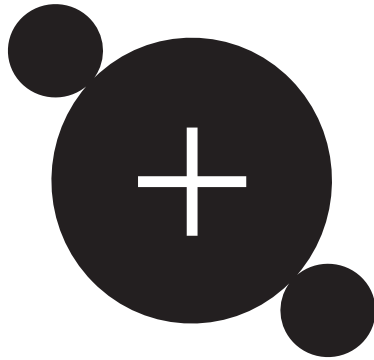


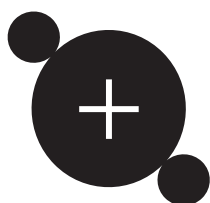
Symposium



Art-Science Residencies: Methodologies and Experience Feedbacks

March 2 & 3, 2020

IRCAM, Salle Stravinsky, Paris



Art and science are intimately linked. The ability to proceed to the unknown, the experimental approaches, the relation to technology, or the modes of collaboration are sometimes similar to two worlds that, at first glance, seem disjointed or even opposite: generality vs. singularity, rationality vs. sensitivity, disciplinary specialization vs. transdisciplinary integration... These similarities and differences are more and more recognized as complementary assets in collaborative processes. Eminent personalities evolve in both scientific and artistic worlds. Meetings between researchers and artists, resolutely oriented towards technological innovation or original creation flourish and seem fruitful both in the cross-fertilization they enable and in the knowledge and artefacts they produce. One of the main frameworks for these collaborations, program of artistic residencies in public and/or private research structures is proposed by various organizations, at internal, regional, national and international levels. If each of them has its own vision and approach, depending on its specific objectives, research framework and hosting context, the multiplication of these initiatives and the growing amount of gained experiences set the conditions for initiating a mutual exchange on their methodologies, tools, and lessons learned.

In the framework of the 2020 edition of its Mutation Creation art-science yearly encounters in Paris and in relation to the STARTS Residencies program, IRCAM-Centre Pompidou organizes this international symposium dedicated to the management of artistic residencies in the context of scientific research and technological innovation. This public event gathering art-science residencies organizers and researchers aims at discussing the processes and methodologies carried out in order to organize, communicate, select, implement, monitor, and assess art-science residencies.

Program committee

Greg Beller, Product Manager, IRCAM,
Nicolas Henchoz, Director, EPFL+ECAL LAB
Ana Solange Leal, Area Manager, Inova International,
Hugues Vinet, Director of Innovation and Research Means, IRCAM -
Coordinator of the STARTS Residencies Program

Organizing committee

Greg Beller, Sylvie Benoit, Louise Enjalbert, Hugues Vinet, IRCAM

MONDAY, MARCH 2nd

9:30 - Welcome coffee

9:45 - Introduction by Hugues Vinet - Director of innovation and research means, IRCAM - Coordinator of the STARTS Residencies Program

10:00 - Keynote by Ariane Berthoin-Antal - WZB Berlin Social Science Center

10:45 - Empowering Social Changes

Panel moderated by Danielle Siembieda - Leonardo/ISAST

With

Tilly Boleyn - Melbourne Science Gallery

Alexandra Christev - Artists in Residence Television

Isabelle Desjeux - Institute of Unnecessary Research

Lucas Evers - Waag

Angela McQuillan - University City Science Center

Vladimir De Vaumas - Artists in Residence Television

12:00 - Lunch break

13:30 - Bridging art and science

Panel moderated by Andrew Perkis - Norwegian University of Science and Technology

With:

Keynote: Diana Ayton-Shenker - Leonardo / ISAST

Camille Baker - UCA, WEARSustain, STARTS Ecosystem

David Berman - Physics and Astronomy, Queen Mary University of London

Manuelle Freire - École nationale supérieure des arts décoratifs

David Harris - Griffith University

Claudia Schnugg - curator

15:10 - Coffee break

15:40 - Organizing Residencies

Panel moderated by Claudia Schnugg - curator

With:

Keynote: Greg Beller - IRCAM

Monica Bello - CERN

Caterina Benincasa - Polyhedra

Valérie Félix - Code / Art Research Program

Rodrigo Perez Garcia - Polyhedra

Gisa Schosswohl - Re-FREAM

PROGRAM

TUESDAY, MARCH 3rd

9:00 - Welcome coffee

9:30 - Seeding Innovation

Panel moderated by Nicolas Henchoz - EPFL+ECAL LAB

With:

Keynote: Evan Ziporyn and Leila Kinney - MIT CAST

Sandra Boer - Art Partner

Jurij Krpan - Kersnikova Institute

Nicola Ruffo - swissnex San Francisco

Hélène Schwalm - Université de Bordeaux

Karla Spiluttini - Ars Electronica

11:10 - Coffee break

11:30 - Supporting next generations

Roundtable moderated by Ana Solange Leal - Inova+

With

Keynote: Alexandra Murray-Leslie and Andrew Perkis - Norwegian University of Science and Technology

