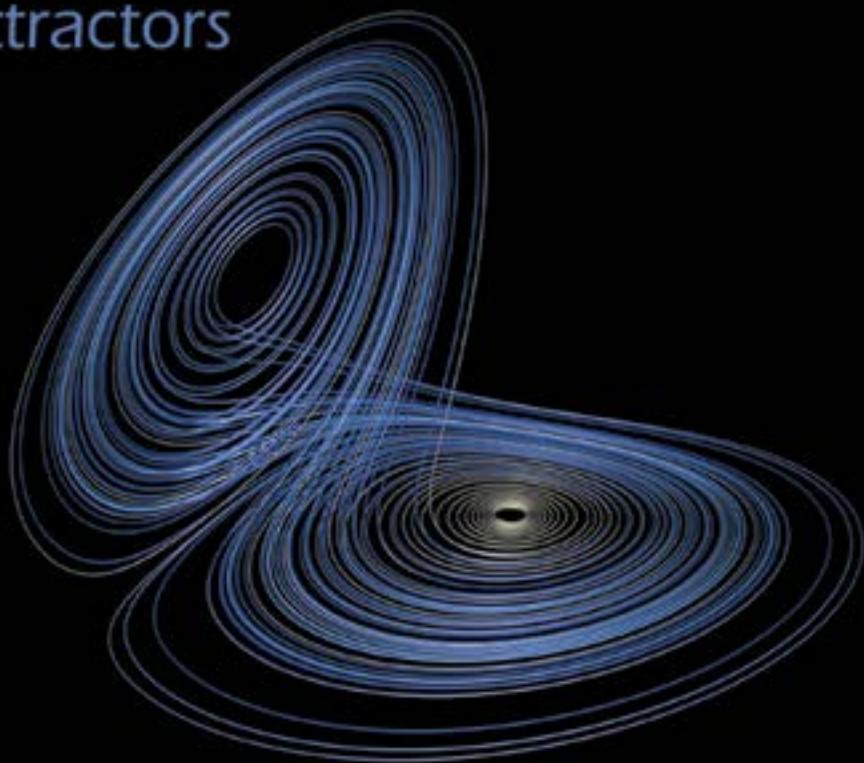
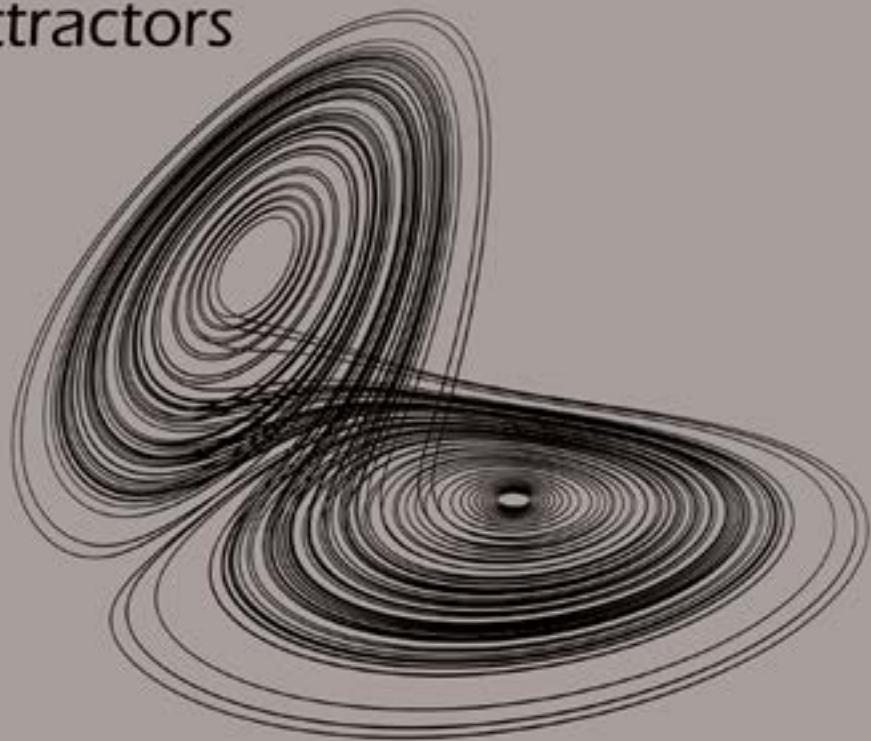
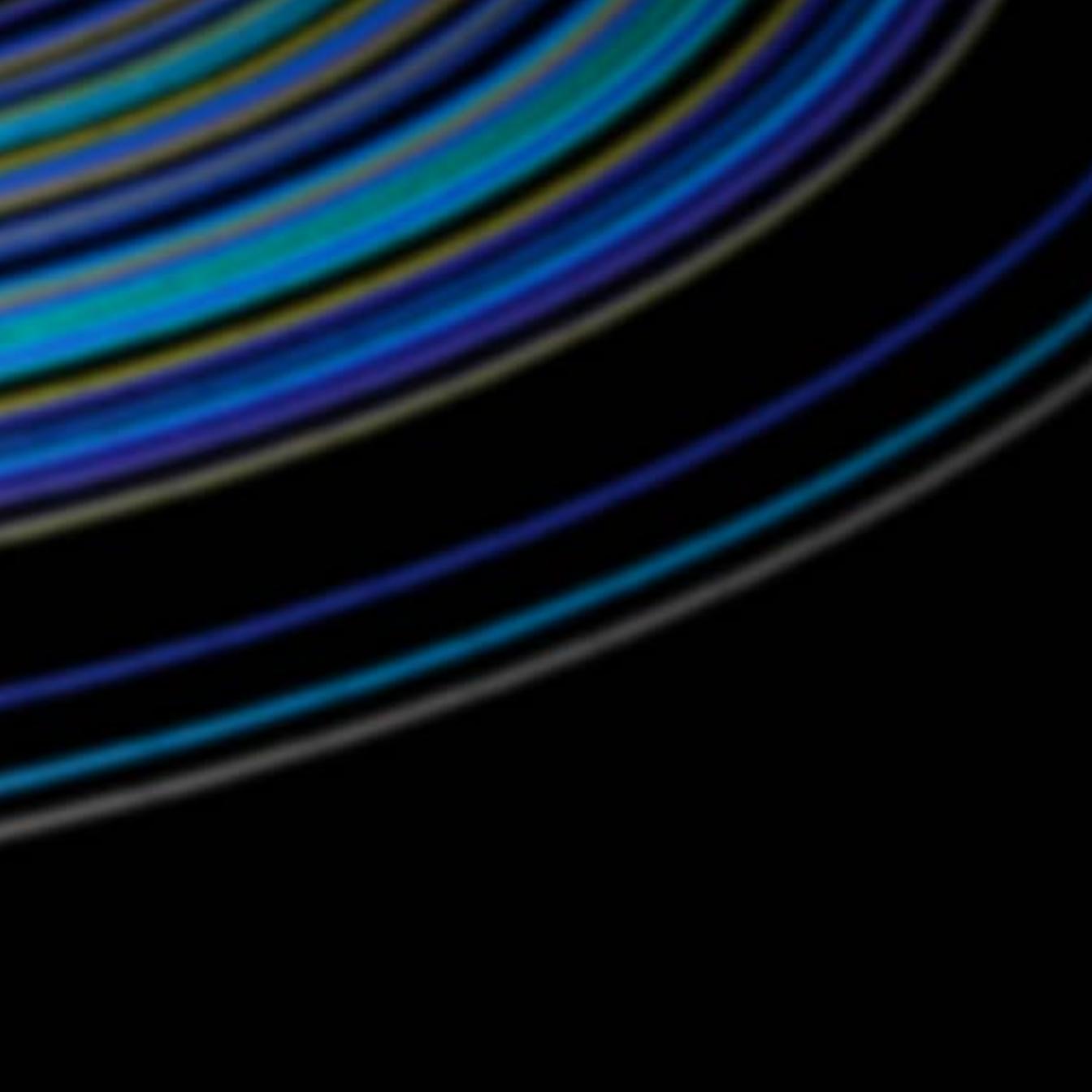


