

### **Giovanni Azzaroni**

Università di Bologna

Giovanni Azzaroni taught Anthropology of Performing Arts and Oriental Theaters at the Department of Music and Entertainment of the University of Bologna. He has researched in Asia, Africa and the South of Italy. Among his most recent publications *Teatro in Asia* (Theater in Asia), 4 voll. (1998-2006); *Le realtà del mito due* (The Realities of Myth Two) (2008); *La Settimana Santa a Mottola* (The Holy Week in Mottola) (2010); With Matteo Casari, *Asia il teatro che danza* (Asia theater dance) (2011) e *Raccontare la Grecia* (Tell Grecia) (2015); *Il mare della fertilità* (The sea of fertility). *Un'analisi antropologica della tetralogia di Mishima Yukio* (An anthropological analysis of the tetralogy by Mishima Yukio), Rome, Aracne, 2017. He is the scientific director of the online magazine *Antropologia e Teatro - Rivista di Studi* (Anthropology and Theater - Journal of Studies).

Title **BIT: eresia interconnettuale**

Abstract Giovanni Azzaroni participates to the round table "BIT: interconnettual heresy", on the relationship between contemporary theater and communication technologies.

### Roberta Buiani

Co-founder of the ArtSci Salon  
Fields Institute, Toronto  
<http://atomarborea.net>

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 work explores how scientific and technological mechanisms translate, encode and transform the natural and human world, and how these processes may be re-purposed by relocating them into different venues. Her work is mobile, itinerant and collaborative. She brought it to art festivals (Transmediale 2011, Hemispheric Institute Encuentro, Brazil 2013), community centers (the Free Gallery Toronto, Immigrant Movement International, Queens), science institutions (RPI) and the streets of Toronto. Recently, with The Cabinet Project she proposed an experiment in "squatting academia", by populating abandoned spaces with SciArt installations. She holds a PhD in Communication and Culture from York University (CAN). For more information and to read her publications go to <http://atomarborea.net>

### Title **The Cabinet Project: engaging "the old" to trigger new connections**

Abstract Between October 2016 and March 2017, 12 artists active in various practices at the intersection of Art and Science (bioart, kinetic art, electronic art, sound art, visual art) were assigned a series of abandoned cabinets and half-empty spaces located in the proximity of science departments and science laboratories around the University of Toronto St George Campus. The goal was to repopulate and revitalize these cabinets by filling them with artworks that resonated (literally or fictionally) with the sciences, the instruments and the human and non-human protagonists residing in their proximity.

Containing outdated conference posters, or dusty scientific objects that have been forgotten there for years these cabinets lied unnoticed, somehow confirming ideas about science institutions as reclusive spaces where secrecy reigns, or self-isolated spaces uninterested in communicating with the outside world. However, at a closer look, those neglected cabinets have fascinating and compelling stories that speak to their mobility, their past uses and their owners; laboratories in their proximity burst of excitement and boredom, frustration and euphoria, their machineries being constantly fabricated, rethought, dismantled or replaced; in these laboratories, individuals, objects and instruments come to life in complicated ways. These objects, human relations and stories are forming ecologies that are very much alive. These ecologies constitute a different type of unexplored cultural heritage consisting of overlapping and intersecting – often untold – stories. In turn, these stories do not communicate the repetitive institutional chronologies made of endless innovation and grand discoveries often found in universities promotional materials. They uncover more humane, material and sensorial bits. how can these diverse ecologies be communicated? How do we make them evident, and manage to recover the lost connections between the – very human, very diverse, very lively – space of the lab and the socio-cultural fabric of the city?

In response to the these questions, The Cabinet Project resulted in a #sciart distributed exhibition, and a research-creation endeavor aimed at evoking and revealing the above forgotten stories and the complex ecologies that characterize spaces of science and institutional space; and at creating new forms of communication and connection between academic spaces and the fabric of the city (thus re-appropriating the space of the university as a public space). Using as starting points rare instrument collections and current and past teaching material, as well as historical testimonies about the sciences and the objects that had been produced in the nearby departments, the artists involved produced installations that managed to break, if temporarily, old narratives of neglect and segregation dominating scientific knowledge, and to enable a prevalently non-academic audience to enjoy unexpected collaborations between artists and scientists and to explore the university space as a newly re-appropriated public space.

### **Sonia Cannas**

Researcher  
University of Pavia  
University of Strasbourg

Sonia Cannas holds a Master of Science in Mathematics at University of Cagliari and a Master of Arts in Viola at the Conservatory of Music "G. P. da Palestrina" in Cagliari. Currently, she is a PhD student in Mathematics at the University of Pavia, in co-tutorship with the University of Strasbourg and in agreement with the University of Milano-Bicocca. She is a member of the research project "SMIR" (Structural Music Information Research), financed by USIAS (University of Strasbourg Institute for Advanced Studies). Main research interests include the research in Mathematical Music Theory, in particular geometric and algebraic models for music analysis, composition and computational musicology. She is also interested in the history of mathematics and music, interdisciplinary teaching and learning, and scientific dissemination.

**Title**      **Can mathematics help to compose music?**

**Abstract** Modern music analysis has discovered irrational numbers in some musical compositions, in particular Pi and the golden number. A natural question arises: did composers use them consciously? Starting from this question it will be presented new compositional strategies characterizing the 20th century. In particular, it will be explained how algebraic properties and geometric models offer compositional tools.

### Pier Luigi Capucci

President & Editor in Chief

Noema

Accademia di Belle Arti di Urbino

<http://capucci.org>

<https://noemalab.eu>

Pier Luigi Capucci is a professor, a cultural manager and a media expert. Since the early '80 he has been concerned with the communication's studies, the new media and the new art forms, and with the relationships among arts, sciences and technologies. His theoretical activity is concerned with the technologies of representation and communication, with the technoscience-based art forms and with the media studies. His applied research is in the fields of online communications and media. He has been a teacher at the universities of Rome "La Sapienza", Bologna, Florence, Urbino, at the SUPSI – University of Applied Sciences and Arts of Southern Switzerland in Lugano, and at the fine arts academies of Carrara and NABA in Milan. Since 2013 he has been appointed as the Director of Studies of the T-Node Ph.D. Research Program of the Planetary Collegium (University of Plymouth), and currently he is a teacher at the Fine Arts Academy of Urbino. He has extensively and internationally published in books, articles and conference papers, he has organized exhibitions, managed projects and participated to conferences worldwide. In 1994 he founded and directed the first Italian online magazine, NetMagazine, later MagNet, on the relationships between arts and technologies. In 2000 he started Noema project, an online magazine devoted to culture-sciences-technologies interrelations and influences.

**Title** **Poetics of complexity, Third Life, locality and universality**

**Abstract** Art has always dealt with complexity, artworks have often involved complex intellectual, cultural and technical processes, knowledges, competences and skills. Today, thanks to sciences and technologies, the most interesting contemporary artforms seem to refer to more complex poetics, with the new tools it is possible to operate with ideas, topics, and to express criticisms in a richer way. Art can discuss the complex issues between humanity and the phenomenal world, about the environment, the living beings, the idea of Nature. In this respect, and more effectively than other disciplines, art becomes a philosophy of contemporaneity.

Through sciences and technologies humanity is shaping a wide and complex panorama pervaded by new devices, machines, algorithms and lifeforms, emerging from different realms. Today disciplines like Robotics, Artificial Intelligence, Artificial Life, Smart Algorithms, Synthetic Biology, Genetic Engineering, Biotechnologies, Nanotechnologies, Internet of Things, De-Extinction and more are pushing further the borders of life and evolution. A wide range of artefacts, devices, machines, entities are quickly becoming more and more powerful, complex, autonomous and independent. Scientific evolution has led to the capacity to deeply modify existing organisms and create new ones, new species that would have never evolved naturally. We are going to assist to an extension of the idea of life and of life forms, from the organic realm to a complex panorama with organic, inorganic as well as intermingled life forms. Through sciences and technologies humanity is creating a sort of "Third Life", originating from knowledge and culture, which is independently and autonomously evolving, expanding Nature from inside the realm of Nature itself.