Deborah Lawler-Dormer - Museum of Applied Arts and Sciences

Julie Sauret - Chaire arts & sciences

Claudio Serni - University of Bologna

Guy Van Belle - IPEM UGENT

13:05 - Conclusion by Hugues Vinet - Director of innovation and research means, IRCAM - Coordinator of the STARTS Residencies Program

13:20 - Lunch and networking

MONDAY, MARCH 2**HUGUES VINET****IRCAM – STARTS Residencies**

Hugues Vinet has spent his whole 30-year career managing leading R&D collaboration with artists. After a scientific education at Télécom ParisTech, Paris and a musical education, he started in 1985 in the French National Institute of Audiovisual where he managed the research of the Musical Research Group (Ina-GRM). He has been, since 1994, as Director of the Research and Development Department at IRCAM and then Director of Innovation and Research Means, in charge of all research, technology development, tech transfer and IT services activities at IRCAM. He is the coordinator of the H2020 project VERTIGO STARTS Residencies. He is also curator of the yearly interdisciplinary symposium Forum VERTIGO at Centre Pompidou as part of MUTATIONS CREATION platform which gathers every year several dozens of top artists and researchers debating on the state-of-the-art of artistic production in relation to the recent advances of science and technologies.

ARIANE BERTHOIN ANTAL**WZB Berlin Social Science Center**

Prof. Dr. Ariane Berthoin Antal is Senior Fellow at the WZB Berlin Social Science Center, Germany. In 2008 she launched an international research program on “artistic interventions in organizations”, building on her earlier work in organizational learning and culture. Recent books include *Learning Organizations. Extending the Field* (with P. Meusburger & L.Suarsana, Springer 2014); *Moments of Valuation* (with M. Hutter & D. Stark, Oxford University Press, 2015), and *Artistic Interventions in Organizations: Research, Theory and Practice* (with U. Johansson-Sköldberg & J. Woodilla, Routledge, 2016). In addition to leading sessions over many years at the Academy of Management and EGOS, she has presented her findings to policymakers and managers throughout Europe and Asia. She also serves as Ombudsperson for Good Scientific Practice at the WZB. Ariane is French and American by birth and lives in Berlin, Germany. She is Distinguished Research Professor at Audencia Business School, France, and honorary professor at the Technical University of Berlin.

MONDAY, MARCH 2**10:45 – Empowering Social Changes****TILLY BOLEYN****Melbourne Science Gallery**

THE RESIDENCY is a program combining an artists' workshop with a science lab to fabricate and create multidisciplinary artworks and truly awe-inspiring projects. Artists will have the freedom to experiment and make bold decisions in their work, which will be viewable by Science Gallery's target audience – young people aged 15–25, university stakeholders, special guests and the public, from both inside the Gallery and from the street through our 4m viewing window. At the heart of the programs is a disruptive creative practice, cutting-edge scientific knowledge and empowered social change. Science Gallery Melbourne will program three major exhibitions each year. Each exhibition explores bold and future-focused themes with content sourced through an international open call and artist commissions. Program themes are developed with our Leonardo group, the inspiring 'thinktank' of exceptional people from the sciences, arts and technology. The Leonardos include Nobel Laureate Peter Doherty, former Australian of the Year Fiona Stanley, and renowned Australian artists Stelarc, Lucy McRae and Patricia Piccinini.

ISABELLE DESJEUX**Institute of Unnecessary Research**

Can artists bring in the un-necessary creative component required for the completion of a constructive and creative scientific project? Un-necessary, dreamy, un-focused periods are an essential part of the creative cycle, including the scientific cycle. However, the often-heard suggestion by scientists is that having an artist in the lab will help with their outreach, by communicating their research to the general public. Another, often heard, suggestion, is the idea that artists will help "visualize" their data. What they share after their collaborative experience, however, is an increased awareness of their research, obtaining different points of view, and more importantly an ability to view their research in the grand scheme of things, highlighting potential blind spots, and unusual ideas. Could it be the un-necessary research brought by the artist? In effect, artists are often the instigators of such collaborations, seeing the opportunity of discovering a new field as inspiration for their work. The variety of outcomes and approaches taken by artists and the diversity of their production makes judging for success more difficult. But if artists are the instigators, and the scientists willing cooperators, why is the collaboration expected to improve the scientific outcome rather than the artistic outcome? Can it be because, in the process of new knowledge being created for science, there will be new artistic production? After 10 years of various personal collaborations with scientists and the setting-up of a new artist-scientist collaboration project in Singapore, Isabelle Desjeux has had the chance to reflect on the many questions necessary for those to be meaningful. Through the re-telling of the various actual collaborations, it is possible to identify the important questions to be asked at the various points of the process, at the organizational, the personal and the wider research level.