# Strange Attractors



## Strange Attractors



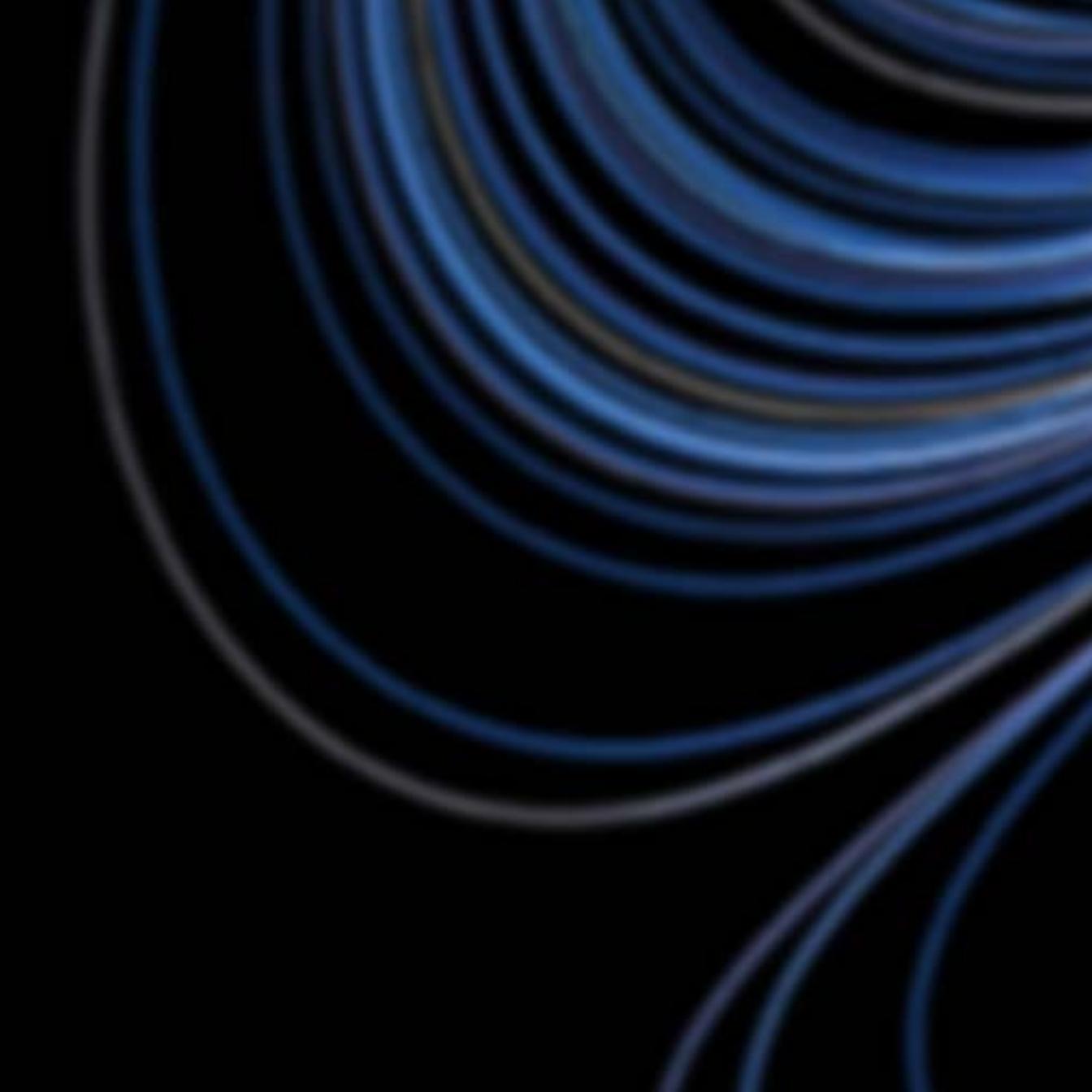


**Strange Attractors** is a group exhibition conceived as an extension of a multi-format symposium held at the CUE Art Foundation in New York City in November 2017. Initiated and organized by Taney Roniger, the conference brought together a group of distinguished artists, writers, curators, and scientists to explore prospects for an art-science partnership in the 21st century. Central to both the conference and the exhibition is the idea that art is, like science, a distinct way of knowing, and one whose unique language can yield insights into subjects studied by other fields. We wish to thank the following for their participation in the symposium:

Suzanne Anker, Gianluca Bianchino, Jeanne Brasile, Catherine Chalmers, Evelina Domnitch and Dmitry Gelfand, James Elkins, Linda Francis, Lorrie Fredette, Daniel Hill, Ed Kerns, Eve Andrée Laramée, Stephen Nowlin, Sinead Maharaj, Matthew Ritchie, Taney Roniger, Luis F. Schettino, Leonard Shapiro, Werner Sun, Dan Weiskopf, and Margaret Wertheim.