All this processes seem pushing forward human knowledge and awareness, as well as its boundaries and objectives, and at the same time they are relativising the secular centrality of humanity's role. Can these processes give any glimpses on a possible evolution? Can art, like in the past, anticipate and perform a viable vision of these complex transformations?

### Silvia Casini

University of Aberdeen

[www.arscientia.eu](http://www.arscientia.eu)

Silvia Casini is lecturer in visual culture and film at the University of Aberdeen. Her main research interests regard the aesthetic, epistemological and societal implications of scientific visualization, particularly in the case of emerging technologies. She has been involved in curatorial, museum and public engagement work for institutions such as the Natural History Museum in Venice, the A. Qattan Foundation in Palestine. She acted as evaluator for Horizon 2020 projects. She created and coordinated the project Arscientia in Venice ([www.arscientia.eu](http://www.arscientia.eu)).

Her articles appeared in *Nuncius. Journal of Visual and Material Culture of Science*, *Journal of The Senses and Society*, *Configurations*, *Leonardo Journal*, *Contemporary Aesthetics*, *MuseumsETC*, *Bloomsbury*, *Museologia Scientifica*, *The Italian Journal of Science and Technology Studies*. Her first monograph in Italian “Il ritratto-scansione. Immaginare il cervello tra Neuroscienza e Arte” has been recently published by *Mimesis* (2016).

**Title** **Visualising Data In-between Science and Art: Biomedical imaging practices in MRI innovation, past and present**

**Abstract** In recent years, visual culture research entered a dialogue with STS to investigate the material contexts and practices that make use of computerised visualizations and models (Carusi et. al. 2015). Researchers at the University of Aberdeen have always been at the forefront of biomedical imaging research, initially thanks to the construction in the late 1970s of the world’s first whole-body clinical Magnetic Resonance Imaging (MRI) scanner led by Mallard and, more recently, associated with the development of fast field-cycling MRI. Using both archival and ethnographic methods (Latour and Woolgar 1979, Knorr-Cetina 1999), I analyse visual and material practices as they unfold in the laboratory. I explore how decision-making processes related to the acquisition, visualisation and interpretation of data were and still are crucial elements in the development of novel techniques for visualising the brain. The study of the archival material on the development of the first MRI scanner combined with fieldwork in the laboratory in which the new FFC-MRI is under development, highlights the importance of data visualisation before a new biomedical imaging technique becomes standardised. Making explicit the forces and procedures at work in the development of the new MRI (also thanks to an artist-in-residence collaboration) opens visualisation alternatives - for example, alternatives to the “extreme image” problem highlighted by Dumit (2014). Greater understanding of alternative visual representation choices enables researchers to better address the differing needs of future scientific, clinical and patient communities.

### **Dimitris Charitos**

Assistant Professor  
National and Kapodistrian  
University of Athens  
<http://www.media.uoa.gr/~charitos>  
[www.media.uoa.gr/emobilart](http://www.media.uoa.gr/emobilart)

Dimitris Charitos (1965) is an Associate Professor in the Department of Communication and Media Studies at the National and Kapodistrian University of Athens where he teaches the subjects of human-machine communication, interactive design, new media art and visual communication. He studied Architecture at the National Technical University of Athens, and C.A.A.D. in the Department of Architecture, University of Strathclyde (Glasgow). He holds a PhD in interactive and virtual environments design. As a researcher or coordinator, he has participated in more than 15 research projects (funded by Greek and European programs) on the subjects of virtual reality, interactive design, locative media, mediated cities, digital art and multimedia. He has more than 90 publications in books, journals and conference proceedings and more than 400 citations. Starting from 1983, his artistic practice includes electronic music (1983-1993), audiovisual and interactive installations and virtual environments (1997- to the present). He has participated in 15 exhibitions in Greece, the UK, Cyprus and Canada.

### **Title      The transdisciplinary nature of creating immersive spatial experiences**

**Abstract** Recent technological advancements have turned virtual reality technology into a consumer product that may potentially be experienced by millions of individuals. These advancements have created an urgent need to investigate methods and approaches towards creating content and spatial compositions which will host immersive spatial experiences of different types, levels of immersion and application needs. Virtual Reality is an interface to potentially all kinds of communications media and a novel form of interface on its own. We are going through the second phase in the emergence of VR technology. The 1st one lasted from the end of the nineties till the beginning of the previous decade and as Laurel (2016) suggests it is important to be very careful and precise in how we identify the intrinsic nature and structural characteristics of VR, in order to avoid making the same mistakes made in the 1st phase of the technology and stretching VR's name too thin. One thing is certain: creating virtual environments is a complex, multi-level and transdisciplinary process, requiring input from several disciplines such as: interaction design, computer graphics, architectural design, cognitive and environmental psychology, visual design, etc. If we want to see the medium evolving as quickly as the technologies supporting it and if we want to avoid seeing the medium being drowned into the extreme expectations that surround it, as was the case at the end of the 1st phase of VR, it is important to invent open, user-generated tools and relevant methodologies for bottom-up creation and sharing of content for virtual environments.

#### References

Laurel, B. (2016) "What Is Virtual Reality?", [<https://medium.com/@blaurel/what-is-virtual-reality-77b876d829ba>]

### Jadwiga Charzyńska

Director

Laznia Center for Contemporary Arts, Danzica

<http://www.laznia.pl/index.php?lang=en>

<http://www.artandsciencemeeting.pl/?lang=en>

She obtained the MFA degree at the Faculty of Painting and Graphic Arts of the State College of Visual Arts (PWSSP) in Gdańsk in 1994. Since 2004 she has been director of LAZNIA Centre for Contemporary Art. Earlier she worked in the National Museum in Gdańsk. She started her career as manager during her studies, organizing art projects, which subsequently allowed her to obtain an extra degree in culture management. Her most important long-term program initiatives at the LAZNIA are: Outdoor Gallery of the City of Gdańsk (launched in 2005) and Art+Science Meeting (in close cooperation with Ryszard W. Kluszczyński; launched in 2011) – the program which introduced to Polish audience the works of such artists as Stelarc, duo Oron Catz & Ionat Zurr or Masaki Fuijehata). In 2008 she obtained the Award of the Mayor of the City of Gdańsk in category Culture. In the same year, along with the entire LAZNIA team, Charzyńska obtained the Bronze Medal “Merit to Culture Gloria Artis”, awarded by Minister of Culture and National Heritage. In 2015 she received a special award from the Minister of Culture and National Heritage in recognition of “inestimable merits for Polish culture”. She publishes in artistic magazines and publications edited by ŁAZNIA.

**Title**      **Chimera and Virtual Network, or a Contribution to the New World Order**

**Abstract** From 2011 The Art+Science Meeting project presents art and science through an expanded exhibition, workshop, publication, meeting and debate program as two different perspectives of the same reality. The interdisciplinary character of the project gives a possibility to present the achievements of world's most outstanding artists who create in the area of science and technology. It also allows a wider look on the contemporary civilization for which science and technology are progress conditions but still remain opaque to most people.

New technologies as an effect of scientific effort, are a part of our everyday suffering for surfeit. Art is a litmus test, mirror and interpretation of our world, as well as technocratic progress.

According to Jean Baudrillard, "new technologies don't alienate the individual, but merge with him/her and create an integrated circuit," and – without doubt – the art in that circuit is a perfect relay of different kinds of energy.

The world is a collection of communicating vessels where nothing is permanent. When referring to the consumerism that is “consuming” us on an everyday basis, we forget that “the goal is not luxury and wealth, nor is it poverty, but giving birth to one's inner wealth,” – as Erich Fromm wrote.

When we look around, his question “to have or to be?” remains exceptionally relevant. The effectiveness of the message is the essence of education. Human imagination and art allow us to frame our emotions, give them shape and color, and make them accessible. And that is the role of the modern gallery and museum. For “culture is not for everyone, but it is for everybody. And it is up to each of us – and not just for the few 'culturally competent' – to create a chance to fulfill our personal potential”, as was said a few years ago during a debate on art education. That thought describes the role of contemporary art from the perspectives of both the artist and the audience.