LUCAS EVERS**Waag – Technology & Society**

Waag – Technology & Society has initiated several art-science residency programs over the years in areas such as computing and AI, media technology, biosciences, physics and more. They are convinced artistic perspectives and art research represent important complementary research that will help to understand the social and societal implications of techno-sciences and new technologies. Questions like for instance how to develop AI on the basis of social inclusive normalcy and how do industrialized organisms affect non-industrialized organisms are only addressed in the interaction between science, technology, arts/humanities and society. Artists make these positions tangible by their artworks and their research, their propositions for new products and services. Waag's art-science residency projects always seek this interface of complementary cultures of research.

ANGELA MCQUILLAN**University City Science Center**

In 2017, the University City Science Center, in partnership with biotech company Integral Molecular, established a new artist-in-residence program known as the BioArt Residency. This program was designed to improve the understanding of science and biotechnology in all of our lives, foster a creative dialogue between artists and scientists, and create a direct positive impact on human health. This residency is an ideal example of how art – in this case, the visual arts – and science can converge to communicate complex scientific concepts in a profound yet clear manner. This program is designed to get people excited about science; to educate the public about new developments in biotechnology; and to explore not only the health aspects but also the social and cultural implications of scientific development.

The scientists at Integral Molecular devote their life's work to improving human health. Their work is leading to cures for breast cancer, treatments for rheumatoid arthritis, and vaccines for zika virus. Yet few people outside of the lab ever get to see the inner workings of this process – how ideas are transformed into solution. The BioArt residency is a chance to change this, to allow everyone a view of the laboratory – not just in pictures of its physical incarnation, but in ways that communicate the process itself, the commitment of its scientists to the greater good, and the emotional connection of science to the human condition. These connections are not always well communicated in the standard semantics of science – tables, statistics, and charts. Rather, the diverse media chosen by artists can communicate these concepts from new perspectives, using different senses, and to a larger community. And if science can be communicated in better ways, it can directly impact the decisions and choices that people make about the health of themselves, their family, and the world. They have hosted 5 artists in residence since 2017 at Integral Molecular: Orkan Telhan, Laura Splan, Deirdre Murphy, Heather Dewey-Hagborg, and artist-duo IMRSV Arts. Each artist spends three months researching alongside scientists in the laboratory, then works in their studio to develop a new body of work that culminates in a solo exhibition at the Esther Klein Gallery.

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ALEXANDRA CHRISTEV & VLADIMIR DE VAUMAS**Artists in Residence Television**

Artists In Residence Television, created in 2017, is an audiovisual platform dedicated to art residencies. It produces original videos and shares audiovisual productions from art residencies. The project started in Barcelona, Spain, before leaving for a two years investigation on the roads of the Latin American's artistic residencies, along which the founders visited 19 countries and interviewed 308 residencies. Their ongoing research already points out strong trends such as the evolution from multidisciplinary art processes to a cross-sectorial approach, with an accent on science, technology and environment. Thus, they concluded that art residencies are not only open to artists and creatives but to every profession bringing a project with a cultural, social or artistic value. Collaboration is the keyword of such programs, combining bright minds and artists to bring forth new perspectives on specific projects and share new insights on artistic processes. Through their programming and methodologies, art residencies are promoting cultural and artistic development as well as social and environmental awareness. They have the potential to become powerful allies in large scale matters such as green energies, AI, agro-ecology, sustainable architecture, innovation, biodiversity... Art residencies act as neutral grounds where one can think on actual topics and transcend them into knowledge and artworks.

13:30 – Bridging Art and Science**DIANA AYTON-SHENKER****Leonardo / ISAST**

Leonardo/ISAST has two residency programs.

LEONARDO RESIDENCY WITH NOKIA BELL LABS

Two renowned institutions known for their contributions to arts research in engineering and science are partnering for experimentation in space and time. Leonardo/The International Society for Arts, Sciences and Technology (Leonardo/ISAST) and the Experiments in Art and Technology (E.A.T.) program at Nokia Bell Labs have launched a joint residency in Silicon Valley that will bring in art researchers with an interest in science and engineering to spend six weeks at the Bell Labs site in Sunnyvale, CA.