We would also like to thank Corina Larkin, Shona Masarin-Hurst, and Eva Elmore at the CUE Art Foundation for their support of and contributions to the original conference.

A transcript of the 2017 dialogue can be found here: [strangeattractors.cueartfoundation.com](http://strangeattractors.cueartfoundation.com)



## Strange Attractors: Dialogues for the Century of Synthesis

Taney Roniger

In an age that's witnessing the collapse of so many categories once held sacrosanct, a new sensibility is emerging in the arts. No longer content to operate within the confines of our field, many artists are moving out of the studio and into the world, often seeking out partnerships with practitioners from other disciplines. Disillusioned, it seems, with a long-exhausted formalism, and eager to reclaim the pursuit of truth rendered suspect by postmodernism, these post-disciplinary artists might be the aesthetic Argonauts of the new century. Among their number, artists engaged with science might be the vanguard.

Indeed, the number of artists in dialogue with science has grown exponentially over the last ten years. Talk of an "art-science convergence" ripples through academia, and judging solely by the profusion of literature on the subject something of a movement seems to be afoot. While some proponents proclaim the prospective

benefits to both fields, others speculate that the two will eventually merge to form some kind of hybrid. Heady claims indeed. And yet for all the enthusiasm, there's been very little in the way of critical dialogue on the subject. However we conceive of the convergence in question, what exactly does each field stand to gain? What do "sci-art" practitioners seek to accomplish?

Responding to this critical silence, I co-organized a conference with the CUE Art Foundation last fall hoping to achieve some measure of clarity on these questions. In addition to artists, our panel included two neuroscientists, a physicist, two curators, a philosopher, and an art historian. Over the course of eleven days we conversed online, covering a wide range of issues from our various perspectives. While in some sense we ended up with more questions than answers, we did arrive at some tentative conclusions. We also arrived somewhere wholly unexpected, and it is my hope that the present exhibition might inspire us to venture further. What fol-

lows, then, is both a reflection on our dialogue and an invitation of sorts to those eager to see it expanded.

### *Why art and science?*

Most discussions about art and science showcase the similarities between the two fields. The priority of creativity and imagination, the shared spirit of inquiry, the use of certain investigative methods such as the heuristic and the stochastic: these are cited repeatedly as grounds for an alliance. What our conversation yielded, however, is that this model of fraternal twinship between the two fields is misguided; indeed, the real generative potential lies precisely in their differences. For while science is a discursive approach to truth whose aim is objective knowledge, art is a non-discursive approach that traffics in knowledge of a different order. Denying either the very thing that makes it valuable seems unlikely to lead to any novelty worth achieving. Understood as a collaboration between different epistemic orientations, however, an art/science partnership might serve as a valuable means of mutual augmentation. While misunderstandings

will be inevitable, we might also see unexpected insights emerge from the tensions. Significantly, such a collaboration could also help clarify where each field reaches its limits.

But what exactly is the nature of the knowledge art produces? This is a crucial question, and one our dialogue spent considerable time exploring. While there were differing views on what art is and does, one thing unanimously agreed upon was the primacy of the poetic. As an allusive approach to truth that thrives on ambiguity and contradiction, visual art is a form of poetry whose force is primarily affective. A mode of cognition uniquely its own, it has access to regions of consciousness impenetrable by reason, and its singular strength lies in its transmission of what it finds there. While science is certainly informed by unconscious forces, the cognitive unconscious is art's native language. And because the cognitive unconscious is rooted in the body, art is very much, unlike science, a somatic form of cognition.

With art understood not as product but as *process*, it becomes easier to

approach the nagging question that plagues “sci-art” – namely, what exactly does art have to offer science? For what makes science attractive to art is more plainly evident (the proliferation of new imaging technologies, the wealth of discoveries unfolding across the various subfields, the universal allure of data visualization), but thus far the art-science relationship has been largely asymmetrical. On this our panelists had some compelling ideas. One neuroscientist suggested that art could play a role in helping scientists understand consciousness. Noting that science excels at taking things apart but founders when it comes to understanding whole systems, she pointed to artists' natural propensity for holistic thinking. Another neuroscientist ventured that because all perception is limited by our biases, artists might help scientists expand the range of what they notice. And with a view toward the growing momentum of posthumanism, one artist suggested that art might serve as a cognitive mediator, connecting us with the larger consciousness we share with other species.

Nearing the end of our conversation, we turned to the subject of transcendence. I asked whether the art-science movement might have anything to say on the matter, art's having had such a long and rich relationship with the subject. Here's where our dialogue swerved in a new direction. There were some tentative speculations, but then one of our panelists pointed out that although science is associated solely with reason, it harbors an under-recognized dimension that some might call spiritual. Scientists, after all, are no strangers to awe—that profound feeling of humility before the immense wonder of the universe—and this may well be what draws them to science in the first place. Even when wholly absent of God, what is this feeling but a form of religiosity? Could art and science join forces to restore the religious sentiment to those in whom the supernatural is no longer tenable? Could recovering that sentiment lead to greater empathy for the natural world? The longing for communion is surely still with us, unrequited though it may be in our secular age. If art could lend its tremendous poetic power to the affective underpinnings of science, perhaps an art-science

alliance might one day replace religion.

It's a huge conjecture. But then, a time of global crisis is no time to think small. Indeed, many artists nurturing the post-disciplinary sensibility are doing so for exactly this reason. In a sweeping conjecture of his own, the biologist E.O. Wilson predicted that ours would be the century of synthesis, one in which the arts, humanities, and sciences would unite toward a common purpose. Rather than convergence, he called it consilience. With an eye toward realizing Wilson's grand vision, *Strange Attractors* is a move in that direction from one corner of the visual arts. And although our purview is art and science, there's no reason to believe it has to stop here. After all, without philosophy and religion, we're a full two parts short of the great epistemological quadrumvirate. Perhaps it's not too much to hope that by the end of our century all the disciplines will be in dialogue – and, finally, no longer as strangers.