### **Giovanni Chessa**

Centro culturale Le torri di Budrio,  
Budrio

<https://goo.gl/sAz2rW>

Giovanni Chessa (musicologist) and Liliana Stracuzzi (art expert and critic) since 12 years are art directors of the cultural Centre Le Torri dell'acqua di Budrio (the Water Towers of Budrio), where they organize annual music events, with programs including classical music and experimental contemporary music. An important yearly meeting is "Dialogue on composition", a festival with musicians from all Europe. The cultural program of Le Torri di Budrio includes also the organization of art expositions and art lectures by Liliana Stracuzzi and other experts.

**Title**      **Making enjoyable complex listening**

**Abstract** Contemporary music is a very difficult exercise of complex listening: the challenge deals with overcoming our "listening routines" of compositions such as melodies, consonance and all the traditional anticipation of musical discourse. From our experience and organization of musical events we have picked up some useful elements which make easier this complex listening of variation and dissonance. That means more involvement and participation of the public and getting to a closer relationship between listeners and musicians. Some examples of musical pieces associated with the reaction of the public will be selected for a better understanding of open and complex listening.

### Giorgio Cipolletta

Università di Macerata

CRASH

<http://docenti.unimc.it/g.cipolletta>

<http://creativeartshocking.eu>

Giorgio Cipolletta is a transdisciplinary artist and media-therorist. In 2012 he earned a PhD in Information and Communication Theory. Currently he is adjunct professor of Visual Art and Technology in University of Macerata. He is member of the media editorial staff of Noema / Mediaversi / Riviste di Scienze sociali. He works as a layout freelancer for the University press of macerata (eum). He has published in many academic journals (Flusser Studies, Heteroglossia), his first book is *Metrobodily passages. For an aesthetics of transition*, eum, Macerata 2014. He won many international poem prize. He participated also in many national exhibitions with multimedia installations and performances (Corpus 2012, Chaos 2013, Bookquake 2017). In 2014 Giorgio was a founding partner and vicepresident of Crash (Creative Art Shocking).

**Title**      **The third culture: a synergic relationship between art\*science. For metrobodily transition: from the Near Future to a New History**

**Abstract**      The arts, science and technology are experiencing a period of profound change. Normally we use the terms digital everywhere, because it is embodied in our culture. We could talk about third culture as John Brockmann writes. The third culture, according to him, consists of those scientists and other thinkers in the empirical world who, through their work and expository writing, are taking the place of the traditional intellectual in rendering visible the deeper meanings of our lives, redefining who and what we are. We are talking about whole new forms of subjectivity. We are seriously talking about mutated worlds that have never existed on this planet before. And it is not just idea. It is new flesh. Human beings are always already immersed in the world, in producing what it means to be human in relationships with each other and with objects. In the 21st century, some of the most dynamic works of art are being produced not in the studio but in the laboratory, where artists probe cultural, philosophical and social questions connected with cutting-edge scientific and technological research. Human life and culture will expand also beyond biological limits, through the Third Life, the life that humans are giving to the entities built by their culture. There are many emerging or growing fields: autonomous agents and artificial life forms, autonomous objects, robotics and biorobotics, nano entities, hybrids (organic/ inorganic), modified or expanded organisms, synthetic life. This growth and multiplicity will take place in a realm where connecting, collecting, communicating and sharing information can be easily and automatically achieved thanks to the computer technologies and the Net. The artists during the third millennium have begun to tackle the concepts, the tools, and the contexts of scientific and technological research: the results of their works are provocative and intriguing. These artists, who have been working combining both scientific and technological approach, outlined new perspectives in the art fields, in order to explain the complexity of the world following a trans-disciplinary method. Metrobodily is a brain expression for describing this spherical mutation, where the ubiquitous bodies are interconnected for a living, hybrid and hyperconnected planet. Bodies everywhere, absent and present at the same time. We have many bodies, physical, virtual, extended, multisensorial. What can a body do? What is New? What is Innovation? What is the relationship between art and science?

### Enrica Colabella

Professor of Generative Design  
Politecnico di Milano University  
<http://www.generativedesign.com>  
<http://www.generativeart.com>

Architect and Professor of Generative Design at Politecnico di Milano University. With Celestino Soddu she is a co-founder of the Generative Design Lab and of Generative Art, annual International conference since 1998. From 1994 also in teaching, she worked on connections between multidisciplinary sectors, especially between Poetry and Architecture/Design, using digital tools in generative processes for gaining the complexity of the new civilization. Among numerous video for galleries, museums, universities, she takes performances crossing the poetry borders toward music and space. In her Generative Design teaching starting from 1994, she defined the attribution, proper of the AI processes, as a tool able to work as a poetic logic for producing 3D models of Architecture and Design in student's exercises. She has presented her experimental works with papers and performances in many conferences on the digital process of art and science: Boulder; HK; Tel Aviv; Delft; Montreal, Oxford, Singapore, Campinas, Wien, Beijing, Shanghai, Porto, New Delhi, Nagoya, Eindhoven; etc. In 2012 she has co-founded with Celestino Soddu the Generative Art Science And Technology Hard Journal, GASATHJ.

**Title**      **Generative Art International Conference, exhibition and live-performance**

**Abstract**    "...Ars sine scientia nihil est", Jean Mignot, 1392

We are at the 20th Generative Art International conferences and I like to thank all the participants of the last editions, participants from many different countries of all continents because they have succeeded in supporting GA as the worldwide reference conference in the sector of the generative approach. This with their interesting contributions that were not only academic papers but works in progress able to define the real state of the art of the Generative Thinking. Not only, the discussions, the exchanges of experience and the working together for reaching advanced possibilities was the unique feeling of these meetings. As the other years, the conference will run for three days with only a plenary session. The reason is that this unique session gives to all participants the possibility of best knowing one each other and to discuss all together.

This year we will meet in Ravenna, hosted by MAR, the Museum of Art and by the Classense Library. The conference will run the 13th, 14th and 15th of December 2017.

In the field of Art-Science, Generative Art has a peculiar task. Generative Art is the idea realized as genetic code of artificial events, as the construction of dynamic complex systems able to generate endless variations. Each Generative Project is a concept-software that works producing unique and non-repeatable events, like music, images or 3D Objects, as possible and manifold expressions of the generating idea strongly recognizable as a vision belonging to an artist/designer/musician/architect/mathematician. This generative Idea / human-creative-act make an unpredictable, amazing and endless expansion of human creativity. We can create species of events with a recognizable identity, following our vision. Computers are simply the tools for its storage in memory and execution.

This approach opened a new era in Art, Design, and Composition: the challenge of a new naturalness of the artificial event as a mirror of Nature. Variations, like in Bach music, are the best strong communication of the Idea. Once more man emulates Nature, as in the act of making Art.

This approach suddenly opened the possibility to rediscover possible fields of human creativity that would be unthinkable without computer tools. If these tools, at the beginning of the computer era, seemed to extinguish the human creativity, today, with the generative approach, directly operates on codes of Harmony and on codes of Identity. They become tools that open new fields and enhance our understanding of creativity as an indissoluble synthesis between art and science.

After two hundred years of the old industrial era of necessarily cloned objects, music, architectures, communications the one-of-a-kind object becomes an essential answer to emergent contemporary aesthetical needs.

### Elena Cogni

University of Lincoln

<http://www.elenacogni.com>

Elena Cogni has a PhD in Fine Art (with psychology and philosophy) from University of the Arts, London Central Saint Martins College, 2004. Her academic positions as artist include a Post-Doctorate Fellowship at CSM (Arts and Humanities Research Council UK 2004/06), a Research Fellowship at York Saint John's University (Arts Council of England, 2007/09). Lecturer in Fine Art (socially engaged art) at the University of Lincoln, where is part of Eleanor Glanville Centre Research, and is associate of the Creativities in Intercultural Art Network (Cambridge University). Process is central to her 'research as art practice' approach, and she often collaborates with academics and professionals from other disciplines with open formats as part of her process. Her work include dialogic undertakings resulting in drawings, sculptures, video and text. She has performed and exhibited in the US, Europe and the UK. She is the founder and director of Rockfluid, umbrella interdisciplinary project outcome of a residency at the University of Cambridge, Faculty of Experimental Psychology, awarded with two Grant of the Arts, Arts Council of England, and Escalator Visual Art Retreat at Wysing Arts Centre, Escalator live art, Colchester Arts Centre. This includes many international site specific interventions, investigation the relationship memory, perception and place with a dialogic (at times prelinguistic) approach.