SCIENTIFIC DELIRIUM MADNESS

Leonardo/ISAST and the Djerassi Resident Artists Program (DRAP) collaborate on the annual Scientific Delirium Madness artist/scientist residency that brings together artists and scientists for a monthlong retreat in the Santa Cruz Mountains. During the course of the residency, artists working in a variety of media work closely with scientists working in various disciplines to explore and transform the boundaries of art and science. A strong sense of play and experimentation is essential. This is not a product-based residency. Artists and scientists will be free to work on their own projects. Participants will be expected to be in-residence for the entirety of the session. In addition to collegial time, the artists and scientists contribute to a regular series of blogs, an Open Studio, papers and a special section in Leonardo journal.

CAMILLE BAKER**University for Creative Art, WEARSustain, STARTS Ecosystem**

Camille Baker, PhD Digital Media, Reader in Interface & Interaction at UCA, has been involved in the pre-STARTS activities: co-organizing and facilitating early discussions for ICT-Art Connect in 2012 and then the first residencies (1 week to 3 months) for FET-Art /ICT-Art Connect CSA 2013-2014; to leading the WEAR Sustain project from 2017-2019 and developing the criteria for most of the Work Packages such as application and selection process, to match-making activities and the monitoring of teams.

DAVID BERMAN**Queen Mary University of London**

David Berman is a theoretical physicist who has worked with artists over the last 15 years. This has included multimedia artists, sculptures, installation artists and other fine arts. The residency program at Queen Mary brings the abstract of string theory and theoretical physics to the art world.

MANUELLE FREIRE**École Nationale Supérieure des Arts Décoratifs**

The Behavioral Matter workshops and Dissect took place at the Centre Pompidou (Paris) in March 2019. The program of activities involved over 80 international participants conducting collaborative research and creation. The workshops were held over three days, in a public 70 square-meter arena. Twelve clusters were organized by artists, designers, or by engineers and scientists, and included researchers and practitioners from the other disciplines. The common thread: the practice-based investigation of the physical and physiological properties of matter and of its agential properties. By giving center-stage to critical making and dialogue that will not only generate new types of knowledge but also provoke unprecedented ways of engaging with, and transmitting it, researcher-creators worked alongside scientists and humanists, and engaged with the public, raising questions and experimenting approaches that moved away from institutional habits that are no longer suited for the contemporary ontologies. The Behavioral Matter activities, including the Dissect dispositive and round table discussion, destabilized its institutions as well as its participants by forcing them away from their usual disciplinary comfort zones, their ways of conducting and presenting scholarly research. This session will focus on implications and recommendations about how artists, designers and scientists can position themselves to take disruptive action within the agendas of the research, education, and cultural institutions they work in and collaborate with, to change disciplinary organizational cultures and mechanisms.

MONDAY, MARCH 2**DAVID HARRIS****Griffith University**

Toward a frame-independent taxonomy of art and science collaboration. Art and science collaborations take a multitude of forms, some of which appear dominant while others remain relatively unexplored. Residencies are currently one of the dominant forms of art and science collaboration. The broader potentials of the landscape of collaboration are not yet well described although there have been numerous calls for their classification. Previous informal attempts at classification have focused on a small number of possible dimensions of collaboration but each has a distinct focus, privileging different aspects of collaboration. Classification processes (in many fields) are dependent on the framings through which systems are observed. The framings we use can reflect the subconscious epistemological positions or goals of participants or observers and potentially color the approach to collaboration by the participants. For example, an aesthetic framing could bias a classification model and collaboration mode toward creative output dimensions; a semantic framing could bias toward science-based knowledge/content dimensions; and a critical theory framing could bias toward structural/organizational/political dimensions. A fully frame-independent classification might not be possible but assumptions can be explored via an attempt at such a classification system. This work presents a draft taxonomy of collaboration developed in terms of underlying theoretical concerns and observed dimensions. However, this highly multi-dimensional taxonomy is unwieldy in application so calls for dimensional reduction, which can be attempted through various cluster analysis techniques to identify distinct collaboration modes as the possible foundation of what Simioniti describes as topologically-defined fields of art and science practice. The taxonomy and subsequent analysis could be useful for exploring novel forms of collaboration including forms of residencies, for an alternative understanding of the nature of existing and planned collaborations, and for helping collaborators to position their work in the growing field of art and science collaboration.