---

1 Elaine Reynolds, Associate Professor of Biology and Neuroscience, Lafayette College  
2 Luis Schettino, Associate Professor of Psychology and Neuroscience, Lafayette College  
3 Ed Kerns, Chair of Fine Arts, Lafayette College  
4 Stephen Nowlin, director of the Williamson Gallery of Art Center College of Design



# Infinitely Interdisciplinary

Jeanne Brasile

*Nothing is too wonderful to be true, if it be consistent with the laws of nature.*

*--Michael Faraday*

Art and science, in their specific and distinct practices, are ways and means towards humanity's attempts to make sense of the world. While there has been a long tradition of relations between art and science, the recent prevalence of interdisciplinary conversations and collaborations between artists and scientists has accelerated rapidly. Typically, what has been lacking in these alliances is a broader, critical reflection on what can be or has been achieved by the cross-fertilization of ideas, methods and resources available to artists and scientists working collaboratively or inspired by the other. The question becomes more complicated when working in the undefined area between art and science – for the matter becomes mired in issues of certainty, truth and beauty – which are often subjective, particularly amidst these disparate professional realms.

*Strange Attractors* was originally a multi-format symposium organized by the CUE Art Foundation and Taney Roniger in November of 2017. While much fertile ground was covered by the event, there is still more to explore. Modes of knowing differ for scientists and artists and this is a starting point perhaps for this exhibition, which functions as a visual discourse of what had been illuminated during the symposium. Many of my recent curatorial efforts have focused on the artistic possibilities presented by science. Conceivably, it may be the notion of boundless possibility that most appeals to those interested in the area where art and science meet.

Science is often applied to achieve a practical result – inventions or discoveries that improve our lives. Art is less tangible in purpose. It can be for communication or enjoyment, and some maintain it is devoid of function altogether. Yet, despite these dispari-

ties, both art and science are culminations of experience, lived or observed, from the natural world. Nature may be the lynchpin that holds these branches of learning together. It is no surprise then, that many of the artists in this exhibition have degrees in both art and science or related fields such as engineering or architecture.

With degrees in engineering and visual arts, Catherine Chalmers investigates systems of art, science and nature. Chalmers' interest is in natural systems and their prospects for solving real world problems, in her case the betterment of social conditions. This is echoed by Elaine Reynolds and Michael Hadley, whose collaborative practice combines their knowledge of neuroscience, microbiology, biological sciences, visual arts and technology to address the stability of our food supply in a time of profound climate change and developments in genetic engineering. Leonard Shapiro applies his knowledge of fine art and the social sciences to bring a multi-sensory approach to biology and art, especially methods of observation, in his drawings of anatomy and people.

Another area of great potential where art and science meet is in the analysis of systems and structures of nature. How might a multi-pronged query produce understanding beyond what art and science can illuminate exclusively? Matthew Ritchie utilizes data visualization, diagrams, materials and processes borrowed from science in his quest to express systems of information in a visual format. Similarly, Ed Kerns is concerned with finding harmonies across disciplines to achieve greater knowledge than what either science or the humanities can achieve individually. Linda Francis uses art to visually demonstrate the forces of physics – gravity, entropy and centrifugal force – giving form to that which is generally understood via equations or scientific language.

Still other artists adopt scientific methods in their pursuit of knowledge and conveyance of information. Daniel Hill's art is rooted in scientific process, resulting in paintings that explore sound and vision. His methods are both the advent and conceptual thrust of his work. Lorrie Fredette, though her work is

intuitive, uses medical journals as a starting point in her research into diseases and their transmission. Suzanne Anker is heavily reliant on scientific tools and techniques in the creation of her artwork, particularly microbiology. A pioneer of the Bio Art movement, Anker is interested in the language of bioengineering and the implications of genetic modification

Taney Roniger and Gianluca Bianchino, though working in disparate media, are both concerned with ontological matters. Roniger is engaged with the nature of unconscious knowledge and explores this in her gesture drawings, attempting to capture or demonstrate information that is not known consciously. Bianchino creates phenomenological objects that must be activated by the viewer to be fully understood. He is interested in the metaphysical space of the viewer and their place in the universe.

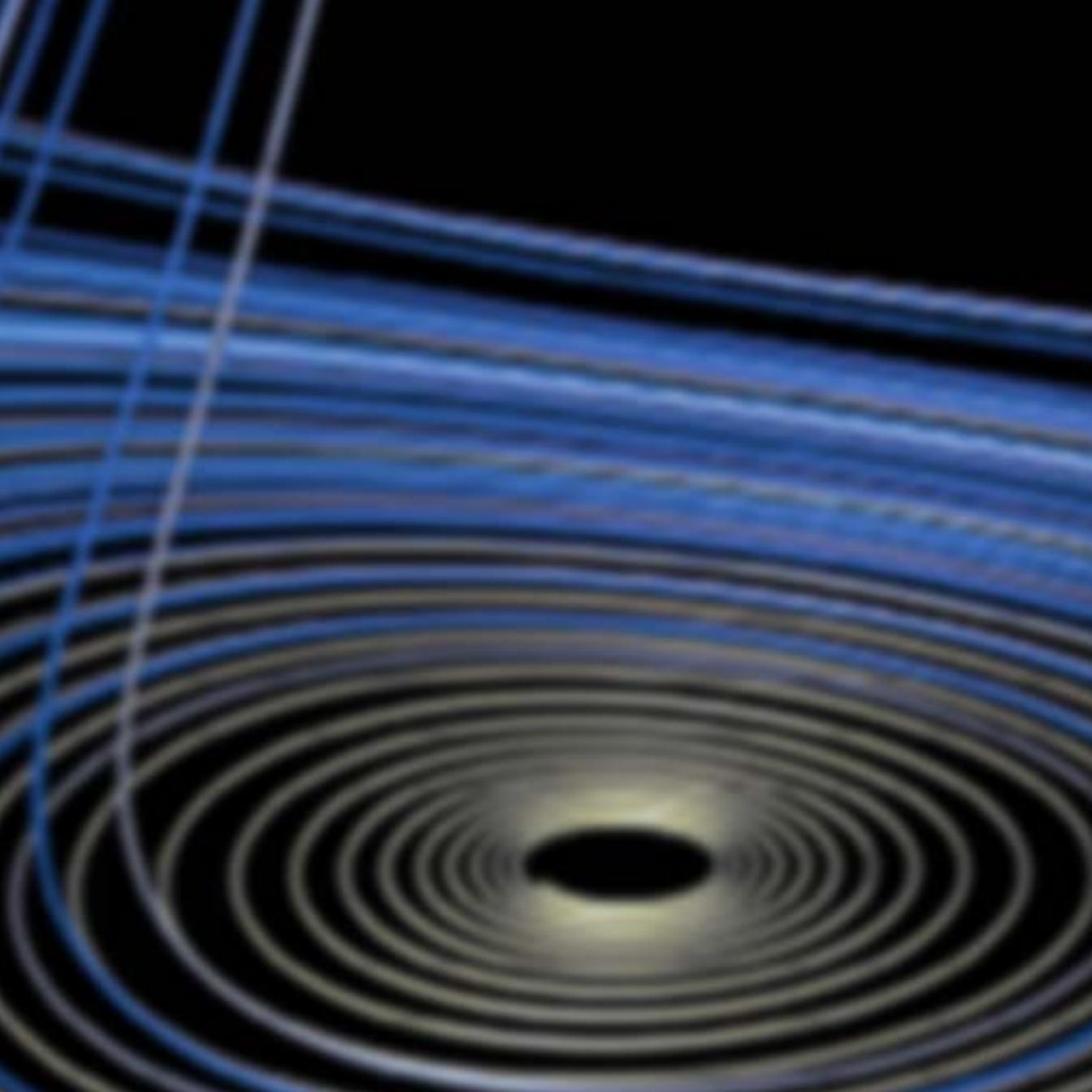
Werner Sun crosses the boundaries between digital technologies, geometry, abstract forms and their relationship to particle physics. His installations combine origami, 2D elements and geometric