#### Title **Locating Oneself**

Abstract "Place is 'any environmental locus in and through which individual or group actions, intentions, and meanings are drawn together spatially' (Casey, 2009)

My work has focused for sometime on various ways in which we operate in space and map it individually into place[1], but also socially[2], and in this process we memorise it in a technology-obsessed era[3], recollect it[4], and reactivate it[5], familiarise with, and revisit it[6]. Informed by interdisciplinary collaborations, the work manifests in dialogues, diagrams, performative sculptures, and video. More recently ideas of unrest and transition in my work have become socially tragically current and experienced by so many. I have also looked into processes of place attachment and displacement, and how these might impact on, or affect identity formation in relation to places through our daily engagement with them.

The above is based on the multidisciplinary approach of my current project Rockfluid, where site specific art practice is underpinned by elements of cognitive psychology and philosophy, I shall discuss in terms of the in (ter)disciplined, as possible research methodology where art breaks through disciplines (Ranciere).

[1] Views From Above, 2012, Video Installation, Newton Telescope, Institute of Astronomy, University of Cambridge

[2] Seeds of Attachment, ongoing, Grants for the Arts, Arts Council England, Lowenfeld Library, Centre for Family Research, University of Cambridge; Art Language Location Festival of Contemporary and Performance Art, Cambridge School of Art Anglia Ruskin University; New Hall Collection, Edward Murray College Cambridge University

[3] Spa(e)cious, 2012-13, Video live installation, Wysing Art Centre, Cambridge, Kingston University, London, MK Gallery, Milton Keynes (UK) Stanford University, (USA), Intitute for Artistic Research, Berlin, (Germany), Bergamo Scienza, (Italy). This was based on philosopher William James' concept of specious present, as read by Velera (Carmagnola).

[4] Mnemonic Present, Un-Folding 2004-06, Video Live Installation, Brown University (USA), GAMEc Bergamo, Villa delle Rose GAM Bologna, (Italy), Whitechapel art Gallery, London, (UK), based on issues on meta-mind and self-recognition using video delays, in collaboration with Greg Digirolamo and Thomas Suddendorf.

[5] Re-moved 2008 One to one video live installation, Centre for Contemporary Art, Glasgow, Glasgowinternational Biennale 2008, Director Francis McKee. A modernity which forgets, Impington Gropius, 2015, festival of Ideas Cambridge .

[6] Lived Dialectics, Movement and Rest, 2016 MuseumsQuartier Vienna, (Austria). Structures of support Nunnery Gallery, London

### **Nina Czegledy**

Ontario College for Art and Design  
University  
Leonardo (MIT Press)  
UNESCO  
<http://www.ninaczegledy.net>

Nina Czegledy, artist, curator, educator, works internationally on collaborative art & science & technology projects. She has exhibited and published widely, won awards for her artwork and has initiated, researched, lead and participated in forums and symposia worldwide. Seeing the Invisible, Czegledy's most current documentary art project was shown in May 2017 in the framework of the Cabinet exhibition at University of Toronto, SPLICE re-examining Nature, Czegledy's latest curatorial project is on show now at the Oulu Museum of Art in Finland. On behalf of the Leonardo LASER network, Nina collaborates with Gisele Trudel in Montreal and Roberta Buiani in Toronto on Canadian LASER events. She is an Adjunct Professor, Ontario College of Art and Design University, Toronto, Senior Fellow, KMDI, University of Toronto, Research Fellow, Semaphore Research Cluster, University of Toronto, Research Collaborator Hexagram International Network for Research Creation, Montreal Senior Fellow, Intermedia, Hungarian University of Fine Arts, Budapest, Member of the Governing Board Leonardo/ISAST, Chair Leonardo 50th Committee, Board Member AICA International Association of Art Critics Canada, Chair, Intercreate org New Zealand

**Title**      **First Fifty – Next Fifty**

**Abstract** The presentation pays first homage to the concepts and practice of Frank J. Malina one of the pioneers of contemporary inter-disciplinary thinking in the middle of the last century. Malina was a genuine innovator working ahead of his time on demolishing the previously sharp division between art and science, producing a fundamental shift and making the results accessible to common perception. The heritage of Malina and other path-breakers shaped our cross-disciplinary present, although the varying approaches to science and art remain a lively debate to this day. Nonetheless, it remains vital to be mindful of the fact that art is an important catalyst in multi disciplinary collaborations. “The difference in approaches to art and science may differ, – but the underlying desires of both artist and scientist remain within the same sphere. Both are driven by a need to explore, challenge, question and create” (Eibhlín Kissack). What is really new today? How is the future of art and science collaborations viewed these days globally and specifically around the Mediterranean Rim? In the second part of this presentation I intend to explore these notions.

### **Serge Dentin**

Director

Association Polly Maggoo, Marseille

<https://pollymaggoo.org>

After scientific and musical studies in Paris then Marseille (PhD in theoretical physics, Aix-Marseille University), also holds a Master 2 in philosophy-epistemology (Aix-Marseille University), he turned later to the cinema, both as a programmer and a filmmaker. He is currently director of the Polly Maggoo association (Marseille), artistic director of the Rencontres Internationales Sciences & Cinemas (RISC), and also a piano teacher.

**Title** **Dialogue between filmmakers, moving image artists and scientists: the experience of the RISC festival, Marseille**

**Abstract** Polly Maggoo, an association founded in 1993 in Marseille (France), has the ambition to bring together various genres of cinema and a large audience. We have always been endeavouring to provide viewing opportunities for contemporary films and videos which have some difficulty finding a place in the traditional circuits. From 2002, we have been developing thematic sessions about science. The diversity of genres (documentary, video art, experimental, animation, fiction) and supports creates numerous opportunities to foster dialogue between cinema and the world of science considered as a field of creation. Throughout the year, our Cine´ sciences sessions bring science films to schools, in the presence of researchers and film directors. Since 2006, the RISC festival (Rencontres Internationales Sciences & Cinemas) extends the presentation of various aspects of science (from fundamental sciences to human and social sciences). It is a unique showcase for the ever renewed relations between these multidisciplinary scientific domains and cinema as art. We attach great importance to the encounters between directors and scientists/researchers sharing thoughts and experience with the audience after each projection.

For several years we have accompanied the making of films by high school students and young people, in connection with filmmakers and scientists. In 2016 we initiated during RISC festival a « PhD students and Postdoctoral fellow film competition » in region Provence-Alpes-Côte d'Azur, and we also train PhD students in the cinematographic writing. Based on these experiences, we are currently working on a European project of cinema & science residences.

During this talk, I will also give some historical points of reference, and I will conclude by presenting a selection of contemporary short films (including heritage films) and excerpts of feature films representative of how we conceive this dialogue between filmmakers, moving image artists and scientists, which is not restricted to the category of « science film ».

### **Piero Dominici**

Università di Perugia

Piero Dominici is a professor and professional tutor, teaches Public Communication and National Interest & Intelligence Operations at the University of Perugia, and is Visiting professor at Complutense University of Madrid. He has a Ph.D. in "Social Theory and Research" at the University of Rome "La Sapienza" and he won a Post-Doc Fellowships at the Department of Mechanical and Industrial Engineering of the University of Roma Tre. Member of the MIUR Association of Revisers, (Italian Ministry of Higher Education and Research), and of World Complexity Science Academy, he is a standing member of several national and international scientific committees, like the Scientific Committee for orientation of the Italian Association of Public and Institutional Communication (national network of communication professionals and experts), the International Scientific Board Of Communication and Media Research Center, and the Editorial Board of the International Journal of Political Science & Diplomacy. Author of numerous essays, scientific articles and books like *La comunicazione nella società ipercomplessa. Istanze per l'agire comunicativo* [Communication in the Hypercomplex Society. Solicitations for Communicative Action (2005)]; *La società dell'irresponsabilità* [The Society of Irresponsibility] (2010); *La comunicazione nella società ipercomplessa. Condividere la conoscenza per governare il mutamento* [Communication in the Hypercomplex Society. Sharing Knowledge to Cope with Change] (2011). *Dentro la Società interconnessa. Prospettive etiche per un nuovo ecosistema della comunicazione* [Inside the interconnected society. Ethical Prospect for a New Ecosystem of Communication] (2014); *Democracy and the Public Sphere in the Knowledge Society: the strategic Function of Communication.*

**Title**      **Education to complexity is an urgent topic**

**Abstract** Hurlled into hypercomplexity, we are facing a complex process of anthropological transformation of a shift in paradigms, models and codes, other than an irreversible synthesis of new value systems and criteria for judgment. Our extraordinary scientific discoveries and technological innovations not only open dizzily onto as yet unimaginable horizons and scenarios, but show, ever more clearly, the urgency of radically rethinking education teaching and training, underlining the substantial inadequacy of our schools and universities in dealing with this hypercomplexity, in dealing with the indeterminateness and ambivalence of the ongoing metamorphosis, in dealing with the radical interdependence and interconnection of all processes and dynamics; in dealing with the global extension of all political, social and cultural processes. And art experience is an important piece of this new idea of education and culture.