CLAUDIA SCHNUGG**Curator**

In the past few years, Claudia Schnugg has been working with numerous art-science projects and residency programs in scientific organizations and sci/tech contexts. As a researcher, she is interested in what is the role of art-science collaboration in societies and organizations, and what makes this interaction with art so valuable that it is different to other interdisciplinary collaboration. This is also important knowledge in order to design art-science programs and projects, as well as to curate and manage them. Trained in social and organizational studies as well as in cultural and art theory, she has been looking at the collaboration process in detail from a perspective drawing from various theories in this realm (e.g., motivation, communication, networks, liminality, creativity theory). Drawing from numerous interactions, qualitative interviews, participatory observation, and research on cases, she elaborates on the potential of art-science collaboration to contribute to understand the importance

of the process to artists and scientists and to add values in organizational settings. A focus on the process is important to understand long-term effects and the importance of the experience throughout the collaboration process between artists, scientists and engineers. It also helps to understand that the contribution of art-science collaboration processes is often to be found implicitly in future developments and not in immediate outcomes (which can be interesting and important contributions, too). By this ongoing shift of the focus from the outcome to the process of art-science collaboration, it is possible to discover in more depth value-added contributions of art-science experiences on an individual level (e.g., new ways of knowing and thinking, understanding of materials and processes, and learning). Building on her work in developing and guiding different residency formats and art-science collaboration opportunities, she will talk about her practical experience. In this process, the needs and goals of artists, scientists and organizations have been identified in order to create manifold possibilities to engage in residencies depending on their phase of development and goals.

15:40 Organizing Residencies

GREG BELLER

IRCAM, STARTS Residencies

Greg Beller works as an artist, a researcher, a teacher and a computer designer for contemporary arts. At the nexus of Arts and Sciences at IRCAM, he has been successively a PhD student on generative models for expressivity and their applications for speech and music, a computer music designer, the director of Research/Creation Interfaces Department and the product manager of the IRCAM Forum. Founder of the Synekine Project, he is currently doing a second PhD on "Natural Interfaces for Computer Music" at the HfMT Hamburg in the creation and the performance of artistic moments. He is the leader of the work-package residency monitoring of the Vertigo STARTS Residencies program.

MONICA BELLO

CERN

Arts at CERN is the official arts program of CERN and the leading worldwide art and science program fostering the dialogue between artists and physicists. Their main goals are to foster significant exchanges between art & physics and to participate in an international cultural community eager to connect with CERN. Artists across all creative disciplines are welcome to experience the way the big questions about our universe are pursued by fundamental science. CERN programs: Collide, Accelerate, Guest Artists and Art Commissions and Exhibitions.

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CATERINA BENINCASA & RODRIGO PEREZ GARCIA**Polyhedra**

Aesthetics get Synthetic: Knowledge Link through Art and Science» (KLAS) is an artist-in-residence program of the Max Planck Society, conceived and coordinated by Polyhedra.eu. KLAS fosters ArtSci exchange and transdisciplinary innovation and education whilst also establishing a link between the synthetic biology research groups of the Rijksuniversiteit Groningen (NL) and the two Max Planck Institutes in Potsdam (DE). The talk will showcase artistic ventures at KLAS, and discuss experiences and possible futures of an art-science program pivoting on artistic research discovering and connecting different scientific research institutes, and how these curiosity-driven encounters and explorations succeed towards generating meaningful science-and-society interactions. Through the contextualization of the work of artists working at the forefront of scientific research, and experiences aiming to probe ideas and expectations of the scientists and artists alike, the talk will make a case for allowing artists and researchers “enough rope” to play, co- and re-create.

VALÉRIE FÉLIX**Code / Art Research Program**

Code is a project dedicated to art research on digital issues within our societal structures. Through an online collaborative research program, conferences and exhibitions, axes of reflection aim to deploy new discursive questioning about our digital everyday life. The digital integration in our daily lives redefines data related to societal aspects, and it is exactly on this axis of reflection that Code is situated. Too often seen as a threat to our own reality, or on the contrary, embodying the utopian promise of a better world, the ubiquitous digital environment is approached as an element that creates a gap between “true and wrong”. Whereas on the contrary, bonds must be created, in order to develop reflections around the societal issue of digital and analyze the digital influence and the conditioning on our way of living and thinking. By integrating art as a crucial element in a research discussion, the project Code positioning theoretical and empirical reflections side by side. The online platform Code aims to connect researchers with similar questions about the digital society. Thanks to the fact that the exchanges do not focus on topics such as “new technologies” or “artistic expressions in new media” allows the establishment of an interdisciplinary emulation around digital questions related to the contemporary society and not a fascination for technology and science. Research is a daily activity in artist’s life, but it’s not often highlighted. By Code, the aim is to bring together artists to create a group-wide emulation, to share ideas and finally give a real place to the act of research in art. Then, this creation of a community of researchers is a horizontal collaboration between the artists and the structure Code – within everyone is involve for research, exchange concepts and move forward ideas.

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Re-FREAM will enable co-creation of scientists and artists in urban environment by offering facilitation services, access to know-how and technologies as well as mentoring. Re-FREAM opens the doors of the laboratories of researches giving the opportunity to Artists and Designers to co-explore the technology for fashion of the future.

