

Art and Science: Processes, Systems and Histories of Entangled Knowledge

Venue	Vilnius Academy of Arts, Gothic hall, Maironio St. 6, Vilnius
Dates	28–30 September 2026
Organizers	PASS - Center for Practice-based Art Studies (University of Copenhagen), Royal Danish Academy of Fine Arts - Schools of Visual Arts, Vilnius Academy of Arts, Umeå Academy of Fine Arts and KUNO network

This seminar aims to examine the relationships between art and science – historically, methodologically and conceptually – with a particular focus on the processual, experimental and systemic connections that have characterized both fields throughout the 20th and 21st centuries.

Already at the dawn of modernist art, we see how artists such as the Futurists and Constructivists orient themselves towards science, especially physics, as a new frame of reference for their thinking about form, movement and energy. Where religion had previously been the dominant frame of reference for art's work with cognition, science and philosophy gradually took over this role in the 19th and 20th centuries. Aesthetic reflection thus shifted from transcendence to immanence – from revelation to experiment.

In contemporary art, this development is seen in new forms. A striking example is Pierre Huyghe's work *After A Life Ahead* (2017), which unfolds as a living, time-based biotechnical system. The exhibition incorporates HeLa cancer cells, algae, bacteria, bees and even peacocks with two DNA systems, and moves in a field where biological evolution, systems theory, thermodynamics, symbiosis and entropy form both motif and method. Here, the work itself becomes an ecological cycle – a self-organizing process in an environment where technology, biology and geology meet.

Such works suggest that there may be a common history of ideas and knowledge in art and science – a shared movement from stable form to dynamic system, from object to relation. In this context, questions of time and space take on special significance: just as physics has transformed our understanding of the structure of time and space, art has similarly experimented with perception, complexity and simultaneity. It is well known that Niels Bohr was interested in Cubism, and that art's own processual forms – e.g. land art, performance and interactive media – often function as aesthetic parallels to biological and technical systems with autopoiesis, self-regulation and emergence. In continuation of this, we can include cybernetic thinking about circuits and feedback, which has been of crucial importance in both music and visual art, and which can be traced from the system art of the 1960s to contemporary experiments with energy and materiality.

In contemporary art, this interest in process, function, composition and participation is strongly present. Many artists seek to incorporate insights from contemporary cross-disciplinary knowledge and knowledge practices such as Earth System Science, ecological thinking and environmentalism into the very design of the work. The question becomes how the exchange between art, science, philosophy and critical thinking is translated into artistic media, structures and practices: how are scientific concepts such as system, process, energy or complexity translated into aesthetic form and practice?

Art and Science: Processes, Systems and Histories of Entangled Knowledge aims not only to gather examples of concrete exchanges between art and science – historical or current – but also to discuss whether there is a more comprehensive history of knowledge or ideas in which art and science are entangled and share a common interest in the living, the processual and the relational. The seminar also invites reflection on methodology at the intersection of science and art, particularly on the status of concepts such as experiment and research as they are applied in both fields. It asks to what extent shared epistemological principles can be identified across these disciplines, bearing in mind what philosopher of science, Isabelle Stengers, often reminds us: Scientists, artists, and philosophers may meet, but not under the authority of one who would explain the others.

Programme

Monday, 28 September

12:15–13:00	Registration of participants & tea/coffee
13:00–13:15	Welcome by the Vilnius Academy of Arts Rector prof. Ieva Skauronė and organizers' opening remarks
13:15–14:15	Dehlia Hannah: Performative Experiments
14:15–15:15	Linas Gabrielaitis: Planetary Chess and Geological Posthumanism
15:15–15:45	Coffee break
15:45–16:45	Rikke Luther: Mud... and the Earth System – Thinking the Ocean-Lands (online presentation)
16:45–17:30	Screening of Film: Rikke Luther: Here's Mud... In Your Eye (42 min.)