### Barbara Dondi

Director

Associazione culturale La Comunicazione Diffusa, Bologna

<https://www.factorybo.it>

La Comunicazione Diffusa is a cultural association directed by Michele Orsi Bandini and Barbara Dondi, based in the centre of Bologna, that has been operating in the venue of FactoryBo since 24 October 2015. The main activities are the theatre research linked to communication technology, the interaction between art, culture, technology and every type of unusual activity. The association is also a theatre production centre. We have developed an experimental program about the link between theatre and new forms of communication, that could lead to a strict interaction between these different types of languages. It's not about the performance, it's about the theatre (so it's about being close to the script, about the acting, about the direction, etc.). This project is going on for the next 3 years, and it has already made its debut with an experimental and "interconnectual" play that has been a real success and has stimulated a lot of debates.

**Title**      **BIT: interconnective heresy**

**Abstract**    Délire à deux is an "interconnectual" theatre experimentation, starting from a simple (and almost trivial) issue: some experts say that the original idea of theatre should not exist anymore. Nowadays it's only possible to perform reality in an artistic way, but there's no need of the script, of the dramaturgy and of the actors. Is that true?

This experimentation takes a different direction: it preserves the poetry, rhythm and the aim of the play, trying to test it by giving the audience the chance to comment live, using whatsapp, twitter, etc. Each time the actors and the direction decide whether they perform the messages or not, basing on their relevance to the play and on how much provocative they are.

During the play, different levels of communication are present: Actors><Actors; Actors><Audience; Audience>>Actors; Audience>>Immediate communication; Actors><Directions... In that way a mix of languages is created. But it always remains in the dramaturgy environment.

Can theatre become open to contemporary communication and to its new tools? And what qualitative results can it bring? This experimentation is underway at Factory Bo, Bologna. The experience records and data are going to be presented during art\*science/Leonardo 50, as a contribution to the relationship between art and science in the theatre realm.

This experience will be shared through every social network: the Website, YouTube, FB, Instagram, Twitter and we would like to create a network with other organizations that share with us the idea of a renovating theatre.

### **Michele Emmer**

Università di Roma "La Sapienza"

Michele Emmer was full professor of mathematics at the University of Rome "La Sapienza" till 2015. Member of IVSLA, Istituto Veneto Scienze Lettere Arti, Venice. His area of interest: PDE and minimal surfaces, relationships between mathematics and arts, architecture, cinema, culture. Member since 1992 of the board of the Journal "Leonardo: art, science and technology", MIT Press. Filmmaker, author of the series "Art and Math" distributed in many countries, homaged in several Film Festivals: Bellaria, Bergamo, Rome Animation, Torino Museo del cinema, La Villette, Paris. He organizes the annual conference on "Mathematics and Culture" in Venice; editor of the series "Mathematics and Culture" and "Imagine Math", Springer verlag; the series "The Visual Mind", MIT press; video series "Video math", Springer verlag. Latest books: "Bolle di sapone tra arte e matematica", 2009, Viareggio Award best Italian essay 2010; "Numeri immaginari: cinema e matematica", Bollati Boringhieri, 2011; "Il mio Harry's bar", Archinto ed., 2012; "Imagine Math 2", Springer 2013; "Flatlandia di E. Abbott, with the DVD, music by Ennio Morricone, 2009. Writer for L'Unità, La Stampa, Diario, Rinascita, Telema, Prometeo, Corriere della Sera. Co-founder of the e-journal Galileo and co-founder with Eco, Balestrini, Calabrese, Fabbri of the journal Alfabet2.

**Title**      **Art and Math: Soap Bubbles. A Visual Story**

**Abstract** In the relationships between art and mathematics a unique example is the one of Soap Bubbles. In art the history of soap bubbles started in the XVth Century, while mathematicians started studying them in the XIXth Century. Very famous artists like Chardin, Rembrandt, Manet painted soap bubbles, and very important mathematicians studied their forms till the use of computer graphics animation in the XXth Century. This is a story that has fascinated not only painters but many architects like Zaha Hadid and the group PTW which realized the Beijing Swimming pool for the 2008 Olympics. The presentation will show soap bubbles from the perspective of the linkage between art and mathematics, as well as further applications in architecture. It provides context and meaning to the real visual neverending story between math, art, architecture and music, films, literature, exhibitions.

### **Gabriele Falciasacca**

President

Fondazione Marconi, Bologna

<http://www.fgm.it>

Gabriele Falciasacca has been a professor of electromagnetism at the University of Bologna from 1980 to 2015. She has been working on radio (radio and wireless systems in general), detection and radiolocalization techniques, producing more than 200 scientific publications. He has written books on the historical and popular aspects of telecommunications. Since 1997 he has been appointed as President of the Guglielmo Marconi Foundation where he founded the Marconi Museum.

Title

Abstract

### **Antonella Guidazzoli**

Director Vis.I.T. Lab  
CINECA, Bologna  
<http://visitlab.cineca.it>

Antonella Guidazzoli graduated at the University of Bologna (Italy), in Electronic Engineering in 1988 and in History, in both cases “cum laude”. In 1988 she joined CINECA, one of the most important computer centres at international level, where she became responsible for the activity in advanced vision methodologies (scientific visualization, real time graphics, 3D interactive). These activities have progressively found important applications of scientific, cultural, economic and industrial interest, such as, in rendering of complex scientific results, scene reconstruction for forensic applications, cultural heritage fruition, virtual archaeology, multimedia teaching, and entertainment. She has been responsible for several R&D projects at national and international level and has become one of the main Italian experts in the field. She has published several papers on the most important journals at international level and has been invited to present her work in major conferences, such as, in particular, Siggraph 1999, 2000, 2004, 2006 and 2007. She is a Member of the Steering Board of the Ph.D. Program in “History and Computer Science” and has played a leading role in the organization of major events dedicated to scientific dissemination and she is responsible for CINECA Summer Schools on “Computer Graphics and ICT for Cultural Heritage”. Currently, her main research interests are: a) interactive graphic techniques for applications in the field of virtual cultural heritage, based on open source and available on a variety of output terminals (virtual theatre, PDAs, cell phones...); b) immersive graphics and virtual sets (for TV and cinema).

**Title**      **Virtual Heritage Applications from Research Tools to Emotional and Participatory Virtual Spaces**

**Abstract**      An overview among the most significant projects carried on by Vis.I.T. Lab in recent years with lessons learnt and a look into ongoing projects based on a wider interactions with different audiences. Vis.I.T. Lab is the Cineca department for data VISualization through Information Technology. Vis.I.T. Lab works on Augmented and Virtual Reality solutions and big data visualization.

### Salvatore Iaconesi

Art is Open Source

ISIA Fienze

<http://www.artisopensource.net>

Salvatore Iaconesi is an interaction designer, robotics engineer, artist, hacker. TED Fellow 2012, Eisenhower Fellow since 2013 and Yale World Fellow 2014. He teaches Near Future Design and Multi Platform Digital Design at ISIA Design Florence and, in the past, at “La Sapienza” University of Rome, at the Rome University of Fine Arts and at the IED Design institute. Salvatore has founded AOS in 2004, is President at HER (previously HE), and co-founder at Nefula. His focus is at the intersection of Arts, Design, Technologies, Sciences and Business. He creates projects that are at the same time artworks, scientific research and business models, addressing fundamental issues in culture, inclusion, human rights, economy and access to knowledge and education.