9:30 Seeding Innovation

LEILA KINNEY AND EVAN ZIPORYN

MIT CAST

The MIT Center for Art, Science & Technology (CAST) was founded in 2012 to support and deepen interaction and collaboration between disciplines. The center has supported approximately 95 artist residencies, 40 courses, 75 public performances, and 180 public programs. CAST has collaborated with more than 30 departments, labs, and centers across all five schools at MIT. As is clear from these numbers, their Visiting Artists program - i.e. artist residencies - is a major cornerstone. These residencies orient toward the research and development phase of artistic work. Each residency is uniquely designed and implemented; all embed artists in ongoing research and teaching programs at MIT where scientists and engineers are open to artists' speculative and hands-on way of working. Visiting Artists come from a wide range of visual and performing arts disciplines, exposing students to the creative process and fostering cross-fertilization among disciplines. Leila Kinney, Executive Director and Evan Ziporyn, Faculty Director will start with a broad overview of CAST - its mission and ethos and evolution over the past 7 years. They will then focus on recent CAST-sponsored collaborations with Tomás Saraceno, Agnieszka Kurant, and Matthew Ritchie, each demonstrating different aspects of the program and contrasting outcomes.

SANDRA BOER

Art Partner

Since 2008 Art Partner worked with over 50 companies and more than 50 artists on a large variety of artistic interventions. They use the power of creativity for all issues that their clients submit to them. Creativity stimulates and inspires. It triggers change and ensures growth. It shows new insights. Specifically, they use the creativity of artists. Artists look different, ask questions that no one dares to ask, stimulate and challenge. And thus, they can tackle the issues that businesses are struggling with. The team developed programs that have lasted for more than 5 years for organizations such as KPMG and VU University of medical sciences. These programs involve amongst others leadership programs, events, design of innovation centers, masterclasses, artistic interventions, artistic research, storytelling and much more.

NICOLAS HENCHOZ

EPFL+ECAL LAB

The EPFL+ECAL Lab is a unit of the EPFL (Ecole polytechnique fédérale de Lausanne) in cooperation with ECAL (University of art and design Lausanne). Its mission is to foster innovation at the crossroads between technology, design and architecture. The Lab aims at giving new meaning to technologies developed in the scientific labs, fueling innovation by widening the scope of designers' work and forming new links between research and applications for society.

JURIJ KRPAN**Kersnikova Institute**

Kersnikova Institute acts as a platform for developing art and science projects, presenting through art the new ethical dilemmas, emanating from recent advances in (bio)technologies, and educating the public on the use of technology in a way that empowers them. The organizational module of Kersnikova with its wet labs (BioTehna and Vivarium), mechatronic lab (Rampa) and the extensive program of workshops for children, young adults and experts originates in 25 years of producing and presenting the cutting edge, avantgarde art in Kapelica Gallery. When working with artists in the field of new media for almost three decades, reflecting upon new social advances, from computer technology and internet towards inventions in life sciences that immensely affect our lives, they were in order to sustain the high quality of artworks forced to form teams of experts, who were helping with the realization of each artwork: programmers, scientists, architects etc. They were on the right track when they wanted to reflect the fast-changing society through art but in lack of almost everything: the progressive ideas that would come with the new kind of artists, technical equipment, institutional support and – the audience. They started to collaborate with several institutes for scientific help, with companies for equipment, and with schools and universities to actively engage young people. From this and with the help of European funding they constructed their labs, began to work with experts on regular bases, developed their own educational DIY and DITO programs to educate the new generation of people with the in-grown sense for various connections between art and science. They believe that complex production support enables and initiates great artworks. One of their recent occupations is the development of methods for art-thinking (vs. design-thinking) for the use in education and industry.

NICOLA RUFFO**Swissnex San Francisco**

Swissnex San Francisco connects Switzerland and North America in the areas of science, education, art and innovation. In cooperation with the Swiss Arts Council Pro Helvetia, it organizes interdisciplinary programs with innovative and experimental features. Swissnex functions as a link between the Swiss art scene and the creative and technology industries located in the San Francisco region.

