LAURA SPLAN
Entangled Entities

Austin Peay State University
Clarksville, TN 37044

This exhibition was made possible with generous funding from APSU's Department of Art + Design and the Center of Excellence for the Creative Arts. The New Gallery is a proud member of the Association of Academic Museums and Galleries.

AP# / Blurb/San Francisco, CA.

About the Department of Art + Design

Accredited by the National Association of Schools of Art and Design, APSU's Art + Design program offers studies in animation, drawing, digital media, graphic design, illustration, painting, photography, ceramics, printmaking, sculpture and art education. The department is housed in the College of Arts and Letters and consists of 16 full-time faculty for approximately 275 students. Three on-campus galleries also support the Art + Design programs. The Department of Art + Design recently moved into a new Art and Design Building. The Department of Art + Design also houses the Goldsmith Press and Rare Type Collection, an exceptionally large collection of wood letterforms.

Vision Statement

The Department of Art + Design's vision is to provide a creative environment that enables students to ask questions, think critically and take risks as they gain the knowledge, skills and confidence necessary for a meaningful, productive life and work as critical makers in a global society.

Diversity Statement

The Department of Art + Design at Austin Peay State University is committed to an active, intentional and ongoing engagement to foster diversity. Providing diverse voices and viewpoints is essential to achieving our mission and vision of educating informed global citizens. We welcome all people, regardless of age, disability, gender, gender expression, gender identity, genetic information, national origin, race, religion, sex, sexual orientation, political views or veteran status, and we seek to safeguard the safety, dignity and well-being of all people. We encourage and accept expressions of diversity in all of its forms.

About the Center of Excellence for the Creative Arts

Since 1985, the Center of Excellence for the Creative Arts (CECA, or "seek-ah") has been providing students, the Clarksville community and the Middle Tennessee region with engaging experiences through the Art + Design, Music, Theatre & Dance and Creative Writing programs at APSU.

CECA brings both emerging and prominent artists from around the nation to Clarksville each year to present concerts and lectures, work directly with students in master classes and workshops and introduce innovative ways of making or exploring art. CECA also provides undergraduate students with graduate-level experiences and internships that prepare them for the workplace or graduate school. In addition, CECA provides the talented faculty of the arts departments at APSU with research opportunities to enhance their professional growth.

CECA Mission

• Support the creative arts in the University, the local community and the Southeast region by sponsoring the creation, presentation, study and research of significant and distinctive works of art; and

• Provide an enriched environment conducive to the development of individual understanding and basic literacy in the creative arts disciplines through curricular and co-curricular arts education designed to meet the needs of the general university student, the arts major, the general public and the professional artist.

Director of The New Gallery: Michael Dickins
Gallery Assistants: Alex Nidiffer, Katie Boyer