Title **Kernos**

Abstract Kernos, the human and relational geographies of arts and sciences in the Mediterranean.

Kernos is a map of the subjects, locations, themes and relations of the arts and sciences in the Mediterranean rim.

It is created by practitioners in the arts and sciences, to start a participative reflection around the essence, meaning and values, patterns and differences in the arts and sciences across the Mediterranean, and to understand the possible, positive and constructive implications which derive from being able to reflect, to broaden the field of vision.

Who are we? Where are we? When are we? What do we care about, investigate, research, act upon, work with? And what good, positive, constructive impact may come by creating a map of all this, becoming able to rise up and reflect onto ourselves and with and about ourselves, looking for above, to look for patterns, meanings, threads, partnerships, capacities, interests, skills, and more.

Moreover, in the times of systems and platforms like Facebook, Google and other, more dedicated to academics, such as Academia, and Researchgate, start offering platforms in which subjects can express and describe themselves, establish and perform relations, at the expense of giving up their data and the ones which can be inferred by them, Kernos aims to become a way in which to gather and represent data, and to make it fully accessible and usable.

What researches, understandings, artworks, services, can be created by using this data? How can we use it to create partnerships, collaborations and participatory processes? What can we understand from them, seeing them, exploring them on a map, timeline, tag cloud or other visualization?

These are many questions, and there will be more. We intend to start opening up the field for their progressive satisfaction, and for creating the conditions to discover even more questions and establishing collaborations.

### **Marcella Giulia Lorenzi**

Università della Calabria

Marcella Giulia Lorenzi is an Italo-Canadian Multimedia artist and researcher. She studied Multimedia – Arts, Music and Performances, Mathematics, and she also obtained a Ph.D in “Psychology of Programming and Artificial Intelligence”, with a specialization in Scientific Communication using Digital Art. Starting from traditional media and arts, Virtual Heritage, Complexity, Artificial Life, her interests cover the broad sector of interactions between Art and Science, a field in which she has realized exhibits, installations, performances, interactive videos and other multimedia in Europe, Canada, US.

She was part of the Center for Communication, then Evolutionary Systems Group and is co-founder of the Laboratory for Scientific Communication at University of Calabria, an interdisciplinary Lab using media, technologies and artistic languages for the popularization of Science. Researcher and Lecturer in Media and Communication of science through the arts, Art and Science at University of Calabria and Udine, as well as INFN, she also delivered seminars on art and science worldwide. She chairs the Art and Mathematics “Mauro Francaviglia” section within the board of the Aplimat conference, held each year at the Polytechnic University of Bratislava, Slovakia, and was part of the Scientific committee of Bridges Conference on mathematical connections in art, music, architecture, education, and culture.

As a researcher or coordinator, she has participated in many national and international research projects (funded by Italian and European programs) on the subjects of Art and Science, Cultural Heritage, Science popularization.

**Title**      **SCIENAR: science and art scenarios**

**Abstract**    Within the broad framework of the interconnections between art and science, we will discuss the past and present Scenarios - research projects and artistic productions - developed mainly at University of Calabria.

### **Roger Malina**

Executive Director  
University of Texas  
Leonardo (MIT Press)  
<http://malina.diatrope.com>  
<https://artscilab.atec.io/>

Roger Malina is an art-science researcher, astronomer and editor. Distinguished Professor of Arts and Technology and Professor of Physics at the University of Texas, Dallas. He directs the ArtScilab which develops art-science collaborations that lead both to scientific discoveries and intense contemporary art works. The Lab runs initiatives in Experimental Publishing with MIT press which seek to develop new forms of scholarly publishing and public engagement through the arteca platform. Former Directeur de Recherche of the CNRS in France and Director of the Observatoire Astronomique de Marseille Provence at Aix-Marseille University. His scientific specialty is in space instrumentation and big data problems; he was the Principal Investigator for the NASA Extreme Ultraviolet Explorer Satellite at the University of California, Berkeley. Founded the Leonardo organizations whose mission is to promote and make document work that explores the interaction of the arts and sciences and the arts and new technologies (STEM to STEAM); he is the Executive Editor of the Leonardo publications at MIT Press. He helped set up the Mediterranean Institute for Advanced Studies. He is an elected member of the International Academy of Astronautics.  
<http://www.utdallas.edu/atec/malina/>  
<http://www.leonardo.info>  
<http://www.olats.org>  
<http://www.arteca.mit>

**Title**      **Re-Imagining Leonardo, a 50 year perspective**

**Abstract** Fifty years ago a group of artists, scientists, engineers and scholars created the Leonardo Journal. They advocated the use of science and technology in the arts to create artforms that responded to the contemporary situation; and collaboration between art science and technology to re-imagine the science and engineering of the future. They also advocated also that artists could write about their work and carry out research. Today we see a large international creative community carrying out this work, with involvement of the universities and the civil society. In this talk I will talk about some of the current emerging areas of practice, and new methodologies including deep involvement of the design professionals; these range from transdisciplinary practices with multiple goals, appropriation of biomedical technologies to rethink health and well being practices, to the use of nanosciences and smart materials, and issues of biodiversity and climate change. Using the delphi method , the leonardo community of practice is shaping the goals and methods of Leonardo for the coming years.

### **Francesco Monico**

Università di Udine

Ars Academy

T-Node, Planetary Collegium

Founder and Director of the School of Media Design and Multimedia Art, NABA Milan, he founded in 2001 and left in 2013. Professor of Mass Media and Multimedia Arts, today is Adjunct Professor in Social Digital Innovation at the University of Udine and Adjunct professor of Sociology of Media at ISIA Pordenone. Director of the Phd Planetary Collegium T-Node. Senior Partner of Ars Academy Research, a platform for advanced research on education, and research on art, science and technology and cultural studies.

**Title**      **The good, the bad and the ugly: the future, the past and the hope**

**Abstract**    As the fabulous animal was trapped - A provocative meditation on the future as apparatus of power. The future happens after the present, is inevitable due to the unavoidability of the future as the portion of the projected time line that is anticipated to occur. The future and the past are unreal but is not real to forecast the future. This narcissistic projection is at the core of the fabulous animal.

### Michele Orsi Bandini

Director

Associazione culturale La Comunicazione Diffusa, Bologna

<https://www.factorybo.it>

La Comunicazione Diffusa is a cultural association directed by Michele Orsi Bandini and Barbara Dondi, based in the centre of Bologna, that has been operating in the venue of FactoryBo since 24 October 2015. The main activities are the theatre research linked to communication technology, the interaction between art, culture, technology and every type of unusual activity. The association is also a theatre production centre. We have developed an experimental program about the link between theatre and new forms of communication, that could lead to a strict interaction between these different types of languages. It's not about the performance, it's about the theatre (so it's about being close to the script, about the acting, about the direction, etc.). This project is going on for the next 3 years, and it has already made its debut with an experimental and "interconnectual" play that has been a real success and has stimulated a lot of debates.

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This experience will be shared through every social network: the Website, YouTube, FB, Instagram, Twitter and we would like to create a network with other organizations that share with us the idea of a renovating theatre.

### **Oriana Persico**

Art is Open Source

<http://www.artisopensource.net>

Oriana Persico holds a degree in Communication Sciences, is an expert in participatory policies and digital inclusion. She is an artist and writer. She has worked together with national governments and the European Union to the creation of best practices, standards and researches in the areas of digital rights, social and technological innovation, Digital Business Ecosystems (DBE), practices for participation and knowledge sharing. Oriana writes critical, scientific, philosophical and poetical texts that connects to technological innovation, and on its cultural, sociological, economic and political impacts. She is an expert on the formal analysis of cultural and social trends, with specific focus on social networks. She creates breakthrough communication campaigns, performances, research methodologies and strategies.

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These are many questions, and there will be more. We intend to start opening up the field for their progressive satisfaction, and for creating the conditions to discover even more questions and establishing collaborations.