HÉLÈNE SCHWALM**Université de Bordeaux**

The University of Bordeaux in the context of its initiative of excellence wishes to participate in the promotion of creativity at the Bordeaux higher education and research site, in order to make it a living space, open to all forms of innovation, and it wishes to achieve this by supporting emerging initiatives and promoting them in the region and to the public. This is why it is part of a dynamic «Arts and Sciences» program composed of an Arts and Sciences program providing support in residence of co-creation projects and a festival, FACTS

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-Festival Arts Creativity Technologies Sciences, providing support in the dissemination and valorization of these projects. The Arts and Sciences program supports projects of collaboration between scientists (PhD student, researcher, research engineer) from the higher education and research establishments that are partners of IdEx Bordeaux who wish to initiate a dialogue between art and science, and artists, whatever their field. They applied together and the projects are selected by a committee composed by academics but also arts and sciences professional. The projects that receive support will consist of a team including at least one researcher and one artist. Each participant may work alone or be part of a team and partners and collaborators may be included in the application. For projects which do not yet have both a scientist and an artist in their team, meetings will be organized during the application period between scientists and artists who are interested in the project. Depending on the nature of the project, the University of Bordeaux may provide different kinds of support during the residency's duration (between 12 and 18 months): direct financial aid, assistance with project management, assistance with making the public aware of the output of the project, notably with the FACTS Festival.

KARLA SPILUTTINI**Ars Electronica, ARTificial Intelligence Lab**

Ars Electronica has a long tradition of residency programs that aim to link up artists and scientists. One of the most recent programs is the European ARTificial Intelligence Lab. The European ARTificial Intelligence Lab is bringing AI related scientific and technological topics to general citizens and art audiences in order to contribute to a critical and reflective society. In cooperation with artistic & cultural institutions as well as Max Delbrück Center for Molecular Medicine, Edinburgh Futures Institute, Muntref Centro de Arte y Ciencia and Fraunhofer MEVIS, Ars Electronica offers artists the chance to spend several weeks at one of the partner institutions and the Ars Electronica Futurelab for their residencies. The whole project is focusing on aspects beyond the technological and economic horizon to scrutinize cultural, psychological, philosophical and spiritual aspects. From the perspective of 13 major cultural operators in Europe (Ars Electronica, Center for Promotion of Science, Zaragoza City of Knowledge Foundation, Laboral, Kapelica Gallery, Science Gallery Dublin, Onassis Cultural Center, The Culture Yard / clickfestival, GLUON, Hexagone Scène Nationale Arts Sciences, SOU Festival, le lieu unique, Waag), the European ARTificial Intelligence Lab centers visions, expectations and fears that we associate with the conception of a future, all-encompassing artificial intelligence. An extensive activity program in the form of exhibitions, labs, workshops, conferences, talks, performances, concerts, mentoring and residencies will foster interdisciplinary work, transnational mobility and intercultural exchange.

11:30 Supporting next generations

ALEXANDRA MURRAY-LESLIE & ANDREW PERKIS

Norwegian University of Science and Technology

NTNU ARTEC at the Norwegian University of Science and Technology is a trans-disciplinary team of artists, engineers, scientists, musicians and digital humanities scholars behind this visionary artist in residence. The NTNU ARTEC AIR provides the rich environment of a technical university as a context for artists, to deeply engage with and radically explore the potential of trans-disciplinary collaboration to inform critical reflection about the social and ethical dimensions of our technological global moment. Every year NTNU ARTEC invites 2 esteemed artists, each for a period up to two months. The 'AIRs' have "carte blanche" whilst at NTNU to interact with scientists, technologists, makers and thinkers to further their own individual practices to inform a dedicated, ambitious project. The exploration that follows can manifest in a completed final project, informed by artistic research. What makes this university residency unique, is that the artists own 100% of their work, the organizers provide a €15,000 stipend for the two months and 2 assistants to support the artists' work whilst in residence. Throughout each residency, AIRs get the chance to share their work in a public exhibit or lecture that is open to the public, they also have the opportunity to share their processes and findings throughout the residency at various public scientific and cultural events in Trondheim. The ARTEC program has evolved over the last 5 years to welcome a wider range of artists exploring the future of technology through artistic research and practice. The team invites artists who are essentially experts in their fields, to bring in-depth knowledge to the community.

Alexandra Murray-Leslie is a poly-artist, artistic researcher and co-founder of Chicks on Speed. Alex is currently Associate Professor at Trondheim Academy of Fine Arts, NTNU, Norwegian University of Science and Technology. She completed her PhD in Practice-based research, Creativity & Cognition Studios, Department of Engineering and IT, The University of Technology Sydney, followed by taking up ARTEC artist in residence at NTNU in 2018.

DEBORAH LAWLER-DORMER

Museum of Applied Arts and Sciences

The Visiting Research Fellowship Program provides a supportive environment for researchers to undertake research related to the Museum's collection, education, conservation and museum practice. The fellowships enable researchers to access the Museum's resources to support their research for a short period of time. The visit will initiate and develop collaborative research and facilitate interaction with, and training of, MAAS staff. Visiting fellows are expected to make a tangible contribution to the Museum during the period of their stay, for example, through presenting work-in-progress or research outcomes to MAAS staff or through the public programs offered by the Museum, professional development for MAAS staff, contributing to object statements, writing articles for publications, developing new creative works or by making a broad contribution to the Museum's public programs.

