denaturalize the muted notion of female sexuality and reorient it in an atypical manner. Her ongoing project on Singapore Soundscapes is her way of exploring the island city as daily acoustics, an audible impression of a space which she would want to call home. Find her on Instagram @ dipalianurag.

essential for survival in the current pharmacopornographic societies of control. It is about engaging with societies of control, experimenting with the opportunities it offers, finding potential movements of deterritorialization and possible lines of flight (Gilles Deleuze 161). The vibrator, as an integral part of such an assemblage, is not separate from the female body and in this context, it is no longer about anti-reproduction, immorality or sexual indulgence but about being the indulgence, the desire, the immoral and the choice. Sexual autonomy requires access to pleasure and possibilities. Women, as part of such abstract couplings, are unafraid of their becoming, partial identities and contradictory stand points (Haraway 154) and willingly partake in this pharmacopornographic culture that enables sexual variance and freely circulates knowledge about it (Comella 14). Clearly the Goddess is making way for the cyborg and embracing her pluralisms (Haraway 181).

A Year On

A year on, I wish to share with you not only the progress made in the lab but to present it also in light of an aftereffect of the 1st FEMeeting.

Picking up where I left off last year, I propose to present and overview of our group's work as a case study of the challenges and solutions we encountered and addressed in investigating and representing blood flow patterns. It may be of interest to this community to get a direct glance into our ways of replicating physiological phenomena, as they developed over the last two decades, as they closely reflect the history of the scientific use of photography, cinematography, up to computer-generated animation and sound.

The medical representations of a physiological phenomenon crafted in our laboratory, are explicitly and implicitly computer-based re/presentations of blood flow at key locations within the circulatory system. They presented us with opportunities while posing challenges as well as bringing forth responsibilities in reflecting the living human body and its functions.

Departing from our early engineering-style visualizations, by engaging with visual and sound artists, designers and cognitive scientists, we developed our current carousel-style prototype that brings together video and audio simulations of patient data. The prototype is a novel bimodal way of presenting bio-data based on Marey's zoetrope principle. In addition to the idea of a succession of frames that engage the viewer's (educated) imagination in filling the gaps between, the individual frames are caricature-like visualizations (i.e. emphasizing particular characteristics relevant to understanding the phenomenon) accompanied by most suggestive soundscapes, with the ultimate aim at quickly drawing the attention of the treating clinician to the fast changes in the flow pattern, changes that have been shown to bring potential fatal consequences to the patient.

As physicians tend more and more to access through the virtual patient (by which we understand the very fine tuning and continually finessed version of the representation resulted from a continuous feed-back from the “medical” to the “virtual” image) the bi-modal representations became critical in transferring information in timely and accurate manner. I will present the latest steps toward the sonification of the blood flow within the aneurysm.

Having briefly alluded to the interest our group has in sound as means of communication with the clinician during last year’s presentation, two other participants showed direct interest which led to a collaboration on the drier, administrative/organizational side of academia, for now, that lead to an interesting and exciting conference track this summer, in Denmark. However, we are confident that our collaboration will expand to a deeper, intertwined, artistic and scientific research realm.

DOLORES STEINMAN

Dolores Steinman was trained as a Paediatrician and, upon relocating to Canada, obtained her PhD in Cell Biology. Currently she is a Research Associate in the Department of Mechanical Engineering at the University of Toronto and a volunteer Docent at the Art Gallery of Ontario. In her research she observes the rapport and the connection between medical imagery and its non-scientific counterparts. Her pursuit is driven by her keen interest in placing the ever increasingly technology-based medical research in the larger context of the humanities.

Resistance Island

During my presentation, I will show an excerpt called 'Lakeside Shards' from my latest documentary, 'Island under Water'. 'Island under Water' follows the united effort of the Toronto Island residents who protected the Toronto Park System from flooding by Lake Ontario during the spring of 2017. It is composed of interviews with the Toronto Island residents, the lighthouse keeper, Manuel Cappel, Feminist Art Collective residency artists from Artscape Gibraltar Point, and the Parks supervisor, Warren Hoselton, interwoven with cinema vérité footage of their combined conservation efforts with archival footage and artwork depicting the timeline and the history of the Toronto Islands.

The Islanders are often criticized in the media for being privileged for living on the islands, but they view themselves as environmental stewards, and artistic and historic documentarians of the island, in conjunction with the Indigenous community. Their political resistance to the island homes being razed by bulldozers has been legendary, and their ongoing quest to save the Toronto Island from floodwaters, airport expansion and increasing urbanization will be depicted through flashbacks and flash forwards in this documentary, interwoven with their efforts to protect their Algonquin Island homes from the 2017 flood. 'Island under Water' will be a forensic examination of the loss of the park system through natural and man made causes from the point of view of the islanders as they sandbagged the shores of the Toronto Islands, under the guidance of parks supervisor, Warren Hoselton, to protect the island shores from erosion.

The second project I will discuss is 'The Lakeside Home for Little Children', a prototype for a virtual reality and augmented reality documentary, which traces the journey of a young patient from the SickKids Hospital in downtown Toronto to the Lakeside Hospital on Hanlan's Point. In this open air sanitarium, the ten-year-old girl undergoes treatment from tuberculosis, and returns to the SickKids Hospital at the end of the summer. As an augmented-reality smart phone application, the project can be viewed at the hospital's former site at Hanlan's Point on the Toronto Islands, and as a VR project, it can be viewed to learn about the hospital's charitable history. It is intended to recreate a little known part of the history of the SickKids Hospital, and create empathy for a child undergoing TB treatment in 1893 based upon interviews and medical archives.

ELIZABETH LITTLEJOHN

Elizabeth Littlejohn is a communications professor, human rights activist, photojournalist, and documentary film-maker, who teaches at Sheridan ITAL in Toronto. She has written for Rabble.ca for the past eleven years on social movements, sustainable urban planning, and climate change. As a running gun social movement videographer, she has filmed internationally. Her articles, photojournalism, and videos have been published widely to document the Occupy and Climate Change movements, LGBTQIA* rights, and Idle No More, and printed in NOW Magazine, the Toronto Star, and Our Times. She has an unending passion to protest the rise of the right in the U.S. and Canada, and has filmed on the frontline of the queer resistance of Work for Peace during the inauguration, and for five years, the reign of Toronto's notorious right wing ex-Mayor, Rob Ford. Recently she has directed, filmed and produced 'Leelah's Highway', a broadcast half hour focusing on the suicide of trans youth, Leelah Alcorn, and 'Frolic's Haunt', a nine-minute film about a queer, accessible haunted house with its own unique scare system.

Slowing Perception

The world today (sometimes called an “attention economy”) often prevents adequate time for prolonged concentration and reflection, as noted by art historian, Jonathan Crary in his book, *24/7*. Art demanding of attention often becomes a form of resistance to the prevalence of distracted consumption. After providing a brief summary of several attention studies with respect to learning, I will explore the topic of attention within the context of transdisciplinary art practices, varied circumstances of viewing, new biologic findings, and new approaches towards learning, art-making, and the dissemination of knowledge. As an artist, educator, and the curator of *Sleuthing the Mind*, a group exhibition held at the Pratt Manhattan Gallery in 2014, I had opportunity to see the potential public advantages of slowing perception. I conceive of exhibitions as opportunities for informal learning to take place.

ELLEN K. LEVY

Ellen K. Levy is a visual artist whose focus is complex systems in evolution. She often juxtaposes still representations and dynamic animations that together create unanticipated meanings; her practice encompasses experiential mixedmedia installations, innovative forums, art and science curatorial projects, and writing in the interface between art, science, and technology (e.g., *Leonardo Journal*, *Frontiers of Human Neuroscience*). She was President of the College Art Association (2004-2006) and was Special Advisor on the Arts and Sciences at the Institute for Doctoral Studies in the Visual Arts (IDSVA) (2012-2017). She has taught courses and conducted many workshops on various aspects of art and science, especially the neuroscience of attention.

The intercomprehension between the local languages in Gabon: An incentive for the construction of identity and the acquisition of other languages

Language is at the center of all human activity (Eyeang, 2014). No one can sustainably communicate with another person without using an articulated language. The speakers who share the same geographical space, usually also share the languages in presence.

Individuals in the same geolinguistic zone usually alternate codes or substitute words or languages according to communication situations. But the situation in some African countries teaches otherwise. The neighboring languages geographically have been presented so far away as to have no interest in practicing them. In Gabon, the imposition of an exogenous vehicular language has never given the possibility of raising the problem of the syntactic and semantic proximity of the languages spoken in its territory. But the situation of other continents pushes us to an epistemic reflection to know why these linguistic phenomena do not exist.

The purpose of this study is to show the parallelism of forms that can be made between the inter-comprehension between the Roman languages (Dabène, Degache: 1996) and the intercommunication that exists between the African languages according to the zones. We advocate in this research that the Gabonese languages have something in common and that they can share to acquire other languages. They participate in the construction of the individual and collective identity of each Gabonese. There is no inaccessible screen between talking about a fang and a punu; between a myenè and a ndzebi; since they are classified as Bantu languages (Rebuschi, 1999).

The methodology adopted is both qualitative and quantitative. We will conduct semi-directive interviews to obtain the representations about the observed sociolinguistic phenomenon. Then, we will analyze glossaries and phrases from different languages to check the convergences and divergences. The frame of reference adopted is based on the work of GALATEA (a research group that works on inter-understanding between the Roman languages, Grenoble). The benefits of this work will make it possible to see the need to value endogenous languages but better to dominate exogenous languages.

EUGÉNIE EYEANG

Eugénie Eyeang is a Gabonese doctor of the Stendhal-Grenoble University (1997), Maître de Conférences in Linguistics in Didactics of Languages. Trainer of the formatters in the Normal Superior School of Libreville since 1998, she participated in the training of students teachers, counselors, pedagogical inspectors and Master in ELE. She is the author of several articles on ELE teaching and teacher training in Gabon, among which Assessment and / or self-assessment: a key procedure for the training of students of Spanish as a foreign language teacher in Gabon in the field of research pedagogical, 2010; The educational system of Gabon in the postcolonial stage (1960-2010), 2011; The study of Spanish in the regulated plans of middle and higher education in the African continent. Coordinator of collective books of Language, Literature and Education Sciences in the educational systems of Sub-Saharan Africa (2014), Les valeurs dans la société gabonaise (2015) and Values in education from yesterday to today (2017)). She is the director of CRAAL (center for recherche appliquée aux arts et aux langues) and Gabon delegate of FUNIBER Foundation.

FABÍOLA FONSECA

Fabíola Fonseca is a biologist with a PhD from Universidade Federal de Uberlândia (Minas Gerais State- Brazil). To study the relationship between science and art, she was led to Church Lab at Harvard University, where she finished part of her PhD. Currently she is engaged in two projects in Brazil, the “Livro de artista de mosca da fruta: costuras entre ciência e arte” and a postdoc position in the Art program at Universidade Federal do Ceará (Brazil) where she is developing bioart artwork.

JOÃO AGRELI

João Agreli. Graduated (2002) in Graphic Design from the State University of Londrina, MA (2005) and Ph.D. (2013) in Art and Technology from the University of Brasília and a post-doctoral researcher (2019) in Visual Arts from the Federal University of Paraíba. Is adjunct professor of contemporary media in Visual Arts course and Professional Master in Arts at the Federal University of Uberlândia. Coordinates Group of Studies in Art and Technology UFU. Search the intersection between Visual arts and Graphic Design in the the urban landscape. Exhibited in Brazil, Paris and Portugal.

MICHELLE SALES

Michelle Sales. Student in Biological Sciences (Bachelor's Degree) from the Institute of Biology of the Federal University of Uberlândia (UFU), Brazil, since 2016 has been participating on FAPEMIG / UFU Scientific Initiation Program. Develops studies in the area of Molecular Biology, Genetics and Animal Model, focusing on the study of neurodegenerative diseases, evaluating the effect of the hormone melatonin in *Drosophila melanogaster* model for Alzheimer's Disease.

Red Eyes Shadow

This artwork transits between art and science territories and will be held at genetics laboratory (LABGen) of Universidade Federal de Uberlândia (UFU). Our goal is to build a color palette with red shades using as reference the eye color of fruit flies (*Drosophila melanogaster*).

To perform this artwork we are going to use the w^* (white) lineage in which there is a mutation that expresses white eye color in these flies but that white eyes phenotype is only visible when the two alleles meet and this phenomenon is called homozygousness.

Therefore, although the flies carry the gene responsible for mutant characteristic, it does not always express itself and the eyes turn red. Our quest will be to get white eyes through successive crossings between flies with red eyes. At each crossing we will analyze the phenotypic characteristics of eyes flies and select those that present difference in eye color and we are will cross them. With the crossing we will try to make this recessive genes to white color meet each other and thus to expresses this color in the flies eyes, the last color of our palette. During this stage of crossing we will take a photographic registration of different red shades in this process to reach white color. From the photographic record, we will assemble a sequence of eyes from red to white, in parallel, we will assemble a color palette using mixtures of acrylic paint to create our palette.

The aesthetic work that will be created consists is an installation with a photo sequences showing the eye color of flies obtained in this experiment and closer than each photo we will put a recipient with red shades reached from the mixtures of acrylics paints. We want to draw a parallel between the way of red tone unfold in art and science, how they create other realities in the pursuit of red color and how science and life are industrialized and aestheticized. Thus, we raise a question: if we assume that both, art and science, construct the world from their actions, which lines circulate and articulate the relationship between them and what they are creating?

Democracy and Empathy of Speculative Design Artifacts

The theory of 'Comprehensive thinking' and the 'Comprehensive Man' by R. Buckminster Fuller stated a new process to considering a think from a whole system for a particular and specific application. During the 60's B. Fuller said that the comprehensive man is a perfect synthesis of an artist, inventor, mechanic, economist and innovative strategist but also a person who needs to know about biology and how to use it. He declared that the world was moving toward a wrong direction for its strong diversification and isolation of professional figures and specialization fields, revoking the urgent to be more observant of whole environment, more inclusive of the new discoveries and able to practice them in the right way. Today our society is living a period of crisis but, like every crisis moment in history, we are also attending great changes. We can be ready to act and perform his desire melting and exploring different fields and knowledges. The speculative design is a new discipline which born from these needs, child of a classical design definition it wants to be more discursive and critical about the contemporary condition, focusing on meanings and relationships rather than easiest use and nice aesthetic objects. Speculative design considers the design an important role for the study of society and its future where art and design practices are cooperative, sharing methods, materials, know-how and environments. It can be a tool to experiment aesthetic codes and develop original ideas but the most important aspect is the learning possibilities we can get from it. Be critical on the contemporary condition, ask what future we want and who we want to become as people in relation with the Nature and new technologies. Speculate through design means rise critical questions about which objects we've design until today, which person we've become and how our objects can contributing to change our way to perceive the present and see the future. Important during the speculative approach is looking at other playgrounds not only borrowing things but creating new

FARA PELUSO

Fara Peluso is a Berlin based artist designer. She studied graphic design and is graduated in industrial design. Inspired by graphics pioneers and abstractionists, she has been experiment-ing with elements of basic design and studying their synesthetic capacities. Her production range from basic design to experimental editorial graphic, from illustration to 3D graphic and video animation, from bio-art to installations design. Through the speculative research she plays how to connect the human being with nature, living organisms and biological processes in a deeper relationship. She collaborates and researches with professionals from different fields such as coders, biol-ogists and musicians in order to realise her bio-art projects. The result is the possibility to cre-ate new hybrid artefacts avoiding to pursue just a mimicry of biological aspects but crossing the borders. She believes that this can be well represented by the aesthetic codes of speculative design which today proves to be an explorative learning tool with a great future projection abil-ity.

collaborations and crossing the borders of specializations. Promoting new cooperations between diverse figures and developing a new hybrid working method.

A main purpose of Speculative Design is being critical minds and pursue a democratic attitude. Designing an object can means take a position as a designer, asking the user to make a choice which, most of the time ,can be lead by laws of market. The capitalism continue to govern our society, dominating even politcal and social choices, but a more speculative practice could be a starting point to change this reality creating new awarness. What means be part of a consumer system, how valorise the experiences between us and the environment are questions that will help to become more democratic. Being opened and accepting any kind of diversities trough a critical mind is the way towards a democratic and emphatic state, destroy the conformis always more powerful and predominant in our society.

How much can we learn from a Speculative and Critical education?

In dialogue with our bodies: becoming embodied knowers

We discuss how explorations in art and design, at the intersection of science and technology, are uniquely situated to address women's intimate care and contribute to revolutionize practices within the female body. We review feminist theories that underpin our woman-centered designerly approaches to creating technologies and interactions that promote bodily awareness, and invite women to become embodied knowers. Certainly, the female body remains a contested topic. As advanced elsewhere by philosopher Denise Riley, the concept of the female body is underpinned by a core of identification of experiences associated with women, such as pregnancy or menstruation. Yet, woman as a category continues to evolve and women are far from being one homogeneous group. Nonetheless, knowledge available about women's and men's bodies is disproportionate, and knowledge, or lack thereof, is actively produced. In building on this, we argue that knowledge available to women is lacking. Moreover, knowledge that was once inaccessible and technologies that were institutionally bound are currently being challenged by the rise of citizen science, do-it-yourself (DIY), and open source approaches. If, on the one hand, such approaches emphasize active participation as an option to gathering and generating data, e.g. about ourselves, our bodies, or the environment, on the other, these data have the potential to disrupt, e.g. institutional care, and to promote self-care, all in all creating opportunities for change.

We will introduce our own artistic explorations and designs that attempt to explore notions of the scientific body in its relation to biology and entanglements with technology. These include DIY alternative biological practices that embrace domestic remedies and wearable biosensors that monitor pH fluids through playful hands-on interventions with electronic textiles and digital applications. Our exemplars align with the ongoing inquiry concerned with addressing the body as a lens for innovating in intimate technologies, the kind that are not confined to the clinical setting. These novel explorations, we argue, configure woman as an active participant, and her (taking) action is at the fore when we design systems that enhance and nurture knowledge.