### **Stella Saladino**

<https://www.linkedin.com/in/stella-saladino-coach-bologna>

Stella Saladino graduated at the University of Bologna, DAMS – Music, and worked in the communication and culture realm as director and performer. She has produced performances contaminated by many languages: visual art, vocal experimentation, multimedia and music. Over the years she has been working as digital strategist in communication and as trainer for companies and people, to help them enhance their brand. She runs courses, workshops and conferences on Personal Branding, Web Reputation, and relations between culture and technology, integrating studies in Neuroscience, philosophy and theater. She is the digital director of the theatrical experiment Bit (o del III Incomodo), based on Delirio a due by Eugène Ionesco.

**Title**      **Theater and Digital Mobile: a possible connection?**

**Abstract**      The theatrical experiment "Bit (o del III Incomodo)" based on "Delirio a due" by E. Ionesco, arise from a challenge: it is possible, through the new mobile devices, the new technology to involve the audience in a different and truly interactive way? The data that I gathered, as digital director, during the numerous rehearsal of the show, the results, the deductions, the analysis and the reflections, are just the beginning of a fascinating social-anthropological-theatrical journey.

### **Mario Savini**

Università di Teramo

<http://uniteramo.academia.edu/MarioSavini>

<http://www.postinterface.com>

Mario Savini got his PhD at the University of Teramo (Italy). He is a journalist and art critic. He is editor of Postinterface ([www.postinterface.com](http://www.postinterface.com)), a web magazine on science and digital cultures. He is interested in the social aspects of New Media and in the relations between contemporary visual culture and biotechnologies. He has taught “Net Art” at the Academy of Fine Arts in Rome and Macerata and “Digital Applications for Art” at the Academy of Fine Arts in Catania. He is the author of the book “Postinterface” (Pisa University Press). His articles have been published in Wired (Italian version) and Nòva-Il Sole 24 Ore. Currently, he is collaborating with the University of Teramo.

**Title**      **Transgenic Art. The new nature as aestheticization of life**

**Abstract** This paper examines some important aspects of transgenic art. Its field of action, albeit small, plays an important role in the contemporary cultural landscape. Together with other performative practices it forces us to rethink the concept of art. In 1998, Eduardo Kac had presented a project called GFP K-9 on “Leonardo Electronic Almanac”, on the idea of creating a fluorescent dog. It was through this project that the concept of “transgenic art” was introduced and the expression coined. Within posthuman condition, it looks like creativity no longer belongs to the world of art. The traditional concept of the medium has lost its value in the face of new processes of cultural hybridisation. The artwork has thus managed to go beyond its graphic representation and immerse itself in life experience, so that the boundary between art and non-art is becoming almost blurred, creating unintentional and unexpected perspectives. This proposal will try to answer the following questions: What type of relationship is being developed among art, science and life? Are there still differences? What does creativity stand for?

### Bill Seaman

Professor, Department of Art, Art History & Visual Studies  
Co-head Emergence Lab, Media Arts + Sciences, Duke University  
Member of Duke Institute for Brain Sciences (DIBS)  
Duke University, Durham  
<http://billseaman.com>

Recombinant Poetics / Recombinant Informatics. Seaman's work often employs an expanded media-oriented poetics through various technological means— Recombinant Poetics. Such works often explore the combination and recombination of media elements and processes in interactive and generative works of art. Seaman enfolds image/music/text relations in these works, often creating all of the media elements and articulating the operative media-processes involved. He is self-taught as a musician/composer. He has been interested in meaning production and has explored ideas around computational meta-meaning systems— systems that enable a user to become mindfully aware of how meaning is arising and changing through their interaction. He is deeply interested in new forms of computation, learning systems, the concept of creating an electrochemical computer, as well as the concept of Computational Creativity – both using the computer as a creative tool, as well as articulating the future of creative potentials as explored via computational devices – the creativity of creativity. More recently he has been exploring notions surrounding Recombinant Informatics – a multi-perspective approach to inventive knowledge production.

**Title**      **The Insight Engine as Transdisciplinary Tool and Association Mechanism for Art ↔ Science Research**

**Abstract**    The Insight Engine seeks to draw on my long history as a media researcher designing new forms of interface and qualities of interactivity, and to expand this via a strong transdisciplinary collaboration that bridges Neuroscience, Computer Science, the Arts and Humanities at Duke as well as through international collaboration. Such a project reflects clearly the interdisciplinary goals of both DIBS (The Duke Institute for Brain Sciences who funded the work initially as an artwork) and the research community at large. The work explores a multi-perspective approach to knowledge navigation and subsequent knowledge production. This research seeks to work toward the digital authorship of a tool to empower insight production, distributed interdisciplinary/transdisciplinary team-based research and to potentially enable bisociational processes as discussed by Arthur Koestler in *The Act of Creation*. Seaman is now developing the notion of polysociation. If we reverse engineer differing research communities across multiple disciplines we can assume that many researchers undertake similar practices— reading papers, viewing diagrams, exploring data sets, creating and viewing visualizations, annotating research materials, watching videos, and partaking in discussions among other activities. Interdisciplinary research also means crossing “linguistic” domains framing that research. Here the generation of shared language (developing bridging languages) is essential. Yet, could we make a new system that heightens the potential for insight and creative juxtaposition of essential ideas that cut across multiple research communities/domains?  
The notion here is to explore Neuroscience/AI/Learning Systems/Neosentience (see Seaman and Rossler’s Book - *Neosentience | The Benevolence Engine*) through the associative “lens” of focused computational interactivity, functioning in the service of providing new insights and associations across interdisciplinary/transdisciplinary research fields, as well as exploring different concepts and foci from within individual research domains. The web based interface enables a user-centric experience, “driving” the generation of a visual set of associative experiences —calling up different words, phrases, titles, images, videos, urls, and models as a network of potential associations that are brought into visual proximity. Such a work functions both on a local level in a visual installation, as well as on a laptop driven across the internet, forming a vast community of contributing researchers.

Thus, though a network of “pre-seeded” choices one could drive the system to focus on Neuroscience-only related topics of association. Alternately one can juxtapose texts and images from the arts and humanities — poetic texts, critical/social texts, texts related to ethics, or historical texts from multiple fields— this depends on the choices of the interactant and the database the work is drawing from. I describe this as a multi-perspective approach to knowledge production. The new version of the work, initially exploring a curated set of authors and documents is expanding to include Bots and AI, openly searching the internet for relevant connections to ongoing research.

## art\*science Conference presenters

### **Simonetta Simoni**

Festival della Complessità, Roma

Sociologist, PHD at University of Sorbonne (Paris), visiting researcher at the London School of Economics and European University Institute in Fiesole (Florence), until 2010 Professor in Italian Universities of Urbino and Venice (Ca' Foscari). With Patrizia Faccioli (University of Bologna and Forlì) she explored since the 90s the field and methodology of Visual Sociology. Publisher as Format Edizioni, she's particularly interested in the experimentation of complexity communication and the potential of art to develop complexity mindset and education through different fields of science and humanities.

**Title**      **Art and complexity: the sensible knowledge of network connections**

**Abstract** Complexity festival 2017 deals with a this question: What is the world we are living in? Exploring the relationship between art and complexity means to figure out the complexity mindset and behaviours that deepen our perception and understanding. I will give an example of education through art experience dealing with the “sensible knowledge” of network and networking.

### Celestino Soddu

Founder and director  
Generative Art Conference  
Politecnico di Milano  
<http://www.generativeart.com>  
<http://www.celestinoddu.com>

Celestino Soddu, Master Degree at Università di Roma "La Sapienza" in 1970, he has taught Architectural Representation, Composition and Technology in Italian universities since 1971. Since 1988 Professor of Architectural Generative Design at the Politecnico di Milano. As precursor of generative approach and advanced use of perspective in architectural design, in 1986 wrote "L'immagine non euclidea", concerning new total 360-degree curved perspective and in 1987 he designed Argenia, the first generative software for architecture and industrial design presenting it in the book "Citta' Aleatorie", 1989. In 1997 he founded and is presently director of the Generative Design Lab at the Department of Architecture and Urban Studies of the Politecnico di Milano University. Beginning in 1998 he has organized and directed the annual International Generative Art Conference. Starting from 2012 he is co-director of GASATHJ, the Generative Art Science and Technology hard Journal. He has presented his generative projects and artworks in many personal exhibitions worldwide, in Hong Kong, Los Angeles, Washington DC, Beijing and Milan. He is the author of numerous books in Italian and English. Video interviews and programs for international televisions were created about his architectural research activity in Italy, China, US and Spain.