TUESDAY, MARCH 3

JULIE SAURET**Chaire arts&sciences**

La Chaire arts & sciences is a collaborative program between researchers, artists, scientists and designers to create a common narrative about our interdependence to our environment (climate issues, relationships to matter, understanding and interaction with the worlds of plants and technologies). Founded in 2017, the Chaire arts & sciences brings together École Polytechnique and École Nationale Supérieure des Arts Décoratifs-PSL, with the support of the Daniel and Nina Carasso Foundation. The aim is to create innovative research and ideas through interdisciplinary encounters and original research practices: conferences, artistic installations exhibitions, workshops, thesis defences-exhibitions or kidlabs. As the communication - project manager of the Chaire arts & sciences, Julie Sauret has been involved in the organization of some Art & science Residencies.

3 main events in 2019 of interest for this symposium: Behavioral Matter international art-design-science workshop at Centre Pompidou, March 15-17, 2019, Art & Science Summer School "Useful Fictions" at École polytechnique, September 9-13th, 2019, Virgile Novarina (artist-performer) and Walid Breidi (sound designer) in residency at Ecole Polytechnique in 2019 for collaborating with the art & science collective "Labofactory" about the materialization of neuronal waves during sleep.

CLAUDIO SERNI**University of Bologna**

Claudio Serni is both art science residence organiser and researcher in art-science collaborations. He manages the art-science residency programme FAST (Florence Art, Science and Technology). It started in January 2018 from a collaboration between the University of Florence and the Academy of Fine Art of Florence. It stems from the desire to create a place in Florence where scientific research, technology and art can meet. Its first edition started in June 2018 through an open call for students (both from Academy of fine art and University) and finished in September 2019 with an exhibition of the artworks created during the residencies. More than 60 students applied for FAST call and took part in the first visits of University's laboratories. After observing the researchers' daily work, the participants wrote a proposal to realise an artwork. Thirteen proposals were selected. The authors of the selected proposals had the opportunity to return to laboratories and discuss with the researchers throughout their artwork creation. A wide range of scientific disciplines has been involved, including laboratories from Biology, Experimental and Clinical Medicine and Earth Sciences. Throughout the residencies, workshops have been organised in order to help participants with both artistic and scientific aspects.

Now Claudio Serni is designing a new art-science project at University of Bologna in collaboration with UCD (University College Dublin) focused on science and technologies used to handle issues and challenges confronting many cities today.

ANA SOLANGE LEAL**Inova+, STARTS Residencies/Ecosystem**

Inova+ is a company specialized in supporting the growth of organizations through innovation, international cooperation, digital transformation and access to funding. The company is involved in the STARTS Residencies project and coordinates the STARTS Ecosystem project. As the Area Manager for H2020 and senior project manager of the International Unit, Ana Solange Leal's responsibilities include the coordination and participation in EU and International funded projects, and the elaboration of proposals to submit to the H2020 programme of the EC.

GUY VAN BELLE**IPEM UGENT**

IPEM is committed to research on new forms of musical interaction, production and experience, based on emerging technologies. The research and artistic residencies take place in the Art-Science-Interaction Lab (ASIL), which is run as a joint infrastructure with UGENT's sound/music and cultural researchers, data-science engineers, industrial designers, and nanoelectronics manufacturers. Artistic residencies are taking place to conform to the lab's experiments into extending embodied music cognition and interaction with AR/VR 3D audiovisual technologies, generating new environments for practicing and experiencing future music and art. At this moment there has only been collaborations on demand, by both artists and cultural organizations. Since the start in 2017, the lab has been working with a number of very varied artists and visitors. From classical ensembles to electronic and generative composers, 3D-video and experimental filmmakers, embodied theatre performers, poets and dancers, weightlifters, new jazz bands, and even has built a biofeedback sound installation for babies. IPEM as an incubator for new creative-artistic practices is dedicated to experiment and development, while productions are in collaboration with the rich Belgian culture scenes. ASIL provides the residents with a 64-speaker wave field synthesis system, a 16-camera optical motion-tracking system, HTC Vive Pro Eye headsets for virtual reality display, and two mobile EEG systems, plus a series of motion and physiological sensors. Since IPEM owns a restored Synthi100, which is connected to the wavefield synthesis and ambisonics set-up and can be controlled by a fast and accurate mocap system, there is a huge interest also from a new generation of modular musicians and performers. IPEM has strong expertise in building IoT prototypes for body-music interaction. The basic requirement for artists at IPEM is to express an interest in its research and experiments, and the will to think together with the researchers to advance this mutual involvement.