Tuesday, 29 September

09:00–10:00	Denis Petrina: Apparatus Between Art, Philosophy, and Science
10:00–11:00	Kylie Gilchrist: "An Un-Unified Field Theory of Poetry": David Medalla and Modern Physics
11:00–11:15	Coffee break
11:15–12:15	Henrik B Andersen: How Science has resonated in the concept of sculpture since the 1960s
12:15–13:15	Lunch
13:15–14:15	Helene Nymann: The Shape of a Shared Question: Interdisciplinarity, Uncertainty, and Collective Inquiry
14:15–15:15	Irene Campolmi: An Invitation to Yonder (online presentation)
15:15–15:30	Coffee break
15:30–16:30	Mikkel Bogh: Towards an Ecology of Traces. What Art and History can learn from Evolutionary Biology

Wednesday, 30 September

09:00–10:00	Per Nilsson: DaDa, Art and Scientific Methodology (online presentation)
10:00–11:00	Rune Söchting: Instruments of relation: measurement and the sensible
11:00–11:15	Coffee break
11:15–12:15	Audronė Žukauskaitė: Artwork as a Living Organism
12:15–12:30	Concluding remarks

Seminar abstracts

Dehlia Hannah

Ph.D., Associate Professor of Environmental Aesthetics, Department of Arts and Cultural Studies, University of Copenhagen—
Section for Art History

Performative Experiments

Performative Experiments articulates the philosophical implications of a genre of contemporary artwork that takes the form of scientific experiments. Deploying scientific methods as aesthetic form and media, these artworks reveal how emerging science and technology are shaping cultural imagination of bodies, materials and environments. Performative experiments do not merely translate science into art: they query epistemological practices, inviting audiences into the messy processes of what Science and Technology Studies (STS) has called 'knowledge in the making.' Rather than communicating or illustrating scientific findings, performative experiments demand literacy in the historical epistemologies of specific scientific fields. Sometimes deadpan in their re-presentations of experimental methods, sometimes queer or parodic, they engage audiences of art as witnesses to the production of scientific facts—whether to bolster their truth claims or call them into question. At a moment in which materialisms (new and old) vie for public attention alongside industries peddling outlandish solutions to health and sustainability issues, we cannot afford to embrace scientific claims uncritically nor to wallow in doubt. This presentation brings together insights from the philosophy of science, STS, aesthetics and art criticism to reveal how epistemology of scientific experimentation grounds contemporary cultural imaginaries.

Linas Gabrielaitis

Doctoral Researcher, Information Technology and Communication Sciences, Tampere University

Planetary Chess and Geological Posthumanism

This talk presents a vision of a Geological Posthumanism building on the history of chess as a game of ecological and planetary modelling. Reading through premodern chess variants, their diagrams, and rules of play, I trace a medieval, alchemical understanding of the Earth (an "Old Geology"), in which matter possesses transformative, metamorphic, and intensely vital forces. Turning to Posthumanism, I show how Old Geology offers an early account of New Materialist agential matter, and how these chess variants made seasonal change, material transformation, and environmental computation available as materials for play.

Rikke Luther

Artist and researcher

– online presentation

– screening of video-work

Mud... and the Earth System — Thinking the Ocean-Lands

Beneath our feet, landscapes are transforming. Muds are in motion. The Ocean-Lands: Mud Within the Earth System Humans examines the effects of the planet's growing 'mud-scapes'. Human-time measures development through fragments of pottery – muds given solid form and purpose by human hands. Every mud is a mixture of soils and the never-ending circulation of water within the 'Earth System'. Every mud mixes the political territories humans claim to hold and control with Earth's systems humans scarcely understand, let alone control. In mud, the tiny scale of human histories mixes with the vast scale of the planet's and that of the cosmos.