**Title**      **Generative Art International Conference, exhibition and live-performance**

**Abstract**    "...Ars sine scientia nihil est", Jean Mignot, 1392

We are at the 20th Generative Art International conferences and I like to thank all the participants of the last editions, participants from many different countries of all continents because they have succeeded in supporting GA as the worldwide reference conference in the sector of the generative approach. This with their interesting contributions that were not only academic papers but works in progress able to define the real state of the art of the Generative Thinking. Not only, the discussions, the exchanges of experience and the working together for reaching advanced possibilities was the unique feeling of these meetings. As the other years, the conference will run for three days with only a plenary session. The reason is that this unique session gives to all participants the possibility of best knowing one each other and to discuss all together. This year we will meet in Ravenna, hosted by MAR, the Museum of Art and by the Classense Library. The conference will run the 13th, 14th and 15th of December 2017.

In the field of Art-Science, Generative Art has a peculiar task. Generative Art is the idea realized as genetic code of artificial events, as the construction of dynamic complex systems able to generate endless variations. Each Generative Project is a concept-software that works producing unique and non-repeatable events, like music, images or 3D Objects, as possible and manifold expressions of the generating idea strongly recognizable as a vision belonging to an artist/designer/musician/architect/mathematician. This generative Idea / human-creative-act make an unpredictable, amazing and endless expansion of human creativity. We can create species of events with a recognizable identity, following our vision. Computers are simply the tools for its storage in memory and execution.

This approach opened a new era in Art, Design, and Composition: the challenge of a new naturalness of the artificial event as a mirror of Nature. Variations, like in Bach music, are the best strong communication of the Idea. Once more man emulates Nature, as in the act of making Art.

This approach suddenly opened the possibility to rediscover possible fields of human creativity that would be unthinkable without computer tools. If these tools, at the beginning of the computer era, seemed to extinguish the human creativity, today, with the generative approach, directly operates on codes of Harmony and on codes of Identity. They become tools that open new fields and enhance our understanding of creativity as an indissoluble synthesis between art and science.

After two hundred years of the old industrial era of necessarily cloned objects, music, architectures, communications the one-of-a-kind object becomes an essential answer to emergent contemporary aesthetical needs.

### **Liliana Stracuzzi**

Centro culturale Le torri di Budrio,  
Budrio

<https://goo.gl/sAz2rW>

Giovanni Chessa (musicologist) and Liliana Stracuzzi (art expert and critic) since 12 years are art directors of the cultural Centre Le Torri dell'acqua di Budrio (the Water Towers of Budrio), where they organize annual music events, with programs including classical music and experimental contemporary music. An important yearly meeting is "Dialogue on composition", a festival with musicians from all Europe. The cultural program of Le Torri di Budrio includes also the organization of art expositions and art lectures by Liliana Stracuzzi and other experts.

**Title**      **Making enjoyable complex listening**

**Abstract** Contemporary music is a very difficult exercise of complex listening: the challenge deals with overcoming our "listening routines" of compositions such as melodies, consonance and all the traditional anticipation of musical discourse. From our experience and organization of musical events we have picked up some useful elements which make easier this complex listening of variation and dissonance. That means more involvement and participation of the public and getting to a closer relationship between listeners and musicians. Some examples of musical pieces associated with the reaction of the public will be selected for a better understanding of open and complex listening.

### Franco Torriani

Pépinières Européennes pour  
Jeunes Artistes, Montreuil  
Noema  
<http://www.art4eu.net>  
<http://noemalab.eu>

Franco Torriani after graduating in Economics at the Turin University, concentrated on the connections and interferences among economy, cultural and social environment. He has worked - as an independent consultant in external relations and communication strategies – for private companies and cultural organizations. He is author of publications and contributor on many events in Europe and occasionally in other Continents. Since the '70s He has been studying the interactions among arts, sciences, technologies, focusing from the '90s on art and life sciences. Member in the '90s of Ars Technica (Paris) and co-founder of ArsLab (Turin), he is in the board of Pépinières Européennes pour Jeunes Artistes (Montreuil, France; chairman 1998-2007). He is in the advisory board of the online magazine *Noema* (<https://noemalab.eu/>) and in the scientific committee of Mediaversi (<http://www.mediaversi.it/>). As a researcher and practitioner across life sciences, digital humanities and arts, he is currently investigating the interactions among body, brain, environment and the intriguing trends of the ongoing technologization of the contemporary mix of body and mind, also related to the digital economy.

**Title** **Residences in the Labyrinth of the World. A few reflections on almost a quarter-century experiences with Pépinières pioneer residences network**

**Abstract** Pépinières européennes pour jeunes artistes, an organization 'networking' on artistic mobility in Europe, Canada (Québec) and in case associated countries. Mobility is one of the most important driving forces of contemporary culture.

Pépinières facilitate and foster the mobility of young artists, in view of their professionalisation on the European and international scenes. In order to implement these actions, Pépinières develop mobility, artistic creation, coproduction, dissemination and training programs federated by the concept "Encounter and joint creation", that enable young artists and creative professionals to develop artistic projects to be shared with the audiences they encounter.

In April 2014, Pépinières settled in La Maison de l'Arbre, in Montreuil, Seine- Saint-Denis near Paris (<http://art4eu.net>), where they placed their offices and benefit from relatively large spaces dedicated to transdisciplinary artistic creation and dissemination, also with social artists who get involved in projects that they share with diverse local audiences distant from culture.

The e.mobility online platform, with its "Matching Box", enables artists and professionals to connect in order to facilitate their exchanges. Its facilitates their work and procedures by providing them with an easy access to these calls for applications.

"As part as the implementation of their programs, Pépinières launch year-round calls for applications. These programs are open to emerging artists, authors, performers, designers, technicians and creative and culture professionals involved in the artistic creation process, in a spirit of openness and sharing.

My personal opinion is that we need more and more the concept of 'complexity' bringing to these interrelationships a new global dimension of coherence, in conceptual, instrumental and prospective terms . Extrapolation "...generally arises from a certain capacity to extract a 'known thing' from its context and apply it to another field...." Louis Bec, it embraces "...experimental artistic activities, scientific research and technological developments..".

### Judith van der Elst

<http://www.asthecrow.net>

<http://machinewilderness.net>

Judith van der Elst holds a MA in Archaeology, University Leiden (NL) and a Ph.D. in Anthropology (Archaeology) from the University of New Mexico (USA) with a specialization in Geographical Information Sciences. Main interests include spatial and emerging technology applications in the social sciences and humanities (E-Culture), with over 15 years of experience in this field. Her theoretical background is in diversity in spatial thinking and spatial reasoning and developing methodologies for understanding this diversity through cross-modal languages and novel pedagogies. She also has extended work experience in heritage management, among others at the National Park Service, Chaco Culture, National Historical Park USA. She has published her work in industry and academic books and journals, and has collaborated on international heritage projects and conducted participatory projects working with traditional communities, crossing art, science, and technology. New initiatives focus on a biosemiotic approach in art/science collaborations.

**Title**      **Lunglevel. A spatial perspective**

**Abstract** In the spatial sciences a greenness index is a well-known statistic to monitor changes in vegetation health at global scale. The idea of an index within Peircean semiotics is that it points to something else as a referential relationship; in this case the statistic tells us something about the health of the planetary sphere in which humans and other organisms live and can thrive (lung-level). During the short presentation I will address two related aspects of 'greenness' and how this can underpin a novel framework for developing spatial technologies.

- 1) Working toward a novel spatial ontology in which categories of space are defined based on the idea that objects and processes are interdependent. Based on work by Galton and Mizoguchi I outline why greenness can be considered such a category.
- 2) Re-thinking greenness as an index of environmental health, what other such categories are equally or even more indicative of change.

Understanding our 'lunglevel' space from this novel framework and perspective can provide a different direction and impetus for developing spatial technologies.