patterns to explore communication from multiple perspectives. Eve Andrée Laramée looks at science as a means to imagine, create and understand community engagement. Both Sun and Laramée consider science as a means to communicate on a broader scale to address social conditions and cultural trends.

In this exhibition, artists are investigating and utilizing science in a philosophical sense, but some approach subjects with an eye towards practical applications. What is interesting is that, despite their varied areas of research, these artists are often predominantly captivated by the systems, order and structures of nature, while appropriating scientific ideas, methods and resources. Although humanity often sees itself as existing outside of nature, we are most certainly a part of it. If we can think about ourselves within the confines of the natural world, a consilience of art and nature might prove particularly fruitful in solving some of our more complex problems, problems that would benefit from an interdisciplinary perspective.

For example, mechanical engineers at NASA have used origami and observations of budding flowers and folding insect wings to design solar arrays that can power space explorations efficiently and economically. These endeavors, where artists, biologists, entomologists and engineers work together, is driven by a spirit of interdisciplinary problem-solving. To address the complex challenges we face presently and into the future, we may need to look more often to collaborative, holistic solutions arising from an acceptance that our current myopic tendencies will hinder our progress. In the future, the spirit of the interdisciplinary, or perhaps an outright consilience of science and the humanities, will become a necessity, not a luxury. After all, nature is infinitely interdisciplinary and we would do well to take note of the primacy of this truth.





## **Strange Attractors**

Artists:

Suzanne Anker  
Gianluca Bianchino  
Catherine Chalmers  
Linda Francis  
Lorrie Fredette  
Michael Hadley & Elaine Reynolds  
Daniel Hill  
Ed Kerns  
Eve Andrée Laramée  
Matthew Ritchie  
Taney Roniger  
Leonard Shapiro  
Werner Sun

# Suzanne Anker

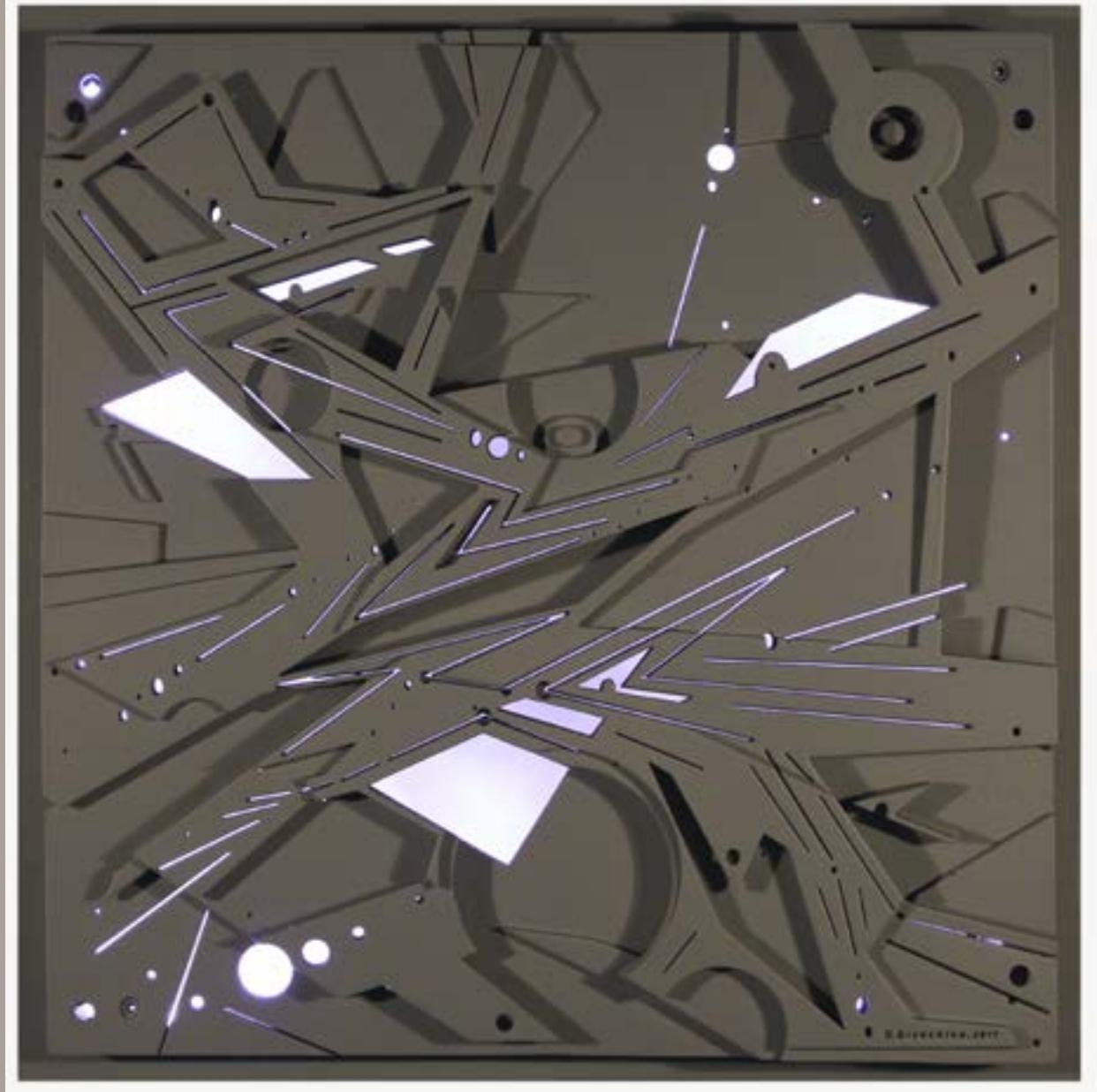
**Vanitas in a Petri Dish**  
archival inkjet prints  
20" x 20" each  
2013-2019