Within the developing Ocean-Lands - a littoral formed by the jurisdiction of nations and the infinite spaces of the ocean-commons and atmosphere – muds take on a new significance. Cultures that once measured themselves by longevity of their stories and the stability of the institutions they built, are humiliated; forced to admit they are merely the content of more powerful systems. For millennia, 'static muds' facilitated culture, trade, and the exchange of ideas across legal boundaries. Those secure muds are now in motion. Glaciers and inland ice melt as mud-flats and swamps reclaim space from human occupation. Permafrost melts and sinks, as elsewhere land slips. Lakes recede, their beds dry and collapse. Seas of stones left by retreating inland ice leave flowers of a pre-human past, rich in quicksilver and uranium. Swelling muds slide toward the oceans, to join the garbled circulations of the Earth System.

Muds are a medium through which bacteria organise themselves. As Earth Systems bend and warp, their organisation changes. Though no politician could admit it, such micro-organisms created the territories they command. Primitive planktons two million years ago facilitated the creation of mountains by lubricating the movement of one slab of rock upon another under the pressure of moving tectonic plates. Human perspective compresses and distorts the 'deep-time' cycles of plankton and mountain. Yet, human-time now forces planetary systems to spin to our arrhythmic patterns. As the UN Environmental Program notes, humanity is edging toward a 'transformative collapse'.

Film screening

Rikke Luther: *Here's Mud... In Your Eye*, 2026 (42 min.)

Mud is the Earth's blood. Landscapes buckle and mountains dissolve. In the Arctic, ancient muds in permafrost release brown waters, creating sediment plumes that flow into the ocean. Geological and biological changes happen at human speed, overshadowed by interfaces that cloud our vision, altering our view of nature and its rapid transformation. Planetary Boundaries are among us. Maps lose relevance as geography syncopates with human pace. Data decay is frantic; the past offers no guidance.

The film examines how human hands navigate as science struggles to keep up with evolving data. We are not measures of geo-ecological reality, yet all knowledge passes through us. Rapidly changing muds reveal unpredictable stresses, deeply affecting cultivation—the very foundation of culture. The North Atlantic seabed serves as an organic library of planetary history, with vital micro-life battling fears related to the Atlantic Meridional Overturning Circulation (AMOC).

Mud in Your Eye explores the fragility of human understanding through narratives connecting Greenland, Iceland, and Denmark. The story concludes with an 'unidentified seismic object,' a response from the Earth to human activity, while actor David Bateson voices the narrative, inner dialogues, and characters.

Denis Petrina

Researcher at the Department of Contemporary Philosophy, Lithuanian Culture Research Institute

Apparatus Between Art, Philosophy, and Science

In "What is a Dispositif", drawing on Foucault's archaeological and genealogical methods, Deleuze identifies the apparatus as a heterogeneous set of lines in perpetual variation – lines that do not merely represent but produce the real through their differential relations. Barad's notion of apparatus, developed through a reading of Niels Bohr's philosophy-physics, radicalizes this productive dimension: apparatuses themselves are phenomena, irreducibly entangled with what they observe, measure, or enact. Together, these frameworks suggest that apparatus is an onto-epistemological configuration – one that simultaneously constitutes its object, its observer, and the conditions of intelligibility between them.

This paper proposes apparatus as a transversal operator between art, philosophy, and science – the very movement through which their boundaries become productive rather than fixed. What this transversality makes visible is that apparatus, across all three domains, is always already a matter of mattering – in Barad's double sense: a material process and a production of significance inseparable from what is measurable, thinkable, and sensible.

Kylie Gilchrist

Postdoc, Department of Arts and Cultural Studies, Copenhagen University

"An Un-Unified Field Theory of Poetry": David Medalla, Signals Gallery, and Modern Physics

Writing in the newsbulletin of London's experimental gallery Signals in 1964, David Medalla noted his pursuit of an 'un-unified field theory of poetry somewhat analogous to the still missing unified field theory in physics.' In this suggestive phrase, Medalla seems to evoke popular understandings of Albert Einstein's widely publicized pursuit of a 'unified field theory' that would reconcile conflicting scientific theories in a comprehensive understanding of the cosmos, while counter-posing his own imaginative vision of planetary interconnection among a plurality of artistic languages. Medalla's suggestive phrase, this paper proposes, foregrounds how Medalla and his Signals Gallery colleagues mobilized a serious engagement with modern physics in their efforts to realize a mode of transdisciplinary and internationalist collaboration that questioned the epistemic hierarchies of European

colonialism as well as the traditional borders of art and knowledge production. While attending to the ambivalences of their techno-utopian vision, I argue for its pertinence as a site of convergence between artistic and scientific inquiry as well as an under-recognized precedent for the emphasis on transdisciplinary collaboration and collectivity in contemporary practice.