GIULIA TOMASELLO

Giulia Tomasello is an interaction designer specialised in women's healthcare combining technology, bio material and wearable innovation. Winner of STARTS Prize 2018. By designing alternative scenarios and acting as a creative thinker, Giulia questions our notions of wellbeing to develop innovative tools in the intersection of medical and social sciences. These intersections are enabled by her multidisciplinary collaborations and the symbiosis between her creative and scientific work, generating knowledge exchange and social integrations in healthcare.

www.gitomasello.com

TERESA ALMEIDA

Teresa Almeida is an artist, designer and researcher interested in interdisciplinary approaches to topics of taboo in, on, and within the female body. Her current work includes developing a methodology for woman-centered design and a creative practice centered around new materialities in intimate care, by exploring advanced textiles and biotechnology. She is the founder of Bitness, a platform that aims to empower women and girls by applying research to improving quality of life and social equity through design. Currently, she is a postdoctoral researcher in Interaction Design at IT University of Copenhagen, in Denmark.

www.banhomaria.net/bitness.care

HEGE TAPIO

Hege Tapio (NO) is based in Stavanger, the oil capital of Norway. During her artistic and curatorial practice she has for a long time pursued her interest in the intersection of art, technology and science. With a kitchen bench DIY attitude and through artistic practice she has been inspired to how apparatuses, new technology and life science opens to renewed interpretation, creative misuse and critical thinking. Tapio is the founder and director of i/o/lab – Centre for Future Art. She has curated six editions of the Article biennial, and developed curatorial projects like Public Art Screens, Art-Science & Cocktails and arranged several workshops and events. Her artistic research and practice is focused on body matter, desire, and extreme ecology. Her latest work, HUMANFUEL, was presented at Hybrid Matters, a Nordic art and science network program exhibited at Kunsthall Grenland, Norway and Kunsthall Nicolai, Copenhagen. The work was also presented as an artist presentation during the International Symposium ISEA in Hong Kong 2016, the exhibition "Body Esc" at the National Gallery of Corfu in 2017 and the exhibition "This Mess We're In" Perth, Australia 2018.

Commodification of ethics

During my artistic practice the past two decades there has been some questionable activities involving bodymatter. Like; how did I end up having the cancer cells of a woman named Henrietta Lacks in my freezer? Or how did superfluous material from my own bodyfat become a proposal for an effective and economic alternative to fossil fuels? During research for my artistic projects I have found that human bodymatter has played a strong role in the history of religious rituals, medicine and even magic. Though our culture has shifted through times from animistic beliefs to Christian religion and slowly transgressing into embracing the scientific truth, the use of bodymatter still remains present. Its intentional use, regulations and social acceptance is subject to a constant shift as we adapt new belief frames. A valid aspect to investigate is to how we are willing to negotiate these boundaries when economic or selfpreserving issues are at stake.

Artistic identity – when I'm enough?

In the FEMeeting 2019 Heidi-Annica will present her art works and tell about struggle with her artistic identity. She will talk about how her pedagogical and artistic work intervene. Title of her presentation is "Artistic identity – when I'm enough?"

She asks "When I'm enough of an artist, when I'm enough of an art teacher?" She has studied photography in basic vocational level and fine arts in folk high school. After that she stayed home with their three daughters for eight years before her Bachelor and Master studies in Art Education in Aalto University, School of Arts, Design and Architecture, Art Department, Finland, and minor in University of Helsinki, the Faculty of Educational Sciences, Finland, to widen her material knowledge in multidisciplinary handcrafts. She is not exactly self taught artist, but also not graduated from Fine Arts. She will graduate to have Master of Art Education degree and is interested in feminism, politics and environmental approach, that connects both her art and art teaching interest

HEIDE-ANNICA LJUNGQVIST

Heidi-Annica Ljungqvist (1983, Vantaa, Finland) is Bachelor of Art Education. She has studied photography in basic vocational level and fine arts in folk high school. She is not exactly self-taught artist, but also not graduated from Fine Arts. She will soon graduate to have Master of Art Education degree and is interested in feminism, politics and environmental approach, that connects both her art and art teaching interest. In her installations she often combines different physical materials with light or sound, and she builds it on sight only for a short period of time. Her art has been shown in Lux Helsinki Lantern Park 2012-2013 and in Visit Helsinki-Visit Vuosaari Joulupolku every year since 2016. Currently she is working as a substitute art teacher in several schools.

The Apnoea Project

Inspired by very unique projects such as WAAS (Women's Art Activation System), The Mother House, ARIM (Artist Residency in Motherhood), It Takes a Village – Models for Mother Artists, Mothers in Arts, that raise awareness on the challenges of being a mother in the art world, I am proposing to present to FEMeeting2019 Conference the results of a self-directed art residency (AR), called Projecter du temps, created by me in order to develop and finalize a few artworks in Paris and in its surroundings . Being a mother of two children, it was hard to find a short-term art residency; therefore I decided to pursue a way that could fit my needs by preparing a trip to Paris in order to develop a new stage of production of projects already initiated in my studio. This self-directed AR emerged from the need to have a stimulating experience of intercultural exchange and professional development in order to push forward my artistic output, taking the most advantage within a short period of time. There is a growing concern about the place of the 'mother' (as an artist and as a conceptual theme) in the art system. The hindrance in participating in art events or residencies, the adversity on building up a cohesive network, the constant pressure to keep up with the rhythm of the art circuit, the frequent breaks in the creative flow, the isolation that mother artists face are invisible to the majority of the artistic community. It is important to weave new strategies to overcome these struggles, bringing to the debate new possibilities for mother artists to reframe and redirect their art practices, in order to create conditions tailored to their needs and according to the demands (and contingencies) of balancing motherhood with the precarious nature of the artistic profession. Among many others, those strategies may involve: engaging into collaborative work; mutually supportive production approaches; establishing critical networking; develop suitable artistic research methods; conceive efficient working schedules with matching expectations; creativity and imagination in creating "costume-made" opportunities; present the outcomes; debate and discuss publicly about parenthood in art.

After a brief overview on the issues around the 'mother as an artist' I intend to present the results of The Apnoea Project AR (Le Project Apnée | Residence Artistique) I created, insofar as my objectives could be achieved, by describing the process of its development (strategies, tackling obstacles, bypassing economic

circumstances, finding support and funding), its experience (reflection, research, experimentation, production), its outcomes (artworks, presentations, exhibitions). This AR consists of collecting material at Fontainebleau Forest and, later on, in the city of Paris, where I will work upon the recorded data in order to edit film, projecting videos and images, as well as drawing. The final works consist of large-scale video-installations, just as a series of drawings that reflect the idea of the vibrant changes of (luminous or psychological) projection and its different and simultaneous states of mind. The art residency will be documented and will be displayed during my presentation, through pictures and videos of the artworks.

The set of artworks developed in The Apnoea Project speaks about the idea of transference considering a wider meaning of the concept of projection, where I will develop my on-going exploration of the landscape to reflect upon the idea of our conception of memories, expectations and interpretations of the outer world as a kind of projection of our inner selves. This idea of projecting, of transference, of transformation is deeply engaged with the notion of becomingness, which in the words of Maya Deren is the time of the woman. This becomingness is a suspended time; is a time of waiting; is a time of expecting; is a time of holding ones breath. Although my body of work is not about motherhood, one cannot help but see a link between them in the context of this residency. The set of artworks developed in this AR are all about projecting images and states of mind, through light projection, video and drawing. One could argue that creation/production being deeply bounded with the notion of bringing forth or bringing into the light is unequivocally related with expecting and giving birth to a child. Considering this condition of bringing into the light there is a waiting time in creativity as much as in gestation.

This AR (my first abroad) derives from the need to have a full experience on creating away from my children; of course this would also mean that it would put to the test my ability to be away from them during that period of time. It will be a sort of 'apnoea experience' in the double meaning of the word since I will have a breathing space away from them in order to create, but also will be holding my breath because of the distancing. That suspension, that hiatus is where the becomingness takes place and where 'time is projected'.

HELENA FERREIRA

Helena Ferreira (Lisbon, 1982) is an artist that develops mixed media installations in the scope of video, sculpture and drawing. She is graduated in Sculpture from Faculty of Fine Arts of Lisbon University, holds a master degree in Visual Art Teaching and is currently developing her PhD in Art Installation with a FCT Scholarship. Over the past decade Ferreira has shown her artwork in Portugal and abroad, has curated art exhibitions, has been invited to present conferences, seminars and workshops, and has taught Descriptive Geometry. She has co-edited essay books and catalogues, as well as published some findings of her research on screens and projection, public art, art research. Helena was also co-coordinator of the Post-Screen: International Festival of Art, New Media and Cybercultures.

Politicizing DNA: explorations of the ethical, legal, and social implications of direct-to-consumer genetics

The Politicizing DNA project is dedicated to exploring the political, medical, and racial nuances of direct-to-consumer (DTC) genetic testing. Led by Hined Rafeh and a team of undergraduate researchers, it seeks to explore the second-life of genetic data after you submit your spit, illuminate the nebulous definitions of “genetic health risk,” and evaluate the scientific claims backing health, ancestry, and personality trait DNA tests. This project delves into the ways in which DTC genetic test companies back their scientific claims and how these claims are presented to the public. By analyzing the physical artifacts and literature provided in a mail-order test, this project will result in an online archive of direct-to-consumer DNA tests represented by photographs and accompanying analysis, with specific regard to how scientific claims are being made and advertised.

HINED RAFEH

Hined A. Rafeh is a HASS fellow and PhD candidate in the RPI STS program, and her research explores genetic data, techno-identities and critical scientific engagement. She serves as the project lead for the Politicizing DNA group in the Tactical Humanities Lab. Her dissertation examines the legislation of genetic data, with a focus on the commercialization of genetic tests.

Quasi-Nature: Bio Art, Borderline and Laboratory

This report aims to introduce Quasi-Nature: Bio Art, Borderline and Laboratory, the first exhibition that systematically addressing the idea “bio art” in China. The show includes three parts: the important art pieces in the history of bio art, the creations of young bio-artists in Asia, with a research program “Lab as the Generator of Surprises”. The speaker will also introduce EAST-season, the annual event on Art, Science, technology in Central Academy of Fine Arts, Beijing.

IONAT ZURR

Award winning Artist and Researcher, Dr. Ionat Zurr formed together with Oron Catts the internationally renowned Tissue Culture & Art Project in 1996. Ionat is the Chair of the Fine Arts Discipline at the School of Design The University of Western Australia and SymbioticA’s academic co-ordinator. She is a Visiting Professor at Biofilia – Based for Biological Arts, Aalto University, Finland (2015- 2020). Ionat’s interest is Life, more specifically the shifting relations and perceptions of life in the light of new knowledge and its applications. Often working in collaboration with other artists and scientists (mainly Oron Catts), she has developed a body of work that speaks volumes about the need for new cultural articulations of evolving concepts of life. She is considered pioneer in the field of Biological Arts; she publish widely and exhibit internationally. Her work was exhibited and collected by museums such as Pompidou Centre in Paris, MoMA NY, Mori art Museum, NGV, GoMA, Yerba Buena Center for the Arts, San Francisco, Ars Electronica, National Art Museum of China and more. Zurr ideas and projects reach beyond the confines of art; their work is often cited as inspiration to diverse areas such as new materials, textiles, design, architecture, ethics, fiction, and food.

Eco-Erogenous Para-Pharmaceutics and Trans-personal Unisex Cosmetics

ISABEL BURR RATY

Isabel Burr Raty is a filmmaker and performance artist, exploring the ontological crack between the organic and the artificial, between the unlicensed knowledge of minority groups and the official facts. Since 2013 Isabel is based in Brussels, where she develops her second feature film, set in Easter Island (supported by Media Fund). Her artistic work interweaves new media, body art, lectures and participatory performance, proposing hybrid narratives and bioautonomy practices that play with synthetic magic and compose in situ Sci-Fi. She is associate researcher in a.pass.be, New Media Art lecturer at École de Recherche Graphique Brussels; and one-year artist in residency in Waag and Mediamatic Amsterdam, after obtaining a grant for outstanding international artist given by the ministry of culture of this city. Isabel has shown her works and collaborations in venues such as: KVS (Royal Flemish Theater), Constant_V, ZSeene Art Lab, Beursschouwburg, Limal (Brussels); Palais de Tokyo Paris and ISEA Hong Kong; and presented her artistic research in festivals/conferences such as: Ecofutures Festival London, FEMeeting Portugal, Taboo Transgression Transcendence in Art and Science (Corfu Greece) and Human Enhancement Clinic at Border Sessions (The Hague).

In Catastrophic times... Can the cavities that make up the landscapes of the human sexual organs be a territory for agricultural development? Can the orgasmic body be a source for sustainable electricity production? Can sex hormones offer alternative components for psychopharmacology and recreational drugs formulas?

The implicit contradictions of the “enlightened” thought and industrial revolution have rather darkened our notion of autonomy. In the name of progress and hygiene, we have become clinical, consuming pharmaceutical solutions, subjected to engineers, living under the skies of an unregulated Gaia, whose self-recycling capacity we have surpassed while feeding the Anthropocene monster.

Facing this situation, I’m currently Be-Coming the Patrona of an exotic mobile farm, that proposes a self-sustainable model of production, based in the concept of fluid lineage exchange, and frames its economic plan in the form of a watermill. My research evolves around the effort of disentangling power from knowledge and questions the concept of value, the contemporary hierarchical exploitations between the “object” of production, the producer and the consumer. Thus, in my art work I am busy creating hybrid participatory performances and installations that invite participants to queer fixed categories of production understandings, and experience the benefits of embodying utopian SF in real time.

In June 2018, together with the farm facilitating team, I carried out the first experimental version of the Beauty Kit Female Farm at Cultivamos Cultura Portugal, a project curated by Marta de Menezes and Dalila Honorato. Here we instructed the DIY technologies of the “Bioautonomous female farming system” to a group of guest artists/harvesters that came from different continents. This system harvests the nutritious (like animal) and healing (like plants) hybrid human female sexual juices and manufactures beauty bio-products with them. The outcome was, amongst others, a magical library of fluids that cemented the grounds for the development of an Eco-erogenous Para-pharmaceutics Village in the Atacama Desert, where “every BODY” will harvest and recycle each other.

Rethinking collaboration methodologies in the processes of transdisciplinary artistic creation

There are currently expressions and artistic experiences called "hybrid" because of their transdisciplinary nature; his dialogicity with the antagonistic, with "its opposite" or the different. These activities, focus on the artistic production process instead of making a final art object, are conceived as rebellious actions (even irreverent) and they demand new redefinition of laboratory practices, facilities and spaces dedicated to research in the Academy and techno-scientific business world. This article discusses two projects that are based on a cohesion between disciplines and their methodologies. In this reflection, we must add the need to establish new debates about the artistic creation that builds unusual and novel mechanisms in the generation of knowledge, thus questioning the figure of the artist in society, the production of art base on objects, art schools' leaning systems, art faculties, museums, etc., and contemporary artistic research in general.

For this matter, a dialogue is established between the two authors of this article, who are still working as artists and researchers, also professors in different universities in Spain, and who discuss the production and specific transdisciplinary methodologies that each one have used in her production processes. As well as how these way of art practices have dissonant and disruptive common aspects, problems within the academic (research and rigor) and artistic world (curator's and public's behavior), reflections not yet raised, resolved and new conclusions and knowledge.

An article is presented where each person establishes an analysis, reflection and questions about the transdisciplinary creative practice of the other partner, the specialization in the task and methodology used, as well as the processes and the disruptive results that can be appreciated from each proposal.

ITZIAR ZORITA

Itziar Zorita from University of País Vasco (SPAIN). Faculty of Communication. Department of Audiovisual Communication and Publicity. She is developing her work in areas of creation, production and communication of cultural projects. She has working as an artist as well as in cultural affairs for different institutions such as Consonni, liquidDocs, CCCB, Donostia/San Sebastián European Capital of Culture 2016 and Tabakalera. She is interested in artistic collaboration and educational researches.

PAZ TORNERO

Paz Tornero from University of Granada (SPAIN). Faculty of Fine Arts. Department of Drawing. She is an artist working on art, technology and science fields. She is interested in transdisciplinary research and learning as well as artistic collaboration and innovation processes. She was visiting researcher at the Institute of Microbiology in Ecuador during two years. She has worked with scientists and engineers, and she created a course about transdisciplinary learning (synergies between art, tech and science), at the University of San Francisco in Quito, Ecuador.

JACQUELINE SIMON

Jacqueline Simon is artistically known as Jackie Neon, she grew up in New York City in a multi-ethnic and multicultural family. She is a graduate of the School of the Art Institute of Chicago with a BFA where she concentrated in sound art and later went on to attend Parsons School of Design where she graduated with an MFA in Design and Technology. A common theme in her work is identity and perception. Science and technology have greatly influenced her as well. Fascinated by the juxtaposition of expectations and reality she has found that combining common materials, images or sounds creates moments of introspection. Jackie Neon is an artist and designer who enjoys problem solving and research in order to create enjoyable and engaging experiences for people. Over the years Jackie has adapted and grown with the times working with a variety of mediums hands on. She has a deep love for learning and believes strongly in inclusion and aims to create work that everyone can enjoy, regardless of background, culture or education.

Sense Circuit

Sense Circuit is a workshop where participants create a circuit using conductive thread, 3v battery, switch, a magnet, and an LED or motor. The aim is to demystify creating a circuit and make people who might not feel comfortable making one realize they can. The workshop was offered for free at Creative Tech Week and Maker Fair in New York in English and at The Akumal Arts Festival in Mexico in Spanish. Participants then design something to cover the circuit using felt and googly eyes to make the circuit truly their own design and creation. The main finding of this work is that people young and old who felt at first they were not able to create the circuit were able to overcome their insecurities and successfully create a working circuit. An unexpected outcome was that males older than 40 had more difficulty than female participants of a similar age group. The self-imposed limitation can be confronted and eliminated when people are able to see they have the ability to apply the knowledge they already possess to learn new skills. Sense Circuit was born from the idea that people of all ages and regardless of gender should feel like they have the ability to create circuits or try to.

With a market of toys and projects aimed at children and gender inclusion, the idea was to create a workshop that children and adults could participate in together regardless of experience level, identified gender or age. The cost was also a factor, the aim was to keep the cost of materials for each circuit low. The design element separate from the circuit construction is open so that people can create something that is visually meaning full to them and that can be adjusted to fit different themes for future workshop iterations.

Engaging Art, Science and Empathy (EASE): An interdisciplinary art and science approach to ameliorating the gendered experience and treatment of chronic pain

Chronic pain is experienced by over 100 million, with over one in every four Americans, having suffered from pain that lasts longer than 24 hours (Simon, 2012). Studies show that pain is differentiated by sex, with more women than men experiencing chronic pain (Breivik, Collett, Ventafridda, Cohen, & Derek Gallacher, 2005; Fejer, Kyvik, & Hartvigsen, 2006; Haukenes, 2015; Stubbs, Krebs, Bair, Damush, Wu, Sutherland, & Kroenke, 2010) and that gender impacts the way people are treated, with women patients being questioned, particularly by doctors, and judged to be either not sick or suffering from an imaginary illness. (Johansson, Hamberg, Lindgren, & Westman, 1996; Ware, 1992). Multidisciplinary teams of artists, patients and clinicians found that integratin knowledge from their diverse disciplines, and visualizing chronic pain, improved understanding and highlighted tensions and paradoxes within pain encounters between patients and clinicians (Padfield, Omand, Semino, Williams, & Zakrzewski, 2018). Research has shown that art can be one of the best forms of educating medical professionals, communicating with healthcare staff and for patients to feel more ownership of their treatment (Braš, Đorđević, & Janjanin 2013; Arts Council England, 2006).

EASE is a project of co-creation and presentation of artworks that express pain. The project brings together women living with chronic pain and experts from multiple disciplines: art, design, psychology, neuroscience and naturopathy, drawing on the expertise at the university's Division of Pain Research, and its School Art & Design to work collaboratively. Firstly, we work together to create PhotoVoice projects. The PhotoVoice method has been chosen for the fieldwork. It has used successfully in feminist research and treats individual participants as experts in their own lives, supporting them to use images and their voices to create works that inform decisions, strategies, and policy-making. It has been used extensively with under-represented and vulnerable populations because it is "relatively unobtrusive and has the capacity to be empowering" (Wilkin and Liamputtong, 2010). Secondly, we design new artworks and designed objects.

JANE PROPHET

Professor Jane Prophet is a visual artist at Stamps School of Art & Design, University of Michigan. Her practice-based research and writing emerges through collaborations with life scientists such as neuroscientists, stem cell researchers, mathematicians and heart surgeons. She works across media and disciplines to produce objects and installations, frequently combining traditional and computational media. Her research with neuroscientists into memento mori was supported by a Humanities and Social Sciences Prestigious Fellowship Award from the Hong Kong Research Grants Council. Prophet's papers position art in relation to contemporary debates about new media and mainstream art, feminist technoscience, artificial life and ubiquitous computing. Professor Prophet received a PhD in arts education from Warwick University in 1995. She has contributed widely to debates about art in higher education, in particular interdisciplinary and practice-based PhDs and the role of the academic artist-researcher. Her current research includes an international quantitative survey of PhD research methods in Art and Design.

Shared Passions: an intersectional and performative exploration between how science fiction influences and co-creates the world we live in & how perceptions are transformed within affective networks

Shared Passions is about performance of science fiction, linking the work and life of two women artists Jimena García Álvarez-Buylla of Mexico and Sanja Vodovnik currently of Canada connected by Nina Czegledy. Shared Passions operates on the Canada-Mexico axis extending into a terrestrial (1) arena in order to investigate how SF shapes our daily lives and how it influences and co-creates the world we live in. The three principal participants in this project come from different countries, different backgrounds, and different generations, yet they are joined by shared passions for science, fiction and performance art. Shared conversations are a part of this performance, and so we invite all to share the experience on site and on-line. Our performative practice aims to reveal ways in which SF as a mode of thought informs the ways we constitute ourselves in the matrix of mixed times, spaces and ideologies, at the point where the virtual and the real seemingly conflate into one-dimensional experiences of the world. As Csicsery-Ronay writes in *The Seven Beauties of Science Fiction* (2) the “widespread normalization of what is essentially a style of estrangement and dislocation has stimulated the development of science-fictional habits of mind... (it has become) a kind of awareness we might call science-fictionality, a mode of response that frames and tests experiences as if they were aspects of a work of science fiction” (2).

We started a series of online correspondences and exchanges in January 2019. Barely a month later, based on Jimena and Sanja’s initiation, we were co-creating a self-funded exhibition for early May in Mexico. First emails were exchanged then we proceeded to Skype. Jimena talked about her family history and her grandparent’s scientific experiments, Sanja about the SF in

theatre. Together they found a common language that materialized in objects to be exhibited in Jimena's home. Future plans for a performative exhibit in Toronto in the fall of 2019 are already in progress.

So far, we have included virtual and material venues to investigate how we interact with and through technology, and how these interactions inform how we see ourselves and how we build the worlds within and around us. Our contemporary digital landscape is occupied by numerous mega projects, amongst which small self-initiated projects seem to be an exception. In consequence, we consider alternate modes of being, becoming, and interdisciplinary strategies critical to the preservation and flourishing of lives worth living (3). Shared Passions is a primordial soup of thoughts, words, objects and actions that ask important questions about coming to terms with our imagination and guiding it into a material manifesto for the future.

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JIMENA ÁLVAREZ-BUYLLA

Jimena García Álvarez-Buylla. Graduated from Goldsmiths University of London. Went back to Mexico after that. Has worked with different community building projects, from self-sustained experimental art spaces like Limbo Limbo in south east London, or by responding the call of artist Abraham Cruzvillegas and many others in reflecting around detritus and how life explores and emerges from destruction, and finally by joining forces with the Tribunal Latinoamericano del Agua and artistically supporting their XIIth session in Guadalajara, Mexico. In this Russell type tribunal 12 different crimes against the environment and humanity were judged and ruled.

NINA CZEGLEDY

Nina Czegledy, artist, curator, educator, works internationally on collaborative art & science & technology projects. The changing perception of the human body and its environment as well as the paradigm shifts in the arts informs her collaborative projects. She has exhibited and published widely, won awards for her artwork and has initiated, researched, lead and participated in forums and symposia worldwide.

SANJA VODOVNIK

Sanja Vodovnik is a PhD candidate at the University of Toronto. Her research interests include but are not limited to examining various outlets of staging and performing science fiction: its cultural history, dramaturgy, ethics, and the performance of sci-fi in fan communities.

Is (bio) art relevant?

In this 10 minutes provocation I will ask whether (bio) art is relevant and if it is what its role(s) in current times. From narratives of "saving the world" or "just trying to make a living" to "having fun", where do women artists position themselves?... and does that matter anyway?

JO WEI

Jo Wei (CN) is a curator, researcher and the founder of the Pan Bio-Art Studio (PBS). She is currently a researcher of Art, Science and Technology (AST) in the Central Academy of Fine Arts (CAFA), Beijing. Her recent research interests include AST in a posthuman context, bio art/bio design, and others. Among the list of her many curations are Quasi-Nature: Bio Art, Borderline, Laboratory (2019, Hyundai Motorstudio, Beijing), Kairos (2018, Ars Electronica, Linz) and When Forms do not Become Attitude (2016, CAFAM, Beijing). Wei was the co-curator of 1st and 2nd edition of Beijing Media Art Biennale and International Adviser for the European Commission's 2019 STARTS Prize.

Hot Spots: Radioactivity and the Landscape

The presentation will focus on "Hot Spots: Radioactivity and the Landscape" an exhibition at the University at Buffalo Art Galleries in fall 2018 and traveling to the Krannert Museum at the University of Illinois Urbana-Champaign this coming fall 2019. The exhibition is co-curated by myself and Jennie Lamensdorf – brings together international artists and art collectives in a multi-media exhibition that scrutinizes the nuclear industry, with emphasis on the of long term impact of radioactive waste. Artworks in the exhibition range from video, virtual reality, and photography to drawing and sculpture made from cloth, beads and metal. The relatively youthful nuclear industry (60 year) has expanded from weapon production to find uses in power generation, medicine, and household products like smoke detectors. Hot Spots illuminates critical environmental issues that stem from the lack of responsible strategies for radioactive waste storage and disposal.

The artists included in Hot Spots examine radiation through themes that including rendering the invisible visible, using art as a tool of information disclosure and disruption, and developing language necessary to communicate thousands of years into the future.

JOAN LINDER

Joan Linder. Known for drawings packed with thousands, even hundreds of thousands of tiny, energized marks, Linder's large-scale images of quotidian subjects find inspiration from her immediate surroundings. Her most recent project, Operation Sunshine, explores the toxic chemical and radioactive waste sites on Buffalo / Niagara Falls. The work was exhibited in solo exhibitions at Mixed Greens Gallery, NY; the Albright Knox Art Gallery, Buffalo, The Faulconer Gallery, Grinnell College, IA. Other past notable exhibitions venues include Kunstahallen Brandts, Odense, Denmark; the Aldrich Museum, the Gwanjgu Art Museum, the Bronx Museum, the Queens Museum, and The Museum of Fine Arts Boston. She has received residency fellowships at Yaddo, MacDowell, Villa Montalvo, and a Pollock Krasner Foundation grant. Linder is Chair and Associate Professor of Drawing in the Department of Art at the University at Buffalo SUNY and is co-curating an exhibition Hot Spots: Radioactivity in the Landscape, opening at the University of Buffalo Art Galleries in September 2018.

<https://www.joanlinder.com>

JOANA MAGALHÃES

Joana Magalhães is a biomedical researcher in the field of Regenerative Medicine and Osteoarthritis. She has a PhD in Biochemistry and Molecular Biology (University Complutense of Madrid), obtained whilst a Marie Curie Fellow. She holds a BSc in Biology (University of Aveiro). She also works in science communication developing STEAM-for-health media strategies from a gender perspective. She is highly interested in the field of art and science: she was a scientist-in-residence at Fundación Luis Seoane and Artesacía Teatrical Company for "TRANSCÉNICA" during the summer of 2015. She participated in the collective exhibition "Ollo da Arte" at NORMAL, with "I publish therefore I am". She is a board member of the Spanish Association of Women in Science and Technology (AMIT), the Portuguese Association Viver a Ciência(VAC), and a Representative of the Young Scientist Forum- European Society of Biomaterials.

The Modern Promethea

200 years ago, Frankenstein – The Modern Prometheus – from Mary Shelley, was brought to life. In the science fiction story, Dr. Frankenstein plays God's Life Creator. Robert Langer and the Vacanti brothers, in 1993, published the first TE study, not by creating life from the dead, but from living cells, being considered the fathers of TE. The field has evolved and is currently opening a gateway on women's biology, by incorporating sex and gender perspectives. From Doris Taylor - the mother of organ TE and heart decellularization - contributions in sex differences in mesenchymal stromal cells reparative capacity and differences in heart physiology, to the most recent inputs in reproductive biology, by Teresa Woodruff and team, creating the first functional 3D printed bioprosthesis ovary in mice that produced a healthy offspring. Quoting Nick Stockton for Wired "In the future, all the cool kids will be inked on the inside." Even though this study is mainly focused on ovary problems due to cancer treatment, with increasing longevity and current lifestyle, could TE be used as a techno-instrument to control The Modern Promethea maternity? Will women's bodies be further instrumentalised?

On the other hand, in the future could a gendered modular body be created? Or gendered semi-living entities? Can we overcome gender-biased TE research. These are some of the questions leading the incipient phase of this exploratory work.

Projecting the new liminal „self“

Susan Merrill Squire in the book *Liminal lives*. Imagining the human at the frontiers of biomedicine tries to explain the importance of liminal beings (lives) which in her opinion: (...)exist in that inbetween or marginal zone. Like the Nightlight “adoptable embryos”, neither discarded bioproducts nor valued human being, they are participants in a rite of passage, between everyday life and a higher or different level of existence. (Squire 2004, p.2) She mentioned for instance banked embryos, embryonic stem cells, organs for transplantation. In her opinion we all are becoming liminal and we should learn how to get this position observing mentioned liminal beings.

The another important thought included in the book is that about correlations between culture and biology, especially literature (science fiction), performance and biomedicine: Becoming liminal is a two-way process, in other words: not only do we turn to culture to make sense of moments of biological change, but through our cultural practices – our performances – we are able to access, and indeed to produce, a range of meaningful changes in our bodies.(Squire 2004, p....)

Considerations included in this book became the inspiration for my project *Synthetic motherhood* which is the mixture of hard science and artistic imagination. We can say it is kind of visual science fiction.

I am pretty sure I will never be a mother, but I am curious, as probably every woman is, how my offspring could look like. Cutting edge biotechnology has helped me to predict the potential look of my children. At that point, it was only possible to predict the potential eye and hair color.

I had my DNA determining the features mentioned above sequenced, as did the sample of 10 males. In the next step, the result of my DNA sequencing was combined with the result of each of the men, using a simple method of Mendelian crosses. The

KAROLINA ŻYNIOWICZ

Karolina Żyniewicz is an artist (2009 graduated from the Academy of Fine Arts in Łódź, Department of Visual Arts), and a PhD student (Transdisciplinary PhD Programme at Artes Liberales Faculty, University of Warsaw). Working in a laboratory (mostly at Institute of Genetics and Biotechnology, Faculty of Biology, University of Warsaw) locates her works in the field of bio art. She tries to use her artistic projects as a research method. Her artistic activity is focused on broad understood life (its biological and cultural meaning). Her projects have mostly conceptual character. The visual site of them is rather limited and has sources in laboratory practice. The main point of her research interest are multilevel relations emerging during realization of bio art projects. She tries to put her observations, as an artist, in the context of Science and Technology Studies (STS) and Actor-Network Theory by Bruno Latour.

karolinazyniec.com

outcomes were uploaded into an open access webtool: HIRISplex-S Eye, Hair and Skin Colour DNA Phenotyping Webtool. The tool indicated the most probable phenotypes. However, it should be pointed out that in this system some nuances cannot be reflected adequately: dark blond does not differ from light brown; green eyes are categorized as a kind of blue eyes. The prediction is not 100% precise.

Conducting the process of the offspring visualisation, I sometimes had to make the choice myself: between dark blond and light brown when it comes to hair colour and between different variants of eye color, including shades of blue, gray and green. I used pictures of children's faces from public domain images and photoshopped them, changing the eye shape to mine. I also changed some other facial features a bit to make them look more similar to me. It should be considered as an artistic invention. The additional visual elements are classic canvases with description including the combination of the DNA sequencing and samples of possible hair colors, which had been collected and donated by my hairdresser. This set of simple elements creates a sort of a story about my biology-based imagination and about impossible possibilities...

The project can remind eugenic way of thinking and be controversial because of it. Although, the goal is to post a questions about our possible future and new forms of our liminal „self“.

OFFLINE information – unusual frequencies

What happens when we look at the frequencies beyond human hearing? Listening to rats, bees and others, artist Kathy High will discuss our limited human parameters. And ultimately how can we evolve to better understand our environment.

This talk uses art projects, such as Rat Laughter, by High, to discuss how we understand communication outside of the limitations of our physical sensing capabilities, in what is known as the ultrasonic range. As well to be considered is Brian House's work Rat Radio/Urban Intonation where he worked with NYC urban rats to understand the social structure and how we "negotiate our place in a dynamic city, so have rats developed elaborate social codes intertwined with urban architecture and geography."

(https://brianhouse.net/works/urban_intonation/) Among others.

Rat Laughter investigates the high frequency 50 kHz ultrasonic calls, or "chirps," that are distinct from other vocal emissions in rats. Rat laughter captures these ultrasonic vocalizations that are stored in a library of rat giggles. This project is based on the human phenomenon of the contagious nature of laughter – hoping that the rats will exhibit a positive response to the other "rat laughter" sounds played for them. By examining the communication system of rats, how can we begin to redefine the applications of ethical technologies that consider and care for our shared acoustic ecology? This talk looks at the ultrasonic environment in which we all live. Although humans don't experience ultrasonic frequencies through our physical state of hearing, which has a threshold of 20 kilohertz, we are sensitive to sound beyond our physical hearing. But perhaps we can train ourselves to "listen" beyond our means.

Using texts of the late Pauline Oliveros, founder of the Deep Listening practice, and other studies and observations, High will take this talk to ways we must now consider energetic encounters.

KATHY HIGH

Kathy High is an interdisciplinary artist, educator working with technology, art and biology. She collaborates with scientists and other artists, produces videos, performances and installations and considers living systems, empathy, animal sentience, and the social, political and ethical dilemmas of biotechnology and surrounding industries. She has received awards including Guggenheim Memorial Foundation, Rockefeller Foundation, and National Endowment for the Arts. Her artworks have been shown at documenta 13 (Germany), Guggenheim Museum, Museum of Modern Art, Lincoln Center and Exit Art (NYC), UCLA (Los Angeles), Science Gallery, (Dublin), NGBK, (Berlin), Festival Transito_MX (Mexico), MASS MoCA (North Adams), Esther Klein Gallery (Philadelphia) and Para-site (Hong Kong). High is Professor in the Arts, and has a lab in the Center for Biotechnology and Interdisciplinary Studies at Rensselaer Polytechnic Institute, Troy, NY. She hosts bio/ecology+art workshops and is creating an urban nature center in North Troy (NATURE Lab) with community media organization The Sanctuary for Independent Media. She is an ongoing Vivo Art artist in residence with the Center for Microbiome Sciences & Therapeutic, DePaolo Lab, School of Medicine, University of Washington, Seattle.

www.kathyhigh.com

Beginning Endless Forms

How does form within painting evolve? Is it possible to make a painting the way that nature makes forms? Can a painting be an act of nature? This project investigates form through the lens of evolutionary developmental biology (evo-devo). Evo-devo is a field of biology that compares the developmental processes of different organisms to understand the relationships between them and how they evolved. I use the term form in two ways. In biology, as a group of organisms within a species that differ from similar groups. In art, as the overall form taken by the work – its physical nature. Using both of these definitions as a platform for inquiry, I am interested in how form is generated and evolved. It is through the act of painting that I combine these inquiries to explore the evolution of form in painting. I do not seek to represent nature, but to interpret natural elements and phenomena through the lens of an artist.

The series of 15 paintings uses nature as both subject and object. Pieces of nature, both real and artificial, are attached to the surfaces of the canvases including: artificial leaves and flowers, shells, dried mushrooms, rubber, latex, silicone, dried botanicals, bark, and other specimens and ephemera. In contrasting these elements with the elements of painting: stains, washes, impasto, gesture, color, brushstroke, I examine not only the nature of form, but the nature of painting itself. As such, this project delves deeply into the history of painting and the various techniques and strategies a painter uses while making her works. For example, I often use the technique of staining canvas, a modernist technique that references artists such as Helen Frankenthaler. Combining this technique with the application of natural, physical objects simultaneously pushes painting into a new territory while referencing its history. The resulting works are assemblages that collide natural objects and painted surfaces, creating an aesthetic that is at once corporeal and seductive.

This project requires heavy experimentation with materials

and motifs, and their (re)combinations within the individual works of art. If I consider each element in the painting as a metaphor for a single-cell, then each painting can be considered an individual, fully formed organism. By repeating this process to create the series of paintings, I am enacting the evolutionary process. My goal is to reveal a vivid picture of the process, of making forms, of making paintings, and how various kinds of changes in that process generate novel forms, novel paintings. I also want to open up the field of painting to engage with biology, not only as a scientific inquiry but as an aesthetic field, which in turn opens up a dialogue about what a painting can be. My ultimate goal is to push painting into new territory- joining painting to fields of inquiry that instigate novel connections with exciting results.

KRIS CASEY

Kris Casey is a visual artist and creative researcher from Chicago, IL. Her work draws heavily from various fields of philosophical and scientific inquiry, including evolutionary developmental biology, bio-aesthetics, evolutionary aesthetics, and genetics. Her research and practice examines relationships between biology and technology, natural and artificial, material and immaterial, subject and object. Her paintings can be seen as assemblages or accumulations of natural and technological elements whereby the biological concepts of mutation, contamination, decay, generation, emergence and metamorphosis become modes of inquiry into the production of novel forms. Kris has a BFA in Painting from Columbia College, an MA in Digital Media: Technology & Cultural Form from Goldsmiths, University of London, and an MA in Letters, Art, and Contemporary Thought from Universite Paris 7 Diderot in Paris, France. Kris was an artist-in-residence at the Cite Nationale des Art in Paris in 2015. She was awarded the Individual Artist Project grant from the Department of Cultural Affairs and Special Events in 2016 and an Individual Artist Support grant from the Illinois Arts Council in 2018. Exhibitions include “Abstract Mind” at the CICA Museum in 2019, as well as “Art Teleported, Brooklyn” in which she presented her project “Posthuman Painting”. She is a Phd Candidate in Philosophy, Art & Critical Thought at the European Graduate School.

Consensus, political correctness and staying within one's comfort zone

LAURA BELOFF

Laura Beloff (Finland) is an internationally acclaimed artist and researcher who functions in between academic research and artistic practice with a core in artistic methods. She has been actively producing art works and exhibiting worldwide in museums, galleries and art events since the 1990's, in Ireland, Denmark, Norway, Belgium, Finland, Germany, Austria, Brazil, Russia, Italy... Her research interests are in the cross section of art, technology, biology, biotechnology, and philosophy. Throughout the years she has been professionally active and has influenced many art projects and initiatives, especially in Scandinavia. She has also engaged in numerous international activities including: participation in international research and art projects, in organizing international conferences and art events, invited speaker in many institutions, events and conferences, international reviewer of publications and funding applications, and invited art & research visits. 2012-until spring 2019 she has been Associate Professor and also head of PhD School at IT University in Copenhagen.

<http://www.realitydisfunction.org/>

The talk will address problematics in consensus, political correctness and staying within one's comfort zone – in art and research.

The term political correctness is commonly used to describe language, policies, behavior, or measures that are intended to avoid offense to members of particular groups in society. The term entered the common spoken language through the feminist and left-wing movements in the 1970's in USA and rapidly spread throughout the industrialized world. The focus at the time was on language and terms that were considered discriminating between races and genders.

In the recent years – we (humans) have become widely aware of environmental and climatic challenges, e.g. how our attitudes towards environment and non-humans and lifestyle, which we have grown up with, are simply not sustainable in the future. This has boosted a curiosity in the artists towards natural environment and non-humans, and at the same time a widescale search for solutions in more considerate and sustainable life-styles are in-progress. From a brief look into art works, it seems that there has been a need to represent politically correct ways to consider the living world beyond human. At the same time, humans have been put on a guilt trip based on our previous and current behavior and actions – also for legitimate reasons.

The talk will address questions – concerning art's role, radicalism in art, echo-chambers present in art, and point to a consensus that drives and manipulates things to become expected, didactic, repetitive and even dull.

Sci-art Expanded: Women in the Lab, the Clinic and the Field

Sci-art Expanded is a mixed authored and edited volume that will study research-based art practices. This is written from an interdisciplinary perspective, combining feminist science and technology studies and visual culture studies to approach contemporary sci-art as it is practiced by women artists who work in the lab, the clinic, and the field.

Our study focuses on practices, studying women artists who are taking up the technologies and lab procedures of science and engaging practically with new developments within science – thus following STS scholar Joan Fujimora's (2006) claim: "I propose, then, that feminists and social scientists go beyond simply accepting or critiquing the products of science to engaging in the actual production of science". Classic work in STS point out how laboratory work is transformed to scientific facts while the science practices behind the results are black-boxed (Latour 1987). Science procedures are increasingly becoming closed, or black-boxed, by the employment of complex technologies and standardized procedures. We see the practices of sci-artists as a way of unveiling the black-boxed procedures of science. Artists sometimes pose questions that seek to unwrap these mysteries, for instance by using the same technologies for different aims and with different materials – revealing a credo in STS: it could always be otherwise. The very products in sci-art are figurations of alternative futures. It is Sci-art's practices of re-opening science that made us turn to sci- and bioart for providing fascinating and promising approaches to the emerging biosciences.

The paper will address some questions and paradoxes of sci-art practices. One is a seeming paradox between the updated and complex technical equipment in bioart labs in contrast to the emphasis on haptic experience with the material. Another is the question of authenticity and truth claims in sci-art.

LISA CARTWRIGHT

Lisa Cartwright is Professor of Visual Arts, Communication and Science Studies at the University of California, San Diego, here she teaches history and theory of media and speculative design across theory and practice. She is a writer and theorist of feminist technoscience, art and technology whose books include *Screening the Body*, *Practices of Looking*, and *Moral Spectatorship*. With Merete Lie, Christina Lammer, and Nora Vaage, she is working on a new book about women sci-artists, written from a feminist science and technology studies perspective. It is a revisionist history and a mixed ethnography of dynamics of practice and care across the lab, the clinic, and the field.

MERETE LIE

Merete Lie, Dept. of Interdisciplinary Studies of Culture, Norwegian University of Science and Technology. Her field of research is feminist technoscience. With a background in social anthropology she has been working across the interdisciplinary fields of Gender Studies and Science and Technology Studies. Her research started with changing technologies in working life and globalization of work with fieldwork in SE Asia and China. During the last years, her interests are biopolitics, assisted reproductive technologies and bioart.

Transcending the Binary- Sensory and Spatial Koans in the Land of 1s and 0s koan (n.) a paradoxical anecdote or a riddle that has no solution; used in Zen Buddhism to show the inadequacy of logical reasoning

Taking as a departure point Lygia Clark's koan-like use of paradox and material juxtaposition this talk asks how her methods might be deployed in the context of contemporary technologies, like embedded electronics and algorithms, and what we might make if we take the spatial or sensory koan as a strategy when building with these materials. It will introduce the spatial koan as a lens through which to view Clark's work, discuss her use of sensory juxtaposition in the object based therapeutic treatment she devised called Structuring the Self, and introduce The Relational Objects Project, currently in production, as an example of how this framework might be applied in the context of contemporary materials. This work developed through research in Clark's archives and conversation with Lula Wanderley and Gina Ferreira, two psychotherapists trained by Clark in her Structuring the Self practice. Lygia Clark coined several phrases that capture the way her objects sensorialized paradoxical concepts. One phrase in particular, the empty/full, embodies a koan-like relationship to space. She often referenced this concept but the Bichos are the first of her objects that embody it. When one plays with the Bichos, geometric sculptures made participatory and kinetic through hinge connections, the object's planes are both inside and outside while its forms create containers that are simultaneously cavities. Considering Clark's Bichos as spatial koans suggests the spatial or sensorial koan as productive strategy for building with contemporary technologies.

As a contemporary artist, I am interested in embedded electronics and algorithms as contemporary materials. Our daily lives are cluttered with interactions with these materials but the majority of these experiences are centered around systems of

surveillance, control, or entertainment as vehicle for creating capital. There is still a vast and under populated territory of, as Dunne and Raby put it, electronic objects 'as medium for experiencing complex aesthetic situations'. I am particularly interested in these materials' potential to create new types of sensory experience. I see Lygia Clark's spatial koans as a productive framework for structuring explorations into how these materials create novel sensory experiences that convey complex aesthetic situations.

The Relational Objects Project is a set of interactive sculptures focused on the qualia of gestural interaction. These objects borrow from Clark's strategy of material and sensory juxtaposition. They take as their ground sensations like the feeling of eyelashes brushing one's skin and use embedded electronics to create sensory juxtapositions. These objects highlight the paradoxical nature of gestural communication while simultaneously focusing attention on the embodied aspects of these interactions. They are a set of objects that pair simple gestural interactions with surprising sensory stimulation. Other objects in production include a fur covered sculpture that when stroked gently emits abrasive noises and when stroked roughly emits harmonic tones and an object that translates patterns of breath into tactile sensations.

LIZ LESSNER

Liz Lessner is a sculptor and installation artist whose work combines traditional fabrication techniques and emerging technologies to create sensory experiences that reframe common occurrences and routine encounters.

She is currently a Fulbright Scholar affiliated with the CrossLab Research Group and the Lab for Innovation and Prototyping at the University of Fortaleza in Ceará, Brazil. Lessner has had solo shows at Honfleur Gallery in Washington, D.C.; Big Orbit, a Center for Exploratory and Perceptual Arts Project Space in Buffalo, NY; The University of Oregon's Eric Washburne Gallery in Eugene, OR; and an upcoming show at VisArts in Rockville, MD. She has exhibited her sculptures and installations nationally and internationally including the Guapamacátaro Center for Art and Ecology in Michoacán, Mexico, A.I.R. gallery in Brooklyn, NY, and Everard Read's Circa Gallery in Cape Town, South Africa. She has an MFA in Media Study from the University at Buffalo. Her research into embedded electronics ability to create novel sensory experiences has been supported by grants like the Mark Diamond Research Fund, fellowships like the Eyeo Artists Fellowship, and awards like a 2019 Fulbright Research Award to Brazil.

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Cyberwitches manifesto

Magic is will — action, directed energy, choices made not one but several times. In the first place, magic is a clear intention embodied, expressed in words, repeated in gestures, materialized in efficient and symbolic objects.

Magic could be considered as an applied science based on the understanding of the creation of forms by energy and the direction of energy by the forms. It concerns shapes, structures, images that can drag us out of the limits imposed by our culture. Magic includes politics. We acknowledge that we're living in a hybrid world, together physical and digital. So our magic is techie. As hybrid entities living in a hybrid world, we perform technophile rituals. We create our own emerging and experimental traditions, using social network to bring us together for political and spiritual rituals, using smartphones and tarot cards to connect with the Spirits, making electronic DIY to listen the hidden waves...

We are a fringe and actuating community kneaded by the words of our predecessors. W.I.T.C.H. (1960's / 2016), VNS Matrix (1991), Gynepunk (2016) are our sisters. Reclaiming, technoshamanism, xenofeminism, hyperstition and ancestorfuturism are our inspiration. We've lost the ancient technics and traditions to honor the Gods so we invent methods mixing ancestral and invented ways to reveal the porosity of the worlds — ours, the Gods' we no longer believe in, the free cosmogony and ctional entities' that we create. We perform this psychology and technology of immanence, based on the understanding that everything is interconnected, that Dion Fortune named «Magic»: the art of changing consciousness at will. Consciousness gives shape to reality. Reality gives shape to consciousness.

We are corporeal, biological, incarnate entities, but also and simultaneously: relational and informational. We are entities with digital extensions. We live in a physical, technical and digital world. Our contemporary everyday technical equipment takes part

to our ritual forms. We consider the magical power of words and images, their capacity to be something and at the same time, not to be another thing that yet they make present through them, that yet they show. We take the stand of images and words always 'already there' — and therefore, never really here or now.

We make the gestures.

We say the words.

We manipulate the objects.

We summon archetypal survivals.

We call for the emergence of egregore.

We seek for upsurge, we seek for a eeting energetic symbiosis.

We are cyberwitches.

LUCILE OLYMPE HAUTE

Lucile Olympe Haute is an artist, PhD in fine arts, lecturer in Design in Nîmes University (France) and associate researcher at the Paris National Art and Design School (EnsadLab-PSL). Her approach is a research by and through art & design. She uses actual tools and techniques, from the more traditional ones (ritual, drawing, wood, photography) to more modern ones (digital technologies, video, virtual reality, apps). As witch as cyborg, she studied the habitability of the modern world through performances. She also studies graphic, editorial and interactive design. She is a member of the informal group PrePostPrint and the ecofeminist group Reclaiming France.

Faces: microbiome and artistic eternity

MARIA FRANCISCA DE ABREU-AFONSO

Maria Francisca de Abreu-Afonso (Lisbon, 1994) has a bachelor in Biology from the Faculty of Sciences (Lisbon, 2012/2015) and a masters in multimedia art, with a specialization in Photography, by the Faculty of Fine-Arts (Lisbon, 2016/2018). She is currently in a post-graduate program in Discourses of Contemporary Photography, at the Faculty of Fine-Arts (Lisbon). In 2016, Maria Francisca represented Portugal in the first EUFA, category of the European Film Awards (EFA), in Hamburg. In 2017, she has won a scholarship by the Faculty of Fine-Arts to the artistic residency of Cultivamos Cultura (Odemira). In 2018, she was one of the selected artists for the GAB-A award given by Casa das Artes de Tavira (judges: artists David Evans, Emília Nadal and Margarida Palma). Since 2017, she has been exhibiting her work in collective shows (Lisbon, New York, Mexico and Toronto). Her short-filme (codirector Clemens Schöll) was exhibited in Leipzig and Berlin. Her pieces are about identity, search for the self and the relationship with the other.

The face is probably the most important element of communication in the human body. It's the subject of intensive work in both Art and Science. There's an obsession to either understand it — the study of micro-expressions, for example — or to conserve it in the form of image or object — in the artistic universe. This relationship of art with the face and the body goes along way back, with the most likely first representation of the human face dating of 2700 a.C.: a sculpture of the superintendent Ebih-II, of the ancient city of Mari (now eastern Syria).

We are genetically social and thus the face is essential to a common existence. It's a mirror of our feelings, it's the gun we point at others — no wonder why artist work around it so much. But, nevertheless, the attempt of conserving the face is fruitless. In reality, the face is much more than the surface that artist represent, it goes beyond something the body and the self owns. As a whole, it's dependent of other beings: microorganisms. The presence of other beings in our body seems to be viewed as a taboo. There's a certain disgust in bringing that type of conversation up. But that is the utter true. My piece Cabeças Falantes (2017) is made out of faces in agar-agar and each person's face microbiome. As the piece degrades, and eventually the agar-agar faces disappear, our own idea of transcendence is put into perspective. We, as humans, are perishable. Our face, one day, will also disappear. My face is just as biodegradable as an agar-agar sculpture. As art wishes to perpetuate human presence, moving from mortal to immortal, and thus human's faces, my piece proposes a face that perishes, a face that doesn't transcend.

Besides this, there's a different point to it. The faces of people turn into ghosts and their face's microbiome turns into the subject. This inversion of the phantasmagoria is precisely about giving space for a different part of ourselves to appear, because the face is more than human. The taboo of the human body being something else besides human is laid down on a light table. And, even though I'll probably never attain transcendence, the sole fact that I'm more than human and I need to be more than human to survive is, perhaps, in itself, transcendent enough.

BECOMING CELULAR SELF: Organized Rehearses of Acquired Experience

This presentation will reflect on the development of an experimental visual arts project in the interface of Art and Science. This project is supported by a multidisciplinary group and is being produced in several institutions of the city of Porto, namely Casa Museu Abel Salazar, ICBAS and i3S.

The project reflects on the scientific career of Abel Salazar, who left us a vast and varied work in the fields of science (medicine and histology) of the visual arts (painting, sculpture, drawing and engraving) of writing (critical and philosophical essay) and pedagogy (university teaching). We intend to homage to Abel Salazar's complex interdisciplinary work with a multidisciplinary artistic project that crosses the visual and technological histological exploration of the physician with the complexity of the tensions of biotechnology and ethics in the contemporary world. Concepts of cell, becoming, flow, symbols, protocols, metaphors, transparency and others, both measure the work of Abel Salazar and have anchored many of my artistic projects. The work may be presented in several moments with varied forms and formulations including audiovisual presentations or more focused on the design process or even including materials biological terms corresponding to a notion borrowed from the author of the concept, in this case the work as an organized essay of experience acquired by the group.

MARIA MANUELA LOPES

Maria Manuela Lopes is a visual artist whose practice is transdisciplinary, investigating relations of memory and identity informed by the biological sciences and medical research; through multimedia installations, drawings and performances - occasionally including biological materials. Maria Manuela Lopes studied sculpture at FBAUP and did an MA at Goldsmiths College in London. She has a Doctorate in Fine Arts and New Media at the University of Brighton and UCA-Farnham in the UK. She has developed a Postdoctoral Art Research Project at the University of Aveiro and Porto (ID + Institute of Research in Design, Media and Culture) and i3S Institute of Research and Innovation in Health. She is currently a researcher at i3S Instituto de Investigação e Inovação em Saúde as co-responsible for the Cultural Outreach Art/Science interface of the Institution. She has curated several international exhibitions. She is the author of articles and book chapters in several national and international publications (as well as invited as a speaker). Her work has been shown nationally and internationally since the 90's. Maria Manuela Lopes is cofounder and Deputy Director of Portuguese artistic residency programs: Ectopia- Laboratory of Artistic Experimentation and Cultivamos Cultura.

Aesthetics of a microbial planet: rendering visible the invisible in art and biology

Microorganisms are the species classified together by being invisible to human eyes without mediation. With an array of technologies of display, art renders microorganisms visible iconically, indexically and by framing the presence of the biological matter, their microperformativity. This paper explores and develops how microorganisms are conceptualized in contemporary art, represented as an aesthetic object, as a scientific object and as life itself in wetmachines, to embody and imagine the posthuman, a microbial posthuman.

The need for mediation to render microorganisms sensible, to render them aesthetical as visual or as sound, turns artworks into a phenomenon where the observer, observed and medium are entangled (Barad 2006). This paper looks at the ways these phenomena in art define and frame microorganisms to bring them into being in a particular way.

First it looks at iconic images, representation of microorganisms in painting in contrast to the search for objectivity in microscopy. In this level, microorganisms are constructed as an aesthetical object and an object of scientific interest. This includes the work of Tal Danino, Anna Dimitriu or Sabine Kucunko, that define microorganisms anthropocentrically.

A second mode of representation -the framing of living organisms- microperformativity (Hauser 2016) is the technology of culture, mainly in Petri Dishes. This technology originally for experimental life sciences and now adopted as an artistic medium allows for the aesthetical display of microorganisms as visible groups in colonies. Petri dishes simultaneously bring forth the aesthetic dimension of the microbial their in shapes and colors, but also present them as an object of scientific interest in the framing of the Petri Dish as a scientific instrument. There are abundant examples, starting for the work in the 1980s by Peter Gerwin

Hoffmann, Marta de Menezes, Ken Rinaldo to the recent work of Pei Ying Lin. Microperformativity also includes the widespread use of the symbiotic biofilm of Kombucha. This medium has become popular in the arts for its cellulose materiality, as a biomaterial and metaphor for interspecies collaboration.

Finally, microorganisms are constructed in art as wetmachines and in with wetmachines, becoming an integral part of an entanglement of technologies as instruments. These cyborg, postanthropocentric relations become the material speculation of a microbial posthuman in art. Looking at the wetmachines of Gilberto Esparza, Interspecifics and Philipe Parreno, that develop media arts that conceptualize microorganisms intra-acting with machines, as phenomena of the microbial posthuman.

This paper, therefore, explores the potential of art in conceptually constructing microorganisms, an object traditionally reserved for the study of the scientist in the life sciences. It explores how art as a necessary mediation to render microorganisms visible and sensible, it defines and conceptualizes them, and how it ranges and transits from an anthropocentric representation into a material speculation for a microbial posthuman.

MARIANA PÉREZ BOBADILLA

Born in Mexico City, Mariana Pérez Bobadilla is an Art Historian and DIYBiologist concerned with the intersections of Art, Science and Technology. She received an Erasmus Mundus Scholarship to study a Master in Gender Studies at the University of Bologna, Italy, researching Feminist Epistemology and Contemporary Art. She has presented her work in ISEA 2012, and has been involved in the Mexican Pavilion of the 56th Venice Biennale. Her academic training includes courses with Rosi Braidotti, Magali Arreola and the international curators course of the 2014 Gwangju Art Biennale, in South Korea. Awarded by the Hong Kong PhD Fellowship Scheme, her research in the School of Creative Media revolves around Art and Biology, Epistemology, History of Science, deep time histories of representation, New Materialism, Biohacking, Wetware and bacteria.

Incident Energy Project: Thermal Imaging as an Art Form

Incident Energy Project is at the intersection of art, science and the human body, using invasive surveillance technology. I chose military-grade infrared imaging technology for its surreal beauty and to address contemporary issues of surveillance culture that changes human interaction in creative and philosophical ways; a subtext is our (c)overt acceptance of the electronic villain/wizard into our lives. Contemporary art constructs are important ways to depict aesthetic beauty, political agendas, taboos, and provide a new way of perceiving the Self. Incident Energy Project contains three experimental films spanning over twenty years, offering a glimpse into visual worlds hidden from our perception. Eerie black-and-white thermal video transports the viewer into an otherworldly space, Range Phenomenology (infrared) visualizes the surreal beauty of our temporal coalescence of ancient stellar energy, drawing on analogies about the universe- that we are truly beings of light. Actual surface temperature changes in corporeal and inanimate objects are seen in real time, where heat appears white, cold/wet areas are black. 'Haute Flash' (2017) is about the hormonal transition of menopause, shot with an infrared hunting rifle scope. Two films were made in collaboration with Jacob Pander. 'Incident Energy' (2013) is a multichannel video weaving a simple creation drama about the cyclical nature of energy. Dancers express intelligent movement in a timeless terrestrial realm, juxtaposing a contemporary hospital birth; reflecting love, conflict, death and beyond. 'The Operation' (1995) is an explicit, sci-fi, cult classic film of a patient and surgeon scenario, the first of its kind. These works were made with surreptitiously sourced military-grade imaging technology often used for global warfare, but instead are used as a tool to make videos and contemporary art that is focused on the fragile beauty of humanity.

Infrared surveillance cameras, binoculars and rifle scopes is both the means of digital image capture, and the surreal aesthetic

itself. Shining the Klieg lights back at military/surveillance culture provides creative commentary relating to public surveillance and privacy issues. 'Bardo ∞ Project' is my ongoing end-of-life social practice artistic endeavor exploring creativity as a form of spiritual end-of-life care, illuminating the positive effects of art as mind + body are integrated; coupled with relics from those journeys. Towards this work I became an end of life doula, a volunteer role in which I act as a liaison for patients and their families.

Here I use thermal video stills as source imagery for collaged photography and video works to present ideas about the physical expiration, and spiritual transformation of life, and expand upon the idea that we are made of stellar energy and return to these origins.

MARNE LUCAS

Marne Lucas is a multidisciplinary artist based in New York, USA who uses photography, video and sculpture in her creative investigations at the intersection of art, feminism and health, working in conceptual overlaps: life's energy, the environment, beauty, the body, identity, intimacy and mortality. An infrared video pioneer, Marne uses military-grade thermal imaging technology to reference surveillance culture and the fragility of human existence. Her recent black & white infrared short film on menopause *Haute Flash* (2017), was made for *Transitional States: Hormones at the Crossroads of Art and Science*, a video exhibition series at Space Plus, Lincoln, U.K, Peltz Gallery, London, Centre de Cultura Contemporània de Barcelona, and Sala Borsa, Bologna. Marne steadily exhibits nationally such as 'Then She Did' at Plaxall Gallery, NYC and internationally, and has received a 2018 grant from the Upper Manhattan Empowerment Zone Development Corp., a 2016 Arts/Industry Kohler Co. factory residency (Foundry, Pottery), the Land Art Mongolia 360 Residency + Biennial, 2012 CentralTrak experimental film residency, the Portland 2010 Oregon Biennial, and a public art commission for the PSU Smith Memorial Student Union Public Art + Residency Projects: State of Oregon % for Art Program' (2009). Lucas is in training to be an INELDA certified end-of-life doula, and serves as a client board member to URAM, a Harlem United health agency. Marne is a co-founder of Contemporary Artists Presents...a New York-based feminist artist collective.

The 7th Sense

MARTA DE MENEZES

Marta de Menezes is a Portuguese artist with a degree in Fine Arts by the University in Lisbon, a MSt in History of Art and Visual Culture by the University of Oxford, and a PhD candidate at the University of Leiden. She has been exploring the intersection between Art and Biology, working in research laboratories demonstrating that new biological technologies can be used as new art medium. In 1999 de Menezes created her first biological artwork (Nature?) by modifying the wing patterns of live butterflies. Since then, she has used diverse biological techniques including functional MRI of the brain to create portraits where the mind can be visualised (Functional Portraits, 2002); fluorescent DNA probes to create micro-sculptures in human cell nuclei (nucleArt, 2002); sculptures made of proteins (Proteic Portrait, 2002-2007), DNA (Innercloud, 2003; The Family, 2004) or incorporating live neurons (Tree of Knowledge, 2005) or bacteria (Decon, 2007). Her work has been presented internationally in exhibitions, articles and lectures. She is currently the artistic director of Ectopia, an experimental art laboratory in Lisbon, and Director of Cultivamos Cultura in the South of Portugal.

<http://martademenezes.com>

“The brain is our computing machine that integrates stimuli from the environment and orchestrates responses to these stimuli. Here, I propose that the defining role of the immune system is to sense microorganisms and to inform the brain about them.” Kipnis 2017 This year the presentation I bring to FEMeeting explores the limits and boundaries of understanding the self. Inspired by the article about the immune and the neurological systems by Jonathan Kipnis, published in January of 2018, I aim to carve paths and engage with some of the possible embodiments of the self and the non-self. Kipnis tells us a tale of two systems, the central nervous system and the immune system. As the two systems were believed to function separately from each other to ensure a person’s health Kipnis explains that while there are many commonalities shared by both systems, the interaction between them, when it occurs, has been considered for decades as pathological. Kipnis continues explaining that we have five we accepted senses— visual, olfactory, gustatory, somatosensory, and auditory. Also, Kipnis adds, there is the vagus nerve that delivers information about our visceral organs to the brain, referred to by some as the sixth sense (Zagon, 2001; and the proprioception, a sense of position and movement, that is also often referred to as the sixth sense; Smith, 2011). For FEMeeting 2019 I propose to reflect on the 7th sense, just now being tentatively defined and described by Kipnis. He proposes that the immune system needs to be thought of as the sense to sense the microorganisms and to deliver the necessary information about them to the brain. The immune response, therefore, should be hardwired in our brain, which would make the immune system our “seventh sense”.

Macro 3D

As a ceramist and sculptress I am always searching for forms and shapes that don't exist yet... I am going to present an idea for a new series of sculptures that somehow has to do with the connection of science and art, with "cultivamos cultura"!

MAYA FERNANDES KEMPE

Maya Fernandes Kempe is a ceramist, sculptress, art pedagogue.

Founder of espaço azul in Lisbon, worked 9 years in several artistic and educational projects in the museums of Berlin, teaches art pedagogy and ceramic sculpture at the Lisbon based art school nextart. Founder (with Ana Baleia, João Veiga and Sérgio Fernandes) and member of the recent artcenter Ateneu do Catorze in São Luis.

MAYA MINDER

Since 2016 she has collected experience in giving workshops on the broad topic of fermentation, cooking and DIYbio, teaching more than hundred people the technics and knowledge of working inside one's own kitchen and local community. Workshops is her main format to provide a platform for open discussion on the practice of socio-political, economic, ecological, gender-based, artistic and scientific references. Globally growing grassroot, DIY and DIWO (Do it with others) movements are spread with the tools of citizen science. Hand-on sessions, body knowledge, urban gardening, foraging, soil projects, wildherbs, composting or food saving, all of them have their own, existing and new knowledge in the local community to experience and exchange through direct practice but interwoven as a global growing bottom-up movements in the younger generations. Meet-ups, eat-ins and walks are similar formats used worldwide for sharing, researching and exploring ideas.

<https://www.mayaminder.ch>

Careermaking as biohacker, or how to become a slime mold

Maya Minder joined Hackteria in 2017, realizing that by her practice of wild fermentation she has always been a biohacker, working with microbes and fungi in a intuitive and intrinsic way.

Inside this circle of DIYBio and hackers she always considers her practise more on the physical then digital wolrd and therefor acts as an ambassador inside the hacker and science community for empowering one's human-given instincts to revitalize inborn common sense to seize the world from anew.

Ancient Light: Rematerialising The Astronomical Image

How can the field of astronomical photography, viewed through the lens of new materialism and photographic theory, alter our collective perception of ecology?

Melanie is interested in the relationship between starlight, photography and materiality. Melanie's PhD research project 'Ancient Light: Rematerialising the Astronomical Image' considers how light travels thousands, if not millions of years, before reaching photosensitive film or a digital sensor. Melanie's body of photographs 'Ancient Light' comprises of a series of analogue photographic negatives and prints of star-scapes, as well as a series of images created using telescopes and observatories around the world. Alongside this body of work, Melanie has produced 16mm films of the Moon and photographic etchings created using meteorite-imbued ink, milled at the Royal School of Mines. Melanie has produced daguerreotypes and world-record sized cyanotypes exploring the relationship with the Sun and photosensitive material.

Melanie's practice-based research has taken her on a journey far and wide, including collaborative projects with the UCL Observatory in London, Kielder Observatory on the border of England and Scotland, the Laboratory for Dark Matter Research in Boulby, UK and the EU Commission in Ispra, Italy. Melanie has participated in residencies in Iceland, Italy, Spain, Grizedale Forest, UK and Cornwall, UK to spend time under the night sky. For her research, Melanie has looked at analogue astronomical specimens within the UCL Space History Archive and the Royal Astronomical Society in London. Further afield, Melanie has visited the Mount Wilson Observatory, Carnegie Archives and Hale Solar Laboratory in California, USA as well as the European Space Agency in Leiden, the Netherlands. Ancient Light considers the moment in which the photon is created within the energetic furnace of a star, the long and tireless journey of the photon from a star to Earth, and the eventual absorption of the photon within photosensitive silver gelatin film. At the heart of this study is an exploration into new materialism, considering how the study of materiality and processes can affect our conception of the world around us. New materialism also triggers an enquiry into the materiality of the photographic, the ontology of the photograph itself.

MELANIE KING

Melanie King is an artist and curator with a specific focus on astronomy. She is co-Director of super/collider, Lumen Studios and the London Alternative Photography Collective. She is a lecturer on the MA programme at the Royal College of Art, and on the BA Photography course at University of West London. Melanie is a part time doctoral student at the Royal College of Art. Melanie's solo exhibitions include Leeds Art University and the Blyth Gallery, Imperial College London. She has exhibited in group shows at The Photographers' Gallery, Argentea Gallery, Guest Projects, Space Studios and the Sidney Cooper Gallery. Melanie has also exhibited in a wide range of international galleries and has been involved in a number of large scale commissions. She has developed workshops for the TATE Modern, Whitechapel Gallery, The Photographers' Gallery, TATE Exchange, the Institute of Physics, East Street Arts, Kosmica: Mexico, SALT Festival: Norway, London College of Communication Short Courses, Photofusion, Phytology, Hackney Arts, Ditto Press and Brighton Photo Biennial.

Questioning Scientific Knowledge. Proposition for Sensible Methodologies and Visual Productions of Doubts

MICHELA VILLANI

Michela Villani is visual artist and sociologist. She is Senior Researcher at the Department of Social science of the University of Fribourg (Sociology). Primarily based in Switzerland, her work joins discussions in the fields of sexuality, gender and migration through a critical analysis of the new forms of displacement of practices and representations and their effects in terms of inequalities. She previously worked on female genital mutilation as public problem (EHESS, 2005-2006), on women's journeys to clitoral reconstruction after excision in France (EHESS, 2006-2012); on the secrecy of the HIV status of sub-Saharan women living in Switzerland (FEMIS, FNS/2012-2014); on racial prejudices and their effects on sexual health of young sub-Saharan people living in Switzerland (JASS, FNS/2015-2018). Alongside qualitative sociological methods, she explores in her works the visual representations and the images of gender and sexuality produced by, and circulating in, scientific imagery as well and the public sphere. Her new interests bring on sensitive research methodologies. She is interested in developing and implementing research and art's methods through new technologies.

As scholar working in the academia, I produce scientific data. Coming from the social sciences, I used quantitative and qualitative methods within my researches. Given that data are already a product of the scientific activity, which is filtered by the action of the researcher, the position of the researcher itself needs to be investigated. In fact, the subjectivity of the researcher is involved from the very beginning and along all stages of the research: from the conception and the research design (defining the question), the data collection (interactions within the field), the interpretation of the results (data's selection and analysis) to the restitution (scientific production). Standing on feminist epistemologies (Balsamo 1996, Butler 1993, Grosz 1994) and theories of the point of view and of situated knowledge (hooks 1992, Spivak 1988), my communication will question all those "marginal" and invisible activities of the scientific knowledge and production. My work particularly focuses on those human operations behind the scientific scene and preceding the final results and broad communication, namely: doubts, errors, uncertainties, hesitations, ambivalences, and indecisions. Which are the processes before achieving the result? How researcher makes numbers or data "speak"? Which are the theoretical foundations of margins, errors and finally doubts? How are they problematized and illustrated in the scientific field production? Through a work of imaging the "sidelines " activities, in this presentation I will try to define a sensitive methodology by imaging the scientific doubts. Finally my proposal for a sensitive methodology consists in identifying and taking into account (collecting, observing, recording) the signs of the researcher's subjectivity and the senses.

Qiscape: A Sonic Performance Series Investigating the Chinese Medical Body

This presentation explores relations between the socio-technical body and the 'ground' of nature (the lifeworld) via the new interpretation and utilisation of tools (qi 器), the body and environment/framework (as dao 道) (see Hui, 2016). Drawing upon my expertise as an artist and clinical acupuncturist with training in biomedicine, my artistic research adapts Chinese medicine practice into a strategic tool to investigate new synergies between art, medicine, technology, East, West, modernity and pre-modernity. In my performances, I use Chinese pulse diagnosis and acupuncture point location as transdisciplinary artistic technologies (qi/器) that are capable of measuring and responding to quantum entanglements between individuals and their social, natural and cosmic milieus - or what can be referred to as tao 道 (see Hui, 2016). This is achieved by combining the principles of Chinese medicine with digital (audio software and physical computing) and 'moist' media (the body).

As Chinese medical philosophy elaborates on the cosmological relationships between the interior and exterior of the body in terms of dynamics of qi 气 and tao 道, by developing a new instrument/tool (器) that reads, visualises and sonifies the body's acupuncture points and the flow of the meridians in real-time, qiscape performances not only produce unique experiences of embodiment for the audience, it demonstrates the body/environment relationship in forms and processes that differ from current scientific/biomedical models. Moreover, by re-staging the technologies of the Chinese medicine clinic within the public domain, my research utilises the performative element of the Chinese medical encounter to enable greater reflection of and renegotiation of art, medicine and technology and their current

MICHELLE LEWIS-KING

Michelle Lewis-King is an artist, acupuncturist and Associate Professor in Technoetic Arts. By adapting Chinese medicine practice into a performance research tool, she investigates interconnections between art, medicine and technology in globalised society. Michelle collaborates with 4DSOUND Institute of Spatial Sound on creating spatially dynamic soundscapes reflective of the infrasonic processes of the human body according to Chinese medical philosophy. Recent exhibitions include: Chinese medicine and cosmotechnics CAFA Beijing 2019, A Question of Oscillation Digital Suzhou 2018, Reflections from the Inner Mirror 4DSOUND (2017), ISEA 2016 (Hong Kong), TodaysArt NL 2015 (Den Haag), Drawing Towards Sound (2014- with John Cage, Cornelius Cardew, Aura Satz) University of Greenwich, Show but also Tell Anatomy Museum- King's College London (2014), Digital Futures – the V&A Museum (2013). Michelle's research has also been published in Digital Creativity/Taylor & Francis, Technoetic Arts Journal, Journal of Sonic Studies and ELSE Journal of Artistic Research.

functions in society.

This research constitutes a new area of research development in the arts, sciences and humanities and also in cross-cultural communication, because although artistic practice is now widely used to research and communicate biomedicine practice to a global community, using artistic practice to research and communicate Asian medicine practices to international audiences has been wholly neglected. Given that Chinese medicine has travelled across time and space to become practiced in over 160 countries and has lasted over a thousand years, in my artistic research I test out and produce new reflections on a cross-cultural medical body. The aim of my approach is to diversify the dominant conceptions of what a body is and can do.

1. Yuk Hui, *The Question Concerning Technology in China: An Essay on Cosmotechnics* (Cambridge, MA: The MIT Press, 2016)

Photons of Mars, a spectrum of perspectives on Martian photography

In the lecture Photons of Mars I would like to talk about my latest film “The Other Side of Mars” which was premiered in Helsinki in January 2019, and the research that led to it.

The Other Side of Mars explores the concept of image and photography by looking at how images are used in interplanetary science and related cultural imaginaries. With imagery and interviews filmed at NASA’s Jet Propulsion Laboratory in Pasadena, Los Angeles, and in the neighbouring observatories, a spectrum of entries into the notion of image materializes in front of the viewer. In The Other Side of Mars, a number of scientists, engineers and researchers discuss cosmic imagery from their highly diverse perspectives.

Do you remember the exact shape of a beautiful stone you once picked up on the beach? There are a few stones which shape Vandī Verma, Nasa Mars rover roboticist, will never forget, however, she didn't encounter them on the beach or in the mountains, but in the terrain of Mars. It is Vandī’s daily task to drive the Curiosity rover on Mars together with a handful of other employees at the NASA Jet Propulsion Laboratory. Following her ventures in the terrain of Mars, and her experience of its spatial and virtual aspects, the film depicts how profoundly visual her work is. Following that thread, the film portrays NASA as - among other tasks- an image production facility that produces, uses, and categorizes images, and how this categorization has become an independent branch of science on JPL's campus.

The film's underlying theme is the exploration of the image itself, how many roles it plays, and how images in science stop being images, becoming instead tools of measurement, manipulation and navigation. The film also looks at the surprising shortcomings of imagemaking and photography. Although the best optical technology is used in the mission, Mars rover drivers are

MINNA LÅNGSTRÖM

Minna Långström is a media artist and film maker from Helsinki, Finland. Her artistic work consists of participatory cinematic installations, short films and documentaries. Her work processes tend to be extensively researched and interdisciplinary. Her latest film *The Other Side of Mars* brought her in contact with geologists, astrobiologists and Nasa engineers involved with the current Mars missions. Premiering at the DocPoint Documentary Film Festival 2019, the film looks at the role of images in these missions. Her previous films and artwork have been selected to numerous film festivals and exhibited at museums and galleries such as Kiasma, Frankfurter Kunstverein and InterAccess Gallery in Toronto. Långström was an assistant professor in Moving Image at the Academy of Fine Art in Helsinki 2008-2012, where she also developed course concepts critically connecting art, science and technology. She was as chairperson of the board of the Bioart Society 2013-2017 where she is currently a member.

forced to navigate around gaps, blind spots and black holes of unmapped territory where the imagined, potential and real Mars meet in a non-hierarchical continuum. Vandí's approach to her work, robotics, and the virtual landscape is non-dualistic, she doesn't need to anthropomorphize the robot, nor does she call it "She". A devoted roboticist she is extremely motivated by the challenges of the work with the extremely complex rover as it is. The film does not look for conflicts in her personal life or background but in our culture's relationship to images. However, there is one small paradox related to Vandí's work. She has never seen the planet Mars with her own eyes through a lens. How will that experience differ from her every day, virtual close up encounter with the planet?

The lecture will discuss cameras used in the missions, colours and calibration and how the role of the photograph has changed throughout the history of Mars exploration. It will also discuss the film's phenomenological approach to Martian photography and the speculative fiction that participate in the history thereof.

The Ritual Sacrifice in the Lab

This work reflects on the commodity of the laboratory procedures, the automatism employed during them towards a living organism and, how organisms can be used simply as machines to deliver products to the human scientists. These reflections were inflicted upon me during the lab work I performed for *Semina Aeternitatis* [1], a collaborative project with the bioartist Margherita Pevere.

Semina Aeternitatis took a hybrid approach on immortality, by entwining human memories with bacterial inheritance. The chosen bacteria were *Komagataeibacter rhaeticus*, as they wrap themselves in a dermic biofilm, a tangible material that would be later exhibited as a sculpture (Figure 1). In an unexpected turn of events, we spent 90% of the time in the lab, interacting with a completely different organism, namely *Escherichia coli*.

For each step of the way (Figure 2), *E. coli* became my reliable machine providing me with the products I needed during the process. However, a machine that is alive, and moreover, a machine that is as well part of the human microbiome, and by extension part of me. Between the laboratory walls, life was not anymore, a shared experience with the organisms around me, but rather subject to the rituals inscribed in a bio-protocol.

More effective than the equivalent artificial techniques, *E. coli* can be used for a variety of lab procedures. In a ritualistic manner, using *E. coli* involves growing a fresh culture, modifying it genetically, nurturing it overnight and then destroying it to extract the needed products *E. coli* made in the process. These products would then be purified, measured, and combined. If needed, *E. coli* would be again used to ligate the combined molecules, and then again to amplify them.

In this work, I present the questions that ruminated my mind during my laboratory work. Looking at the history of the human society, I propose a series of guidelines and principles for an ethical interaction between the humans and the non-human living machines. Finally, I draw a roadmap towards a more self-deterministic micro-universe in the lab.

MIRELA ALISTAR

Mirela Alistar (assistant professor, ATLAS Institute, Computer Science) investigates the extent to which we can change healthcare to make it a personal process. Her research focuses around microfluidic biochips, devices that enable direct interaction of humans with their microbiome for diagnosis purposes. So far Mirela has built systems based on biochips to serve as personal laboratories: small portable devices that people can own and use to develop customized bioprotocols ("bio-apps"). Mirela is an active contributor to the DIYBio movement, having led and co-founded community wetlabs. In this context, she organizes interactive performances, art installations and open workshops, in order to engage the public in direct interaction with living materials (e.g., bacteria, viruses, fungi).

Towards a Living Lab on Art and Technology for Sustainability

In my talk last year I presented the ARTiVIS project, its motivations, interactive art explorations and prospects for future activities, questioning the active role we can play as artists and researchers in facing the challenges of climate change.

For this presentations I will focus on our ongoing work towards establishing a rural, real-world living lab at the crossroads between art, technology and environmental sustainability.

To bootstrap this project we have been hosting a series of monthly field activities to bring makers, researchers and activists to meet the natural environment and local community at our chosen location, the small village of Maçal do Chão. Our early activities range from building a base of operations using local materials and suppliers, to designing signage for walking routes in the countryside, foraging for local delicacies and deploying an art installation in the wild.

In the next months several activities will follow, including the design of mobile field guides, water quality monitoring, deploying DiY real-time video kits for forest surveillance and artistic explorations with telepresence, aerial mapping, DiY microscopy, macro photography and moss graffiti.

By the end of the year, we should have a series of small open projects that will showcase the potential of the lab for doing meaningful research, engaging with the local community and attract artists and researchers to the region.

MÓNICA MENDES

Mónica Mendes is a digital media artist, multimedia art professor at the University of Lisbon and researcher at the Interactive Technologies Institute ITI/LARSYS. Interested in designing for a more sustainable world, she created the ARTiVIS project, exploring real-time interactive systems at the intersection of Art, Science and Technology. The research has been carried out with multidisciplinary collaborations from research institutions, hackerspaces and local populations, and has taken place in community, culture and art events such as art residencies, meetings and workshops, conferences and exhibitions. Mónica is currently coordinating the Multimedia Art PhD and collaborating in the Sustainability Sciences PhD of the University of Lisbon. She is also collaborator at CIEBA, a member of F3 College and she cofounded altLab, a hackerspace dedicated to independent experimentation in alternative media.

Feeling bacterial today?

We have a very complex with bacteria and micro-organisms. We have been taught to fear, to exterminate them and governments and companies use this fear to manipulate us. In fact, they jeopardize us, as US military administration did in the case of Serratia propagation. Detergents killed 32 people in the USA in 2017 and are contaminating waters. But microorganisms are our most specific, personal and intimate underwear. Each of us is a planet, surrounded by our own biosphere. Why not see our micro-organism procession, have a less martial, male attitude amongst them? In this conference, I would like to present some of my works on this subject.

NATHALIE DUBOIS CALERO

Nathalie Dubois Calero. One foot in arts (graduated in Fine Art-BFA), one foot in science (Ph.D. in plant science), the head in stars, I try to keep an uncertain balance.

My preferred media are airborne microorganisms-growing over a 10-foot floating fabric, in co-culture with Rochelle crystals, as an absurd security system or as underwear- or micro propagated cultures. My works are a reflection about the world we construct around us to "protect" us, the man-made nature we try to impose to the other organisms, and to ourselves, our fears of any organisms – especially the smallest and invisible ones as bacteria and fungi- we cannot dominate or control, but that are intimately in us. Here is the question: are we bacteria or humans? And what if bacteria were a metaphorical 'us'? Born in France and living in Montreal, Canada, I am affiliated to MILIEUX, the Institute for Arts Culture and Technology at Concordia University, in the Speculative Life Lab Cluster.

Artistic research as wisdom? Some reflections about knowledge views in (bio) art and academia

Art that engages with the living world is often concerned with the material and sensory nature of the life forms involved, be they bacteria, tissue, plant, animal, or (as is often the case) a multispecies conglomeration. The process of creation in these endeavours is often connected to academic practices, with corresponding claims that the artistic practices and outcomes entail a form of knowledge production. However, the knowledge outcomes are rarely presented as propositional claims, that is, as verbal arguments of "I know that n, because..." Instead, artworks are presented in open-ended, ambiguous formats, suitable for spurring thought and emotion, but not necessarily making knowledge claims in a sense recognisable within the academic sphere. The proposed presentation will take biological arts practices as a starting point for discussing the discourse of knowledge production accompanying artistic research. In what sense of the word can we speak about artistic lab practices as producing knowledge? Several scholars have argued that few artworks can be seen to fulfil the criteria of the propositional theory of knowledge; indeed, that attempts at fulfilling such criteria reduce art to science communication. However, considering the contributions that artists make, I argue that a more suitable concept to apply to the meaning-making of art may be wisdom, if we perceive of this form of knowing as intimately linked to experience and moments of inspiration, and not necessarily articulated or easily transferable. This knowing based both in cognitive, emotional and moral understanding transcends the rationalist knowledge that has traditionally been predominant in male-dominated academia, and is sorely needed in a "posttruth" society increasingly focused on utility and fast, accessible information.

NORA VAAGE

Nora Vaage is an art historian turned philosopher of art and culture, with a PhD in philosophy of science and ethics. From this interdisciplinary perspectiveshe writes and teaches on a number of topics at the intersection between culture,society and technology. She is particularly interested in questions of values andknowledge views (ethics and epistemology). Nora is currently working on across-institutional initiative to develop an artistic research PhD trajectory inMaastricht, which has provided her with some new perspectives on persistentacademic ideas about knowledge and research.

Controversy of Life and Death in Exhibiting Bioart

The paper researches relation of institutions and independent organizations to exhibiting bioart as artistic practices using living or semi-living entities. The topic is reflected upon from the posthumanist perspective and authors' own curatorial practice supported by case studies. Exhibiting bioart represents a considerable challenge to institutions for living organisms are not inherent to artistic exhibiting practices and do not have long historical continuity in artfield. Live entities as recent exhibiting artform require complex and demanding procedures and approach from the exhibition organizers. An important part of the challenge is confronting ethical issues referring to living conditions and termination of artwork in question. Also controversial is the fact that bioart works are not anymore mere artistic objects but closer to artistic subjects. Ethical consideration emerging from these topics are often subversive and point out the importance of synergic work with non-artistic institutions of similar experience, while public media presents key support system to art by opening the most relevant contemporary topics.

Chosen artistic projects offer deeper perspective into procedures of working with living and semi-living art. Marta de Menezes in her artwork *Nature?* presents live butterflies in humid, rainforest conditions. Špela Petrič in *Solar Displacement* exhibits live rats in interaction with humans through a mobile application. The *Tissue Culture and Art Project* in *Victimless Leather* grows semi-living entities in laboratory conditions. From major art institutions to smaller independent organization, all are required to take care of the living beings during exhibition duration and before or after the closing. While dismantling the exhibition the living organisms are waiting for the decision about the future of their lives. In order to properly operate to maintain the living art subject alive, contemporary exhibiting spaces are in the position to appropriate knowledge and experience from non-artistic

OLGA MAJCEN LINN

Olga Majcen Linn (1975) graduated Art History and Comparative literature at the Faculty of Humanities and Social Sciences, University of Zagreb. Engaged in curatorial work since 2002 as the founder of the NGO and author of many renowned international projects. She curated more than 100 exhibitions, festivals, conferences and lectures in Croatia and internationally. Since 2003 she also works at the Gallery VN in Zagreb which she presents young and emerging Croatian artists. She is teaching as a guest lecturer at the Academy of Fine Arts in Zagreb (Art at the Intersection of Science and Technology). She is also active in the field of social theory and critique, and is a member of AICA. Currently she is working on PhD these on the topic of subversive art practices.

SUNČICA OSTOIĆ

Sunčica Ostoić (1976) is a cultural worker from Zagreb, Croatia where she graduated Art History and Philosophy at the Faculty of Humanities and Social Sciences. She is currently a PhD candidate of Transdisciplinary Studies of Contemporary Art and Media at the Faculty of Media and Communications in Belgrade. She is a guest lecturer at the Academy of Fine Arts in Zagreb. In 2002 she co-founded NGO KONTEJNER | bureau of contemporary art praxis where she has worked as the author and curator of three festivals and numerous other projects in Croatia and internationally.

institutions competent in working with living creatures like scientific research laboratories, zoos, circuses, cabinets of curiosity, natural history museums, and deal with various diachronic experiences. A greater ethical pressure is applied to artistic institutions although others, like biological laboratories or zoos also imply large ethical concerns. The conclusion is that there is an extensive dilemma 46 whether the central problem in exhibiting bioart bursts out from the theme of the artworks or from the fact that the artworks are using living beings as material for production and presentation.

Biotranslab. Bio.electro.chemistry and their intra-active entanglements.

In the last years after my graduation from Fine Arts College, I have been developing an interest in DIY-DIWO technologies, hacking and hardware electronics, in a context of learning by doing in a transhackfeminist electronics open laboratory (Pechblenda) that I co-founded in Calafou, a free technologies (digital technologies from software to hardware) based in ecology and open source ideals. The last year, after bio and transhackfeminist values I have been designing and fabricating the devices for the BioTranslab developing a line of hardware (HardGlam) for Gynepunk project that is used for autonomous gynecology practices and health ecological investigation. As my knowledge in electronics is based on open source and DIY, the devices included in the laboratory are portable replications of microscope, a speculum done with a 3D printer, an incubator, PCR, centrifuge...

My real interest is to spread the word and make others have interest to replicate and work together on the political topics of free culture technology and trans-feminism; open the body, mind and nature allowing the learn process through horizontal inclusive practice. What we call Open Science friction ... open lab, real do it together transhackfeminist science.

PAULA PIN

Paula Pin is a transhackfeminist performer and researcher which has a strong inclination towards research and experimentation processes with collective and free technologies. Her working fields range from drawing to abstract video or circuit bending, but always located in the intersection where biology, science and queer art collide.

Questioning the boundary between science fiction and fact, much of Paula's artwork investigates a broad range of subject matter relating to natural phenomena such as bioelectricity, bioluminescence, geochemistry and the cosmos. As her interest in the relationship with nature grows, and influenced by thinkers such as Michael Marder or Karen Barad, she has begun to occupy laboratory spaces and hack the performativity of science. This activity of workshops, sharing her knowledge and spreading the ethic of DIY and open technology, is an integral part of her practice. Paula's active participation in the lab Pechblenda and Transnoise, besides her social ideals and her work as a noise performance, has taken her to many spaces and contexts, specially to the point of starting to collaborate in Hackteria, a biohacking network.

Picturing light on Earth

How does the Sun tell us poetic stories of evolution and coexistence with the Earth through earthly matters?

My research focuses on the relational patterns between the Earth and the Sun, expanding on the epistemologies of solar science (Chizhevsky) and philosophy (Barad, Parisi, Morton) with a hybrid approach combining the legacy of a multitude of artistic fields. Drawing from electronic, software-generated and sound art, light installation and science, my practicebased research generates new modes of experiencing the physical and immaterial architecture of the Sun-Earth symbiosis. This research investigates the architectural and digital realm in which we wander. It concentrates on the importance of a collaboration between art and science in introducing new modes of perception. My desire is to share with you my initial steps in this Sun-Earth journey I am starting with the hope of critical and objective feedback from the fellow FEM participants. In order to create a manual for "Taming a Data monster" made out of fine structures found in the solar plasma and acknowledged by radioastronomy I suggest the following steps:

-Acknowledge its size, weight, physical appearance

-Habitat

-Behavior characteristics

-Plan a personal approach

-Imagine your coexistence

-Become the monster for a day

-Make an Archive living space

PEPA IVANOVA

Pepa Ivanova is an interdisciplinary artist creating site-specific installations, light and sound compositions, transient sculptures, and performed interventions in the public space. Pepa is a Ph.D. candidate in LUCA, Ghent/KULeuven. Her doctoral research focuses on the translation of radio-astronomy data from the Sun through analog and digital art methods. It places emphasis on the sunearth symbiosis and the cultural phenomena embodied by science communication.

The Hygiene Hypothesis in Art

Artist Rachel Mayeri will present several scatological artworks. Rather than repressing the taboo, these pieces suggest we consider human consumption and waste as flowing within landscapes, plant and animal life cycles. The hygiene hypothesis posits that a child exposed to germs as opposed to a sanitary environment will have a healthier immune system. These artworks can be understood as ongoing test of this theory.

A 29-screen video installation portrays the “Life Cycle of *Toxoplasma Gondii*” alongside the memetic proliferation of cat videos. *T. gondii* is a parasite spread by cats fecal-orally, and is present in 30% of the human population. Studies suggest that the parasites may change the behavior of humans and animals, making them love or tolerate cats. The installation explores the relationship between our biological affinity for cats and the technocultural expression of that desire.

Orfeo Nel Canale Alimentare is an animated opera about the digestive tract. In the film, Orpheus attempts to rescue Eurydice from a bout of indigestion by crossing the river of her inner-under world. The river which runs through us, the alimentary canal, is suggestive as a boundary object between the self and other, the internal and the external, the human and the nonhuman environment. The film explores the dissolution of individuality through the realization that our bodies are teeming with nonhuman life. Musically and narratively, in this ecological opera, individual heroes are superseded by the chorus, who represent a symbiotic view of life.

RACHEL MAYERI

Rachel Mayeri, an LA-based artist working at the intersection of art and science. Her videos, installations, and writing projects explore topics ranging from the history of special effects to the human animal. The multi-year project “Primate Cinema” investigates the boundary between human and non-human primates in a series of video experiments.

This work has shown at Sundance, Berlinale, Ars Electronica, and dOCUMENTA (13). Recent commissions include the environmental art project “Critters Speak” about the Gulf of Mexico ecosystem seven years after Deepwater Horizon, with Brandon Ballengée, funded by National Academy of Sciences Keck Futures Institute; and the animated opera “Orfeo Nel Canale Alimentare” about the digestive tract, supported by Imagine Science Films. As professor of media studies at Harvey Mudd College, she teaches courses such as Animal Media Studies, Art & Science, and Stories from the Anthropocene.

Luminescence

REBECCA CUMMINS

Rebecca Cummins explores the sculptural and experiential possibilities of light and natural phenomena, often referencing the history of optics and science. Currently, she is utilizing microscopy in the Wordeman Lab, University of Washington. She is a Professor (Chair – Photomedia) and the Floyd and Delores Jones Endowed Professor in the Arts, School of Art + Design + Art History, University of Washington, Seattle, WA. She is active in public art and cross-disciplinary collaborations with artists and scientists. Exhibits include: Art Center Nabi Special Exhibition, Asia Culture Center (ISEA 2019) Gwangju, Republic of Korea and Exhibition *Retícula*, ASKVII: UCSC Culture Gallery, Universidad Católica de la Santísima Concepción, Concepción Arte y Ciencia Biennial, Chile, 2019. Previous exhibitions include the 2006 Shanghai Biennial, Shanghai Museum; The Museum of Contemporary Art KIASMA, Helsinki, Finland, 2004 and the 2008 Biennial of Seville, Spain. Public commissions include the City of Seattle, the Washington State Arts Commission and the Exploratorium, San Francisco. She was introduced to tissue culture at SymbioticA, School of Anatomy and Human Biology, University of Western Australia, Perth, WA, Australia (2015).

I have been using a widefield fluorescence microscope to observe mitosis and to capture both still and time-lapse images of live cells in the Wordeman Lab, Department of Physiology and Biophysics at the University of Washington, Seattle, WA.

One of my recent projects utilizing these images relates to a local Puget Sound | University of Washington story that links together a local species of jellyfish with a remarkable scientific achievement that would become a key technique in cell research; in 1962 Dr. Frank Johnson and Dr. Osamu Shimomura isolated the green fluorescent proteins (GFP) in the local jellyfish (*Aequorea Victoria*), which they collected during many summers at the University of Washington Friday Harbor Laboratories in the nearby San Juan Islands.

This protein fluoresces green when illuminated with ultraviolet light and is used to tag the expression of otherwise invisible proteins, rendering visible the inner secrets of cellular processes related to growth, health and disease. Currently, there are a wider range of natural and artificial dyes used in fluorescent labeling.

"Luminesce" juxtaposes the two submerged worlds of jellyfish and cells to capitalize on this historical narrative and on their visual commonality. As seen through a microscope, the cells appear distant, luminous and mysterious. The colorful jellyfish are more easily understood. From my first session on the microscope, I was especially fascinated by the use of fluorescence. In a slide of cells that have been tagged with fluorophores, under the microscope, the same cell has a radically different appearance depending on the filter being utilized. For example, in some cells, with the blue filter I can observe the DNA fluorescing under the ultraviolet light. Using a green filter reveals the proteins and with a red filter the microtubules appear; revealing their visually distinct cellular structures.

Sciart as catalyst: new ways to cope with complex phenomena

In her recent work, Donna Haraway (2016) emphasized the important role of artistic expression in the understanding and the communication of issues of scientific nature. For Haraway, this sort of approach is part of the strategy she calls "staying with the trouble," to purposely cross boundaries and seek help and collaborations outside our comfort zone and our discipline; to face complex and difficult topics "head on" with the recognition that "we require each other in unexpected collaborations and combinations...we become-with each other or not at all".

My current research creation project (titled Emergent: coping with complex phenomena), examines ways in which we can better comprehend and eventually cope with those newly emerging or newly created life forms that won't fit or will exceed the categories defined by traditional taxonomies. To address this topic I am engaging in dialogues and material collaborations with artists, scientists, and a diverse and intergenerational audience. I found Haraway's suggestion both refreshing and incomplete. In fact, I argue that we should not be satisfied with crossing the boundaries in search of meaningful collaborations, and in doing so, "step outside one's comfort zone," as Haraway would put it. Rather, we should strive to create new spaces for reflection through and, importantly, with the arts – not with the arts as an addition or an afterthought. This adjustment has the potential to convey (not explain or illustrate) the dynamic forces converging into, and traversing, new and difficult-to-study new life forms. I am suggesting that the arts are wasted when they are simply used to illustrate. In fact, the arts have the potential to transmit, narrate, and make sense of complexity without relying on given disciplinary and instrumental containers. Thus, using examples from my current project as case studies, I propose a sustained discussion on how the artistic medium could function simultaneously as a catalyst for interrogating the nature of new life forms and a new research tool able to display and communicate their complexity without recurring to lengthy explanations and reductive metaphors.

ROBERTA BUIANI

Roberta Buiani is an interdisciplinary artist, media scholar and curator based in Toronto. She is the co-founder of the ArtSci Salon at the Fields Institute for Research in Mathematical Sciences (Toronto) and a co-organizer of LASER Toronto. Her research-creation work is mobile, itinerant and collaborative, exploring how scientific and technological mechanisms translate and transform the natural and human world, and what happens when they are taken outside of their traditional context and relocated through artistic and cartographic practices. Her work was exhibited in Toronto at the Ryerson University Faculty of Architecture and Artscape Youngspace; and was featured at Transmediale, the Hemispheric Institute Encuentro, Immigrant Movement International (Queens), and RPI among other. Recently, she has launched a series of curatorial experiments in "squatting academia", aiming at repopulating abandoned spaces inside the university with collaborative works in art and science and at filling formal spaces of research with site-specific installations and performances. She teaches communication and cultural studies at York University.

<http://atomarborea.net>

The Pathetic Sublime - Disorientation, Kinesthetic Empathy and Weird Embodiments

At the 2019 FEMeeting, I would like to introduce the Pathetic Sublime, a term from 18th century aesthetics theory which I suggest has a renewed relevance in our contemporary ecological predicaments, particularly concerning art, ecology, performance, and the crisis of scientific legitimacy. What role does aesthetic experience play in the challenges of ecological crisis, and is it still possible to maintain a 'safe' (privileged) distance of aesthetic contemplation amid awareness of inescapable entanglements?

SARAH HERMANUTZ

Sarah Hermanutz is a Canadian artist based in Berlin and Weimar, Germany. Her artistic research explores the disorientations and intensities of contemporary media environments, through projects combining dance, animation, VR, site-specific installation, and live performance. Her favorite research methods include book osmosis, montage, distraction, collaboration, and productive confusion. Topics of interest include social cognition, neurodiversity, embodiment, gender and ecology. Her work frequently involves amphibians and wetlands. She is Berlin's axolotl patient zero. Sarah is a founding member of Lacuna Lab, an art-science-technology collective in Kreuzberg, Berlin, and contributes to Art Laboratory Berlin's Hack the Panke project. She studies at Bauhaus University Weimar in the department of Media Environments. Her work has been supported by residencies such as Cultivamos Cultura in Portugal (2017) and Critical Media Lab, Basel (2019), and her installations, lectures, performances, and workshops have been presented across Europe, North America, and Australia.

In kinesthetic empathy, the observed movements of other bodies are felt within the viewers own body. This phenomenon is often discussed in relation to the brain's 'mirror neurons', and experientially spans the entire body, engaging a fully embodied connection to others at a physical distance. As technological and cultural tools continue to extend our physical and social bodies, we also engage with and respond to the complex traces of other human and non-human bodies. What happens amid ambiguous cause and effect relationships, when the buttons we push and the matter we touch have unclear outcomes across opaquely mediated translation? What buttons do we push through our patterns of shifting attention (as well as inattention), and what weird embodiments extend along our sometimes poorly-coordinated traces of agency and influence?

I will discuss these questions in the context of my own artistic practice, and the various ways in which artistic research can performatively investigate them. Confusion and disorientation (conceptual, spatial, cognitive) are both methods and experiential aesthetics with which to explore complexity, overwhelm, and 'too-much' situations and environments. I will present the ways in which my performance experiments, site-specific media installations, and improvisational collaborations are tools to confuse and clarify. My recent experimentations in Virtual Reality will also be shared, as another medium for aesthetic engagements of weird embodiments and entanglements in the Pathetic Sublime.

Case Studies of Intra-flux

Earth is immersed in a planetary metabolism of matter circulating through lithosphere, atmosphere, hydrosphere and biosphere. Bio-geo-chemical circulation between spheres is propelled by feedback loops of microbial metabolism, which connects all biotechnological agents in an intra-flux of exchanges and relations. Humans immersed via intra-actions in the environment commenced a new geological epoch, the Anthropocene, which is marked by disruptions in the Earth's systems on a planetary scale.

Exploratory case studies Symbiome - Economy of Symbiosis, Meta_bolus and Earthlink in the form of artistic research projects observe and employ model behaviors, processes and organisms in order to dissect planetary intra-flux and expose its inherent anatomical workings such as microbiological feedback loops, negotiation in symbiotic exchanges, beneficial or adverse doses of substances between biotechnological subjectivities. Effects and consequences of intra-flux seem liminal and invisible to human perception, however immensely important for survival of countless species including ours. In the context of biopolitics and necropolitics, where human labour in the capitalist techno-scientific apparatus is one of the key modes of intra-action with the environment, these case studies explore and address the questions of shortcomings of monocultural farming, challenges of technological mediation of substances, consequences of pharmaceutical exploitation and quality as well as (in)equality of human respiration.

Geopolitically human agency in the intra-flux is not a coincidence, but a result of decisions and discourses reverberating in feedback loops of the contemporary technologically mediated continuum between environment and culture. The concept of intra-flux emerged as a need for discussing social, political, economical and biological in one breath, because inhalation and exhalation are intimate respiratory processes that bind humans to their environment.

However, what happens with the connections once they are technologically mediated and politically conditioned? The question is also, who or what will dispense the dose? What will the dose contain and who will survive?

SAŠA SPAČAL

Saša Spačal [www.agapea.si] is a postmedia artist working at the intersection of living systems research, contemporary and sound art. Her artistic research focuses on entanglements of environment/culture continuum and planetary metabolism. By developing technological interfaces and relations with organic and mineral soil agents she tries to address the posthuman condition that involves mechanical, digital and organic logic within biopolitics and necropolitics. Her work was exhibited and performed at venues and festivals such as Ars Electronica Festival (AT), Prix Cube Exhibition (FR), Transmediale Festival (DE), Athens Digital Arts Festival (GR), Perm Museum of Contemporary Art (RUS), Onassis Cultural Center Athens (GR), Chronos Art Center (CHN), Eyebeam (USA), Cynetart Festival (DE), National Art Museum of China (CHN), Museum of Contemporary Art Metelkova (SI), Kapelica Gallery (SI), Device_art (CRO), Art Laboratory Berlin (DE), Kiblix Festival (SI), Gallery of Contemporary Art Celje (SI), Museum of Contemporary Art Vojvodina (SRB), Lisboa Soa Festival (PT), Sonica Festival (SI). She was awarded Prix Ars Electronica Honorary Mention and nominated for Prix Cube.

Better Living Through Disaster Technology

I will present a work-in-progress that explores speculative DIY wetware devices designed for surviving disaster landscapes. Inspired by hacker culture, the devices apply basic scientific principles to creations that incorporate living organisms and everyday items found in the home or corner store. The premise being that in a disaster you need to make do with whatever is at hand, and as the so-called "natural" disaster looms closer to ALL homes, survival is by any means necessary. I am interested in using the extreme consequences of disaster to address this tension between human ideology and the untamed wild within our current anthropogenic landscape.

The project is a continuation of a recent work I will also briefly present called "Trading Systems: Bio-Economic Fairy Tales." The focus of this work is the aftermath of Hurricane Maria which devastated the US territory of Puerto Rico. The storm wiped out a majority of the islands infrastructure leaving its residents in darkness, many without power for over 6 months.

The storm was blamed for this massive breakdown but on closer inspection it became evident that the island and its communities had experienced decades of economic neglect that had left its infrastructure in jeopardy.

The project asks, if human systems continue to fail, what might it look like if non-human actors are put in the driver's seat of Puerto Rico's reconstruction? The project is a creation of farcical speculative models that are realized as both printed diagrams and physical sculptures. The models draw from what is known as biological market theory, a methodology devised by evolutionary biologists that analyzes the behavior of organisms through market terms. Extrapolating on this theory, human conceptual systems of economy and governance are converged with biological ecosystems that get messy and decay. Puerto Rico's new temporary governance, its increasing debt, landscape of industrial agriculture

and access to communication and energy are brought to the forefront through incongruous and rather absurd juxtapositions of bio-economic machines and systems that both work and don't work.

Other research that has been informing the new project includes my fellowship at Bowdoin College in Brunswick Maine and residency in Tokyo, Japan. At Bowdoin College, I was awarded the position of inaugural 2018-2019 visiting scholar in the college's new Roux Center for the Environment. The position aims to foster interdisciplinary research and activities between the sciences and humanities. I have been working closely with students and faculty in the Department of Earth and Oceanographic Science and also spend time studying the research of local environmental organizations, research labs and commercial fisheries in the area. The focus of my research is on the impact of climate change on the Gulf of Maine, one of the fastest warming waters, with concern to ocean acidification and invasive species.

In Tokyo, Japan, a country very familiar with disaster, I focused on the topic through research on the aftermath of Fukushima and studying Metabolism and Post-Metabolism architecture. Metabolism architecture emerged in post-war Japan and was a movement that envisioned the country's urban reconstruction through forms mimicking biological organic growth.

STEPHANIE ROTHENBERG

Stephanie Rothenberg's interdisciplinary artworks make visible the physical and imaginary networks that create technological utopias. Moving between real and virtual spaces, she explores how new technologies mediate our everyday experiences and connect us to larger global systems. Her work has been exhibited in venues including House of Electronic Arts (HeK), MASS MoCA, LABoral, Sundance Film Festival, Transmediale and ZKM. In addition, she has participated in and organized numerous events and conferences on economic themes including Baltan Lab's "Economia" in Eindhoven and MoneyLab #2 and #3 in Amsterdam, and coorganizing #5 in Buffalo April 2018. She is a recipient of numerous grants and awards including a Creative Capital. Residencies include the LMCC Workspace program, Eyebeam and the Santa Fe Art Institute. Her work is in the collection of the Whitney Museum and has been widely reviewed including Artforum, The Brooklyn Rail and Hyperallergic. Stephanie received her MFA from The School of the Art Institute of Chicago. She is Associate Professor and Director of Graduate Studies in the Department of Art at SUNY Buffalo where she teaches courses in design and emerging technologies.

A Cure for Concrete

SUJATA MAJUMDAR

Sujata Majumdar (b.1976, London) is a visual artist based in Amsterdam. She is interdisciplinary by nature, with a background in Physics, Photography, and Information Technology. Sujata's artistic investigations show her fascination for the shifting boundary of man-made and nature, and over time this has led her towards image-led artistic research which includes other media. Currently she is Crossing Parallels (TU Delft & Today'sArt) Artist in Residence, in a collaboration with Professor Stephen Picken on 'A Cure for Concrete'. This evolved directly from a photography series 'Concrete Abstraction' (aka 'scapes II). Her project 'Signature Print' part of the Textiel Factorij (reviving a Netherlands – India textile collaboration), for which she used motion and sound data for new block print imagery, finds a balance between modern, global FabLab technology and local, traditional textile printing techniques of Gujarat (block printing, using intricate hand-made wooden blocks) to revitalise the craft with the younger generation. In 2014 she was awarded an ICT-Art Connect Residency from the European Commission for which she co-created 'Healthcare through a data lens'. Since this time she has also been Head of Conceptual Photography at the Institute of Unnecessary Research.

<http://www.sujata.nl>

"A Cure for Concrete" steers creation of visual imagery on concrete surfaces by experimenting with co-additives to an existing, but underused, concrete curing compound. Both additives and curing compound are intended to be derived from wastewater treatment. The pictorial ornamentation will not only make buildings and the urban landscape more beautiful, but also protect the concrete itself – Curing is the protection of concrete while it is setting. Inadequate curing is the cause of 80% of all damage to concrete. Cement, its key ingredient, accounts for 8% of CO₂ emissions. The least we can do is make the concrete we do use, last as long as possible. To make concrete last as long as possible it needs to be well-cured.

'A Cure for Concrete' not only refers to concrete's longevity by curing, but also a cure for its often unsightly visual properties. Could we give concrete buildings character through imagery and make the urban environment more pleasant to live in? I collaborated with prof. dr. Stephen Picken, professor of Polymer Materials at Delft University of Technology; to experiment with nano coatings, such as Picken's 'Delft Green' curing compound. Inspired by recreating the effects of worn-down concrete in my photographs, (<http://www.sujata.nl/scapes-ii/> series: Concrete Abstraction) we now steer the process by design. Through (transdisciplinary) research using compounds which are by-products from wastewater treatment, and the curing coating, we explored the pictorial potential of concrete. The most successful experiments so far have been with the combination of Delft Green curing compound and Vivianite (aka Blue Ochre, hydrated iron sulphate), and Cellulose NanoCrystal (CNC) which are by-products of wastewater treatment. We created surprisingly beautiful natural, organic patterns through chemical reactions (with Vivianite) and surface drying (applicable for CNC) which have a definite likeness to my photographic work. I have become more interested in these emergent patterns as the project progressed, and the effect of patterns from nature on our wellbeing were they to be placed in urban surroundings (though this will be the subject of a next project). The project is coming to a close, in May 2019. The last few experiments that fit into the residency are currently taking place, as well as a hackathon, where students and others can create and experiment with their own concrete coatings.

The Sedimentation of the Digital Object

The digital and the online sphere encourage an unsustainable growth and consumption through the concealment of the materiality of digital media. The impact of digital accumulation translates into materializations that, along with other material ramifications brought by humans industrialisation, are surpassing the speed of geological natural processes – as exemplified by some of the processes that contribute to climate change. There is a correspondence between the geological processes of the Earth and the accumulation that occurs digitally and online. Opposed to this boundless accumulation, the earth has finite resources which can be exhausted by the dominant techno-human determinism.

The Sedimentation of the Digital Object is a practice-based artistic research that investigates the material relations between digital object and nature employing a methodology based on sedimentation - defined as the process of a layered deposition and accumulation of eroded material and organic matter that builds up into new formations. By finding common ground between the highly tangible world of the rock and the intangible nature of the digital object, this practice-based inquiry aims to dismantle the immaterial perception of the digital and to shed light on the material interactions between human-systems and the non-human.

How can art re-purpose the digital to reveal the material co-dependence in the lifecycles of digital objects and the non-human? Contextualised in the framework of a new materialist aesthetics of land and computational arts (Parikka, 2015), this art-led inquiry employs data visualization, print media and installation. Aesthetics and a tactical use of technology become tools for sensing and meaning-making in the service of new ethical relations with the nonhuman, and multi-species co-habitation. This research proposes new histories in which the stories of human and non-human – animal, mineral – agents hold equal weight. In an exercise of reverse engineering of data mining, a digital object resultant from online proliferation will materialize through the sedimentary process of 3D printing. Through material exposure, embodied data becomes a sensor of the entanglement between human and nonhuman systems and it uncovers the concealed re-materializations brought about by digital media.

- Parikka, J. (2015) 'Earth Forces: Contemporary Land Arts, Technology and New Materialist Aesthetics', *Cultural Studies Review*. 21(2) (September 2015), pp. 47–75.

SUSANA GÓMEZ LARRAÑAGA

Susana Gómez Larrañaga (Santander, Spain) A.K.A Susi Disorder is an artist and a PhD student at the University of Greenwich, London. In 2015, Susana was awarded with the Firstsite Collectors' Bursary Award for the site-specific hologram: *Flying Land*; the project featured at the 2nd Death Online Conference (Kingston University) and at the RE:PRINT/RE:Present symposium/book and exhibition (Cambridge School of Art). She was one of the artists at the Digital Factory Residency in conjunction with Andy Warhol's exhibition (2016) at Firstsite. In 2018, her generative work was on display at Tate Britain as part of *Echoes*. She was commissioned by the Mayor of London and Tate Collective to create a sitespecific public artwork as part of LDN WMN. Fascinated by derelict sites and their entropic assemblages, her art-led research inquiry investigates research investigates the materiality of the digital and its relations with the natural world. Her practice involves generative processes, print media and site-specific installation. Susana creates environments where manufactured objects meet organic processes, a condition where the boundaries of natural and man-systems merge.

Scattered Semiospheres: Interfacing more-than-human worlds through experimental media

VANESSA LORENZO

Vanessa Lorenzo is a researcher and designer based in Switzerland working at the crossroads of media, art and science. Trained as Industrial Design Engineer and Media Designer, she creates speculative scenarios embedding people, living organisms, matter and the technologies that interweave them in order to enable odd sympathies and post-anthropocentric futures. During the last two years, she continued to her own research independently in the context of Art & Science at Hackuarium Biohackerspace (Lausanne), Hackteria (International Community, Zurich branch) and at various residencies like Interactivos'16 (at Media Lab Prado, 2016), Prototipoak (at Azkuna Zentroa, 2018), and Artists-in-Labs (South African Astronomical Observatory, 2018). She has exhibited internationally in Somerset House (UK), La Gaité Lyrique (FR), Azkuna Zentroa (ES), 3 Days of Design (DK), Triennale Milano (IT), Touch Me Festival (HR) and locally in Switzerland, HeK (Basel), Le Commun (Geneva), Centre Durrenmatt (Neuchâtel) among others. Since 2016, she develops her own artistic research at Hybridoo (Ateliers de Bellevaux, Lausanne)

The following work-in-progress research is a collaboration between the South African Astronomical Observatory (SAAO) and the Artists-in-labs programme from the Institute for Cultural Studies in the Arts (ICS) at the Zurich University of the Arts (ZhdK) from September to December 2018.

When an intervening instrument (aka media) blends with the more-than-human, it emphasizes their very own potential to produce new knowledge; including their particular rhythm, code and politics. On my last project 'Always Calling Home' Vanessa focuses on the potentials of media combined with pre-existent indigenous meaning-making (cosmovisions) and prediction techniques to unveil the invisible traces of bodies wandering over the Earth.

Asteroids, meteorites, eternal matter scattered around us that are related to mass - extinction events. Rare minerals, gas, and alien bodies that existed within and outside the original body, from which they got expelled, then coagulated together, to be extracted or expelled again. Roaming the void, these scattered semiospheres are seeking home, reflecting beams of light and fluctuating within a range of frequencies in and out of the visible spectrum. Through sonification techniques (soundscapes) rocks interface different worldings, the politically nor culturally unseen. This exobodies hold the anxieties of our co-existence and yet they key to imagine postanthropocentric open scenarios. Sentinels secure their positions to capture patterns out of waffled memories and ultimately enabling droning dialogues of the yet-to-come. What kind of past-futures would they bring us to?

Setting up a collaborative workspace at the intersection of art,
biology, ecology and DIY practices at the Academy of Media Arts
Cologne

Besides my work as an independent artist in the field of Media Art, BioArt and Installation, since early 2018 I work at the Academy of Media Arts Cologne (KHM) in Germany. In close collaboration with my two colleagues Jacqueline Hen and Christian Heck I am currently developing a new structural unit at the KHM, the so-called "exMedia Lab". After an initial planning phase the space is currently being reconstructed to become an open workspace for reflective, material-experimental and collective work in which a development of interdisciplinary methods and action is to be promoted with a focus on self-motivated hands-on experimentation based on each student's specific interests.

Our research includes the following areas:

DIY Electronics / Prototyping / Material Processing / Model Making
/ Programming as Artistic
Practice / Hacktivism / Open Technology / Experimental Research /
BioArt & -Design /
BioHacking / FoodHacking / Smell as a Medium / Art & Ecology /
Permaculture Design / Transformation Design / Design Basics /
Experimental Spatial Concepts

https://en.khm.de/exmedia_exMedia_Lab/

One of my main focal points is the creation of a small workspace for handling biological and organic materials within the currently evolving structure of the new exMedia Lab. While this space itself will be some sort of DIY BioLab in the classical sense (a separated niche with equipment such as microscopes, laminar flow hoods, incubators, DNA analysis equipment etc. I seek to closely entwine it with other activities going on in the exMedia Lab such as EcoArt-related practices and DIY experimentation with electronics and technology. Together with Dr. Klaus Fritze, an artist and bioscientist who was also active in setting up the DIY BioLab at the

VERENA FRIEDRICH

Verena Friedrich is an artist creating time-based installations in which organic, electronic and sculptural media come into play. Theoretical research and practical hands-on experiments are the starting points of her artistic work. Furthermore, she is interested in direct interaction with scientists and hands-on work in the bioscientific laboratory. She was an artist in residence i. a. at “SymbioticA – Centre of Excellence in Biological Arts” at the University of Western Australia and at the Max Planck Institute for Biology of Ageing Cologne in Germany. Verena Friedrich’s projects have been presented internationally in the context of exhibitions, media art festivals and conferences. She received the International Media Award for Science and Art from ZKM Karlsruhe 2005; a special mention in the VIDA 13.2 Art and Artificial Life Awards; an honorary mention in the Prix Ars Electronica 2015; a jury mention in the Japan Media Arts Festival 2015 and the Transitio_MX award in 2017. In recent years she has been teaching at the University of Art and Design Offenbach and the Bauhaus University Weimar, both in Germany. Together with two other colleagues she is currently running the „exMedia Lab“ (her focus being on DIY technologies, biological and ecological arts) at the Academy of Media Arts Cologne.

Bauhaus University Weimar we are planning to soon give introductory courses comprising fields such as plant tissue culture, microbiology, molecular biology, environmental monitoring and so on. In this regard, it would be specifically interesting to visit and connect with Cultivamos Cultura; as well as with other artists and researchers running BioLab facilities in an art and design context.

In parallel, together with artist/researchers Prof. Hörner/Antlfinger whose work focuses on multispecies collaboration, we are trying to rethink the KHM as a habitat for human and nonhuman beings, be it plants, animals or various insects. This for example entails providing housing for birds at various locations throughout KHM as well as building raised beds where students and teachers can experiment with concepts such as permaculture and companion planting. We are currently establishing a working group to carry on with this long-term experiment.

Concerning my work as an independent artist, in the last years I have been mainly exhibiting installations in which I used DIY electronics and organic materials to create poetic and embodied experiences around the theme of longevity and technological enhancement (e.g. an experimental setup to make a soap bubble live as long as possible).

Currently, I am interested in the topic of plants and plant intelligence which I seek to combine with techniques such as deep learning and convolutional neural networks while deepening my programming skills. Amongst other possible outcomes, my current goal is to create cinematic experiences that change our perspective of plant life.

GENETIC GAMES of CHANGE: Hox Zodiac Explorations of Our Animal Selves

Our perception and experience of the world around us is limited by an anthropocentric viewpoint – in part a physical limitation of our senses, but largely because we forget that as animals we share a common inheritance both genetically and ecologically with the myriad of species around us. This talk will give an overview of Hox Zodiac – a decade long collaboration with neuroscientist Siddharth Ramakrishnan -- showing the conceptual framework of the dinner project that attempts to break down this filter limiting our world view and experience. Using the Chinese zodiac as a framework, and the emergent nature of the game-like environment of the ancient Book of Changes, the I Ching, this work draws from the wisdom of ancient Eastern philosophies such as Ayurveda along with current scientific research. Seeking the balance between rational and irrational, conscious and unconscious – in relation to our interconnectivity with the animal kingdom, these issues are further amplified with the recent genetic manipulations of primates and humans taking place in China on parallel with the global climate change. Hox Zodiac sits all animals at the table to eat or be eaten and discuss the urgent times we all face -- the die is cast.

VICTORIA VESNA

Victoria Vesna, Ph.D., is an Artist and Professor at the UCLA Department of Design Media Arts and Director of the Art|Sci Center at the School of the Arts (North campus) and California NanoSystems Institute (CNSI) (South campus). Although she was trained early on as a painter (Faculty of Fine arts, University of Belgrade, 1984), her curious mind took her on an exploratory path that resulted in work can be defined as experimental creative research residing between disciplines and technologies. With her installations she investigates how communication technologies affect collective behavior and perceptions of identity shift in relation to scientific innovation (PhD, CAiiA_STAR, University of Wales, 2000).

Her work involves longterm collaborations with composers, nanoscientists, neuroscientists, evolutionary biologists and she brings this experience to students. Victoria has exhibited her work in 20+ solo exhibitions, 70+ group shows, has been published in 20+ papers and gave 100+ invited talks in the last decade. She is the North American editor of AI & ocietyjournal (Springer Verlag, UK) and in 2007 published an edited volume – Database Aesthetics: Art in the Age of Information Overflow (Minnesota Press) and another in 2011 — Context Providers: Conditions of Meaning in Media Arts (co-edited with Christiane Paul and Margot Lovejoy) Intellect Ltd, 2011. Currently she is working on a series Art Science & Technology based on her online lecture class.

<http://victoriavesna.com>

WENDY TYRER

With twenty years of industry experience as an interactive web designer (Wendy began designing back when there were only 256 web colours), art director, account manager and branding specialist, Wendy began Picta Creative in 2012. Her vision was to provide great design that is thoughtful, not just fad driven. Wendy believes in the power of story, and the dominant role good design plays in a project's narrative.

Working with clients to identify and cater to their audience, and provide strong visual branding and strategies is one of Wendy's strengths. With a post graduate degree in animation and interactive multimedia from RMIT, Wendy also uses her illustration and animation skills to create multimedia presentations. Wendy's focus on the end user, and her multimedia design experience, enables her to provide digital solutions that work across many platforms and devices.

With a growing focus on education and science, Wendy seeks the intellectual rigor of disseminating complex ideas into palatable communication outcomes.

When she's not dreaming up creative ideas, Wendy continues work on her graphic novel while listening to Debbie Millman podcasts.

What's the big idea?

Strategic visual communication involves understanding the story you want to tell. Through relationship building and workshopping with content creators, a designer can help to push and define the communication outcomes needed for the project to be successful. Assumptions can be challenged and new ideas given room to explore.

What does post-feminist internet art look like?

On 26 November 2013, a post was made on the web page of hastac.org, titled “Feminism and Programming languages.” The author of the post, Ari Schlesinger, PhD student at Georgia Institute of Technology, raised a heated discussion as to the question of what can be a “feminist programming language” as a “non-normative paradigm,” which allows us to create new posthumanist entanglements, inspired by Karen Barad. This post has received 74 responses about the (im)possibility of ‘feminist programming,’ from artists, researchers, and programmers in both computer science and art/humanities. Similar debates have been recurring over past few decades. In a compilation, titled “Object Oriented Feminism(OOF)” feminist scholars attend to “gender imbalance in OOO(Object-Oriented Ontology” (Behar 2016), raising the question of biased data and programmed interfaces on objectified women (in particular, poor women, women of color and queer and trans women). Feminist scholars who argue for the new term ‘OOF’ urge us to reconstruct new form of alliances with nonhuman objects. What I concern here is that we can learn from feminist media artists about the representation, non-representation and performances with non-human objects as a new alliance in a non-anthropocentric era, not falling into the gender-skewed objectification of women.

Toward the current academic debate, feminists artists and/or practice-led researchers have responded in relation to the tension between bodies, technologies and semiotics. They have paid attention to the forms and/or the formats of non-confirming practices in media arts, by inter-sectionally asking as follows: “what does feminist programming look like?”; “what does queer-feminist internet art look like?”; “what does woman of color(WOC)-feminist internet art look like?.” I would attend to recent examples of a non-confirming programming in digital media art practices, such as cyberfeminist collective Deep Lab; Black Girls Code; Winnie Soon’s workshop project of “Feminist coding in p5.js: Can Software be Feminist?”; while at the same time looking back at early cyberfeminist practices in a net art history, such as Australian collective VNS matrix, the Old Boys Network (OBN) and more recent example of Xenofeminism.

YEON-KYOUNG LIM

Yeon-Kyoung Lim is a PhD candidate in the School of Creative Media, City University of Hong Kong, and moving image practitioner, working on the intimate relationship between the human and the computational. Her doctoral research lies at the intersection of critical media theories, visual art studies, and feminist/queer theories. It aims at understanding how human beings sense technical things as their companions, with a focus on media art and technoculture. Her academic papers were presented at several international conferences: The Society of Fellows in the Humanities: Contacts, Collisions, Conjunctions 2018; Crossroads in Cultural Studies 2018; Society of Cinema and Media Studies 2019 (SCMS19) and so on. She is a coeditor of *Journal of Queer and Humanities Vvira*- a journal presenting discourses on queer politics and aesthetics in Korea and beyond.

An underwater photograph of a coral reef. The water is clear and blue. In the foreground, there is a large, textured coral structure. In the background, a large, flat coral plate is visible. A single fish is swimming in the middle ground, facing left. The overall scene is serene and natural.

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