# Gianluca Bianchino



**Lightmap #6**  
enamel coated wood (laser cut) and LED lights  
22" x 20" x 2.5"  
2017



# Catherine Chalmers

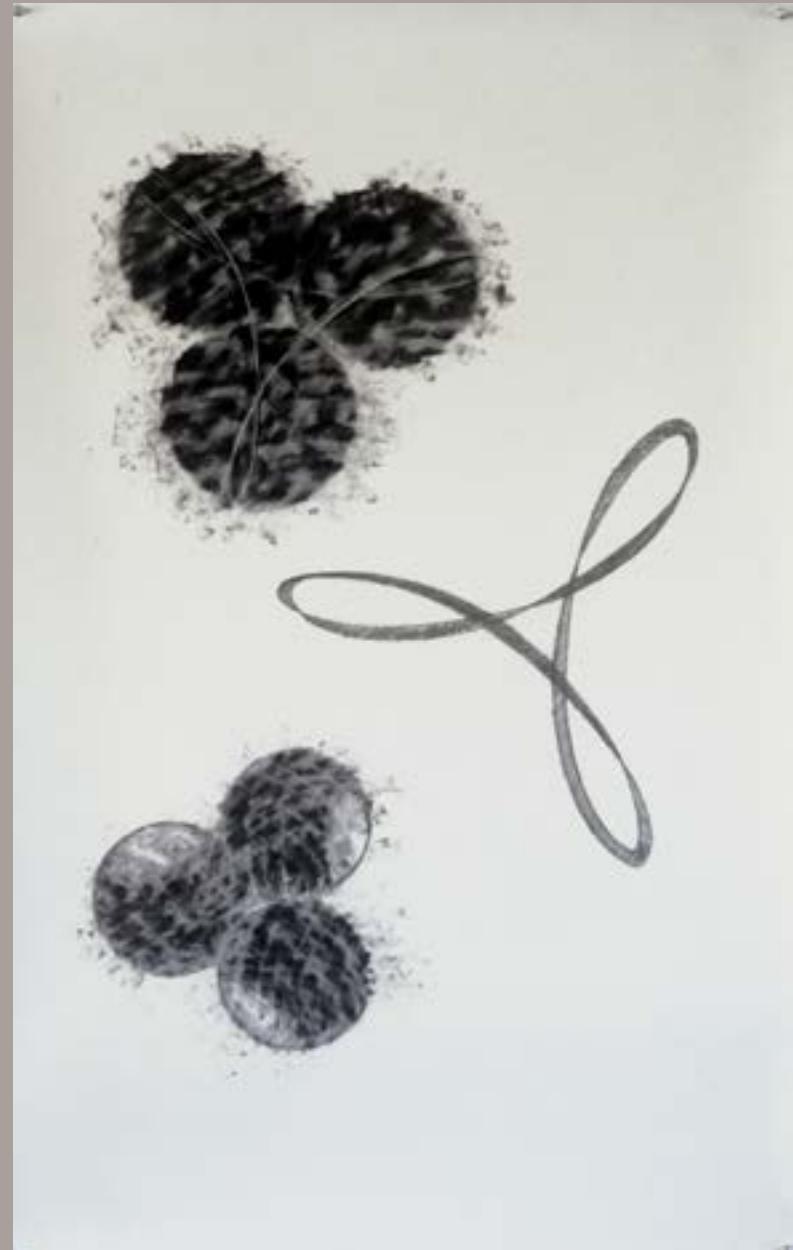
**Leafcutters** (still)  
video  
18 minutes  
2017



# Linda Francis



**Threes**  
chalk on paper  
42" x 32.5"  
2003



# Lorrie Fredette

**Complex Interplay**  
beeswax, tree resin, muslin, brass, nylon  
dimensions vary  
2017



# Daniel Hill



**Untitled 14**  
acrylic polymer on panel  
30" x 44"  
2018



# Ed Kerns

## **Endemism, Specific and Explosive in Form**

acrylic on canvas

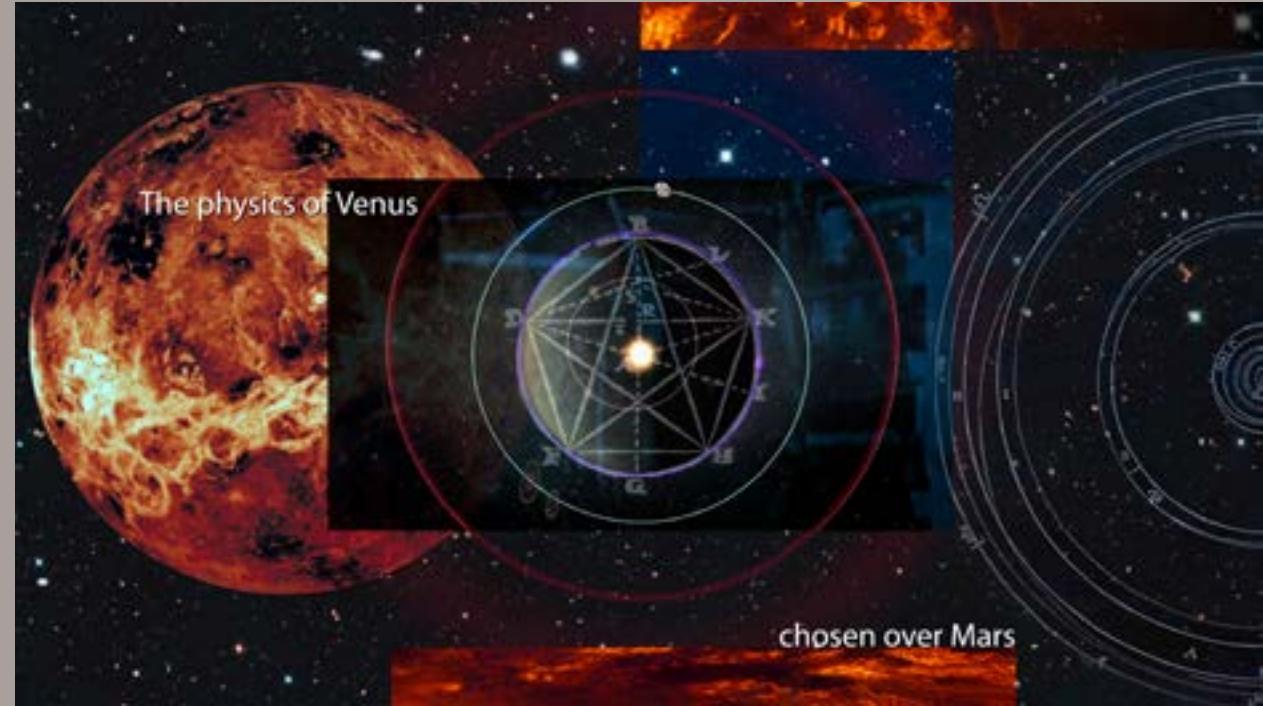
52" x 38"

2018



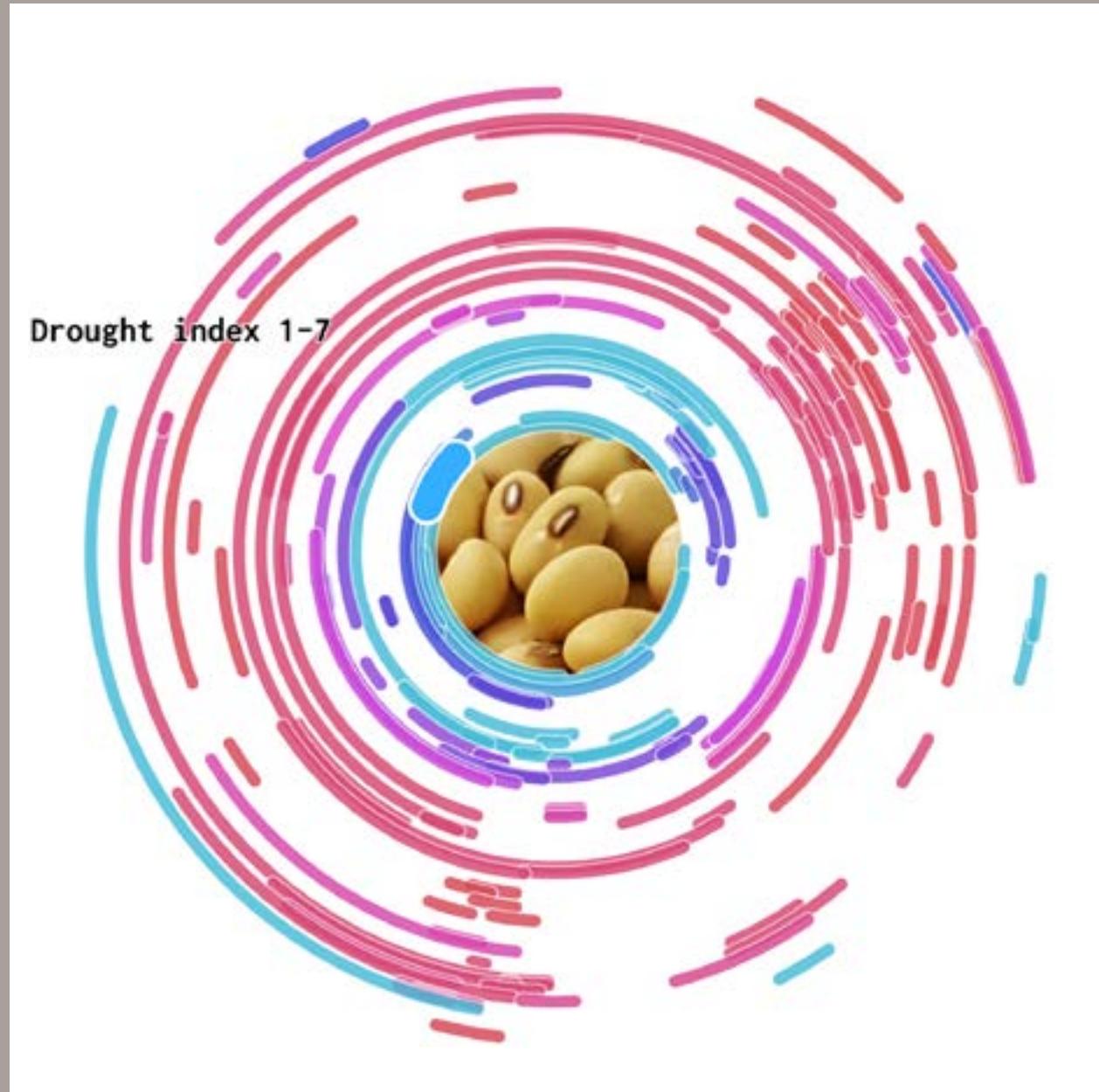
# Eve Andrée Laramée

**Waste of Space Poems** (detail)  
digital prints  
each 16" x 20"  
2018



**Elaine Reynolds  
&  
Michael Hadley**

**Saved**  
live microscope feed and video installation  
variable  
2019



# Matthew Ritchie

## **Light Landscape**

ink on fabric with LED matrix

50" x 55" x 3"

2018

©Matthew Ritchie

Image courtesy of James Cohan, New York

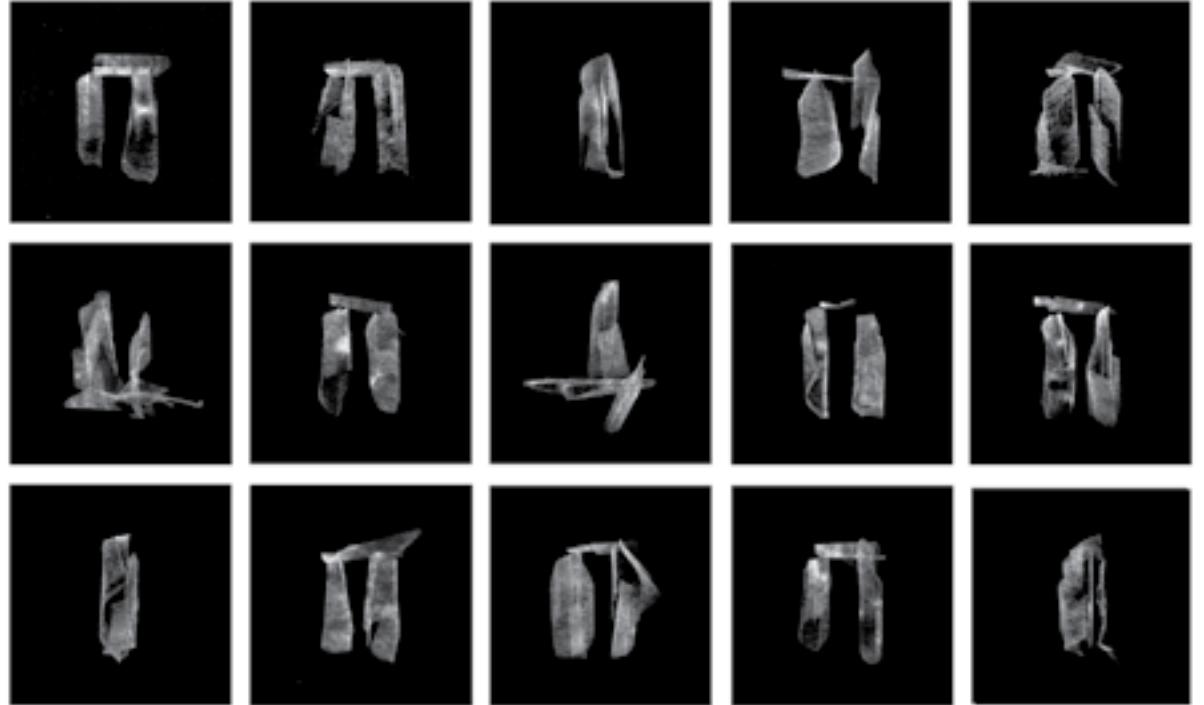
Nash Baker Photography



# Taney Roniger

## **Lithic Alphabet**

graphite drawings laser-etched into black Lucite  
total dimensions 54" x 96  
2018



# Leonard Shapiro

## **Gesture Drawing of My Mother (1)**

digital print on paper

16.5" x 11.5"

2015



# Werner Sun

## **A Random Walk**

mixed media

variable dimensions

2018

Image courtesy of Sheryl Sinkow



## **Acknowledgments**

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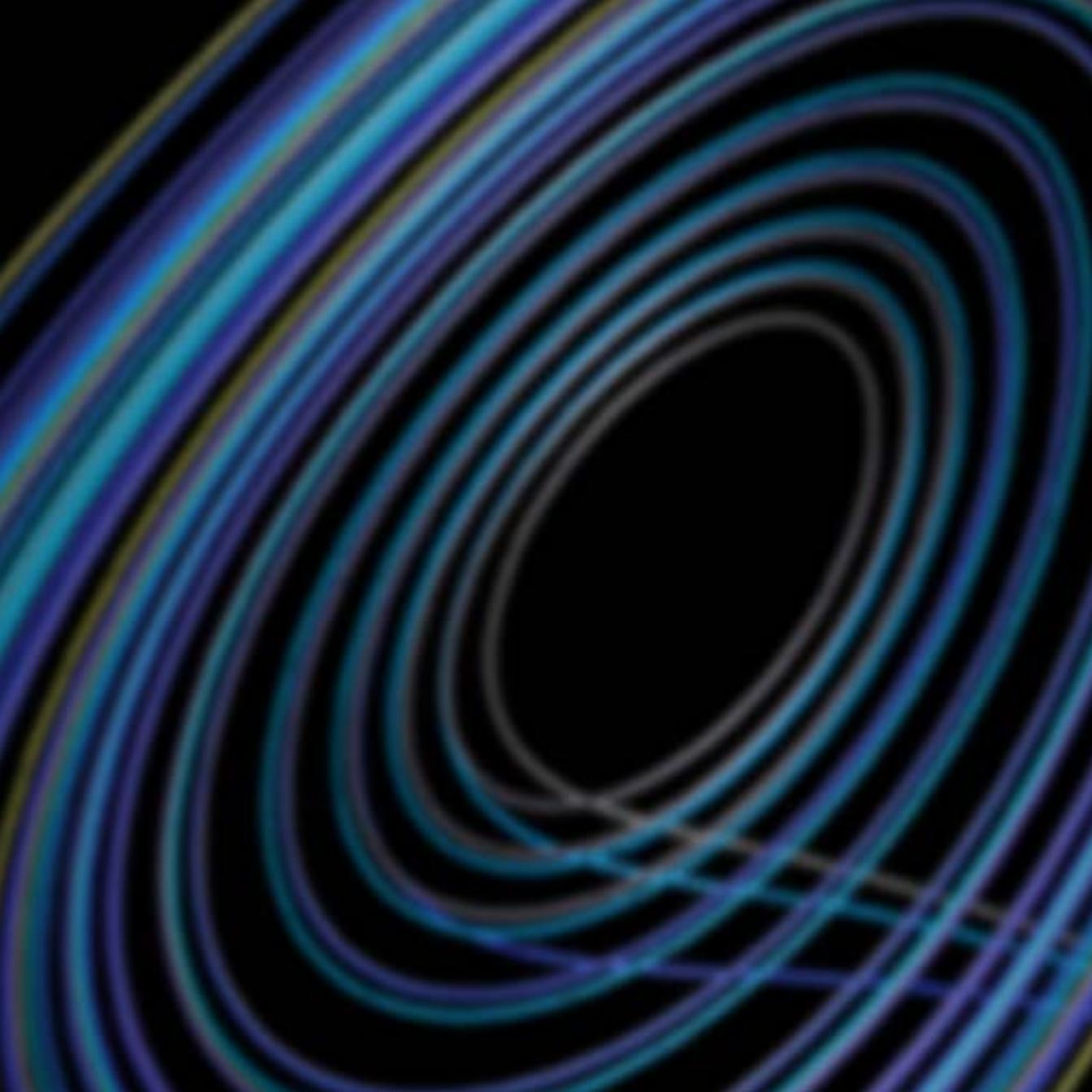
Collection of Jerry I. Speyer & Katherine G. Farley, New York

Up Transport

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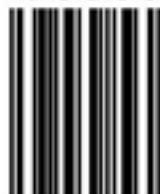




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