Henrik B Andersen

Sculptor and Professor, Vilnius Academy of Arts

How Science has resonated in the concept of sculpture since the 1960s

Based on a selection of contemporary sculptural and installation works, as well as artworks from the experimental art practices of the 1960s and 1970s, this lecture explores the interspace between natural science and art through an experimental and conceptual framework. This in-betweenness is understood as a transitory field in which artistic and scientific concepts, formal structures, and modes of realization are translated and transferred across two distinct systems of knowledge. The lecture seeks to identify conceptual affinities that underlie both scientific discovery and realization of artworks. Against this backdrop, the lecture examines how recent scientific insights and images not only challenge the autonomy of artistic media but also transform the media's own internal temporal and structural organization. Finally, the lecture proposes that the creation of the artwork may be understood as a fundamentally diagrammatic activity, one that is embedded within and shaped by an environment of continuously evolving patterns, processes, and structures operating across both the living and non-living world, from the microscopic to the cosmic scale.

Helene Nymann

Artist, Ph.D., Postdoc at the National Gallery of Denmark and PASS

The Shape of a Shared Question: Interdisciplinarity, Uncertainty, and Collective Inquiry

The most important thinking may happen at the edges of what we already know. Drawing on experiences from international art–science collaborations, this talk asks what can emerge when people with different methods, perspectives, and forms of expertise work together. Through examples of participation, uncertainty, and cultural learning, it explores how interdisciplinarity can become more than an exchange of knowledge. It can become a map that can only be read collectively.

Irene Campolmi

Curator for Art, Technology and Society, Amos Rex, Helsinki. Curator at Large and Co-founder, Yonder | Art•Science | Niels Bohr Institute, Copenhagen

– online presentation

An Invitation to Yonder

Yonder is the space between here and there: a place that can never be inhabited, only imagined and aspired to. It is also the name of the new Art•Science program at the Niels Bohr Institute, which I co-founded with Professor of Astrophysics Jens Hjorth. Yonder is simultaneously a concept, a methodology, and a program that explores collaborations between artists, curators, and scientists. To yonder is to investigate how the open-ended freedom of artistic practice, the rigor of scientific inquiry, and the agency of technology can converge to cultivate richer understandings of how knowledge comes into being. Rather than reinforcing linear, anthropocentric narratives of time, knowledge, and progress, this interdisciplinary approach invites us to imagine alternative ways of knowing and relating to the future.

This paper presents three case studies—the exhibitions Yet, It Moves! at CC, Light Echoes at Rundetaarn, and the Spring 2027 exhibition merging art and quantum mechanics at Amos Rex—in which artists and scientists, beyond the conventions and languages of their respective disciplines, have learned from one another's methods to expand the scope of their research and practice. Rather than positioning art as an illustration of scientific discovery, or science as a validation of artistic expression, the paper argues for sustained collaborations grounded in shared curiosity that generate new modes of inquiry into the universe we inhabit. Art and science have long shaped our collective imagination and our understanding of reality using two diverse languages; what if these two disciplines were merged to enable questions that neither discipline could formulate alone?

Bringing together contemporary physics, artistic practice, and emerging technologies, these collaborations position art as a complementary methodology for challenging conventional understandings of the past, present, and future. Technology is understood not merely as a tool but as a medium through which speculative forms of inquiry can emerge. In this sense, Yonder proposes a mode of research in which art, science, and technology converge not to resolve uncertainty, but to inhabit it productively. To yonder is to embrace uncertainty not as a problem to be solved, but as the very condition that makes imagination possible. Wonder, in turn, becomes a critical method for perceiving—and creating—plural futures.

Mikkel Bogh

Professor of Art History, Department of Arts and Cultural Studies, Copenhagen University, Director of the Novo Nordisk Foundation Center for Practice-based Art Studies (PASS)

Towards an Ecology of Traces. What Art and History can learn from Evolutionary Biology

Evolutionary biology has fundamentally altered our understanding of life by shifting attention from isolated organisms to the networks of traces through which life continuously transforms itself. Organisms do not simply adapt to environments; they inherit, produce and respond to traces left by others - chemical gradients, ecological niches, microbial symbioses, paths, residues and material modifications that become conditions for future life. Thinkers such as Lynn Margulis, Isabelle Stengers and Bruno Latour have argued that living systems emerge less through competition than through entanglement, collaboration and the continuous negotiation of inherited worlds.

This lecture asks what happens when such ecological thinking is brought into dialogue with art history. Rather than treating artworks as stable objects or images as representations, it proposes that they be understood as active traces within larger ecologies of movement, memory and material exchange. Drawing on the work of Frank Fehrenbach alongside historians of science, environmental humanities and recent theories of niche construction, the lecture explores how images themselves participate in environments: they preserve gestures, channel attention, orient bodies, sediment cultural memory and leave material and cognitive traces that shape subsequent actions.

An ecology of traces thus offers a different account of both artistic production and historical knowledge. History becomes less the reconstruction of discrete events than the mapping of persistent trajectories, while aesthetics shifts from the contemplation of finished forms towards the perception of processes, residues and relations. Such an approach also opens new conversations between art history and contemporary biology, suggesting that both disciplines investigate how worlds are continuously composed through accumulations of traces that remain active long after their makers have disappeared.

Per Nilsson

Associate professor, Umeå Academy of Fine Arts

DaDa, Art and Scientific Methodology

On Paul Feyerabend's suggestion of scientific methodological playfulness. For Feyerabend scientific methodology worked more in an anarchistic manner than according to strict methodological rules. In his later days he started talking about DaDaism instead of anarchism to avoid the political implications of anarchism. I will in this talk bring forward what this means for science and for art. One thought is that science has gone through an aestheticization during the 20th century.

Rune Søchting

Associate professor, The Royal Danish Art Academy, Schools of visual arts

Instruments of relation: measurement and the sensible

This presentation explores the notion and practice of measurement as a meeting point between artistic and scientific practices, with particular attention to the role of instruments in shaping and supporting perception and knowledge. The practice of measuring involves establishing relations between bodies, distances, durations, materials, and scales, but also creating tensions between them. Drawing on ideas from, among others, Gilbert Simondon and Michel Serres, the talk considers measurement as a generative process through which connections between matter, perception, and knowledge are formed. It asks how instruments participate in producing the realities they allow us to perceive and describe, and how artistic practices might reveal, question, or reconfigure these relations.

Audronė Žukauskaitė

Chief Researcher, The Lithuanian Culture Research Institute

Artwork as a Living Organism

Drawing on my book *Organism-Oriented Ontology* (2023), I will examine the morphogenesis of living forms and the technogenesis of artistic works. For this purpose, I will refer to Gilbert Simondon's notion of transduction, a principle that explains both biological and technological transformations. Transduction functions as a process that modifies its components and allows them to pass from one order of magnitude to another. In this respect, living beings are proto-technological and proto-artificial, using a specific domain as a basis to structure a new domain of reality. In this sense, a living being functions in the same way as an artwork: it emerges from the potentiality of the pre-individual and then follows the quasi-causal series of transductions. This insight changes our understanding of biological relationality and, conversely, expands our understanding of the artistic domain. Drawing on the works of Pierre Huyghe, I will examine the morphogenesis of biological forms and the technogenesis of art systems in terms of second-order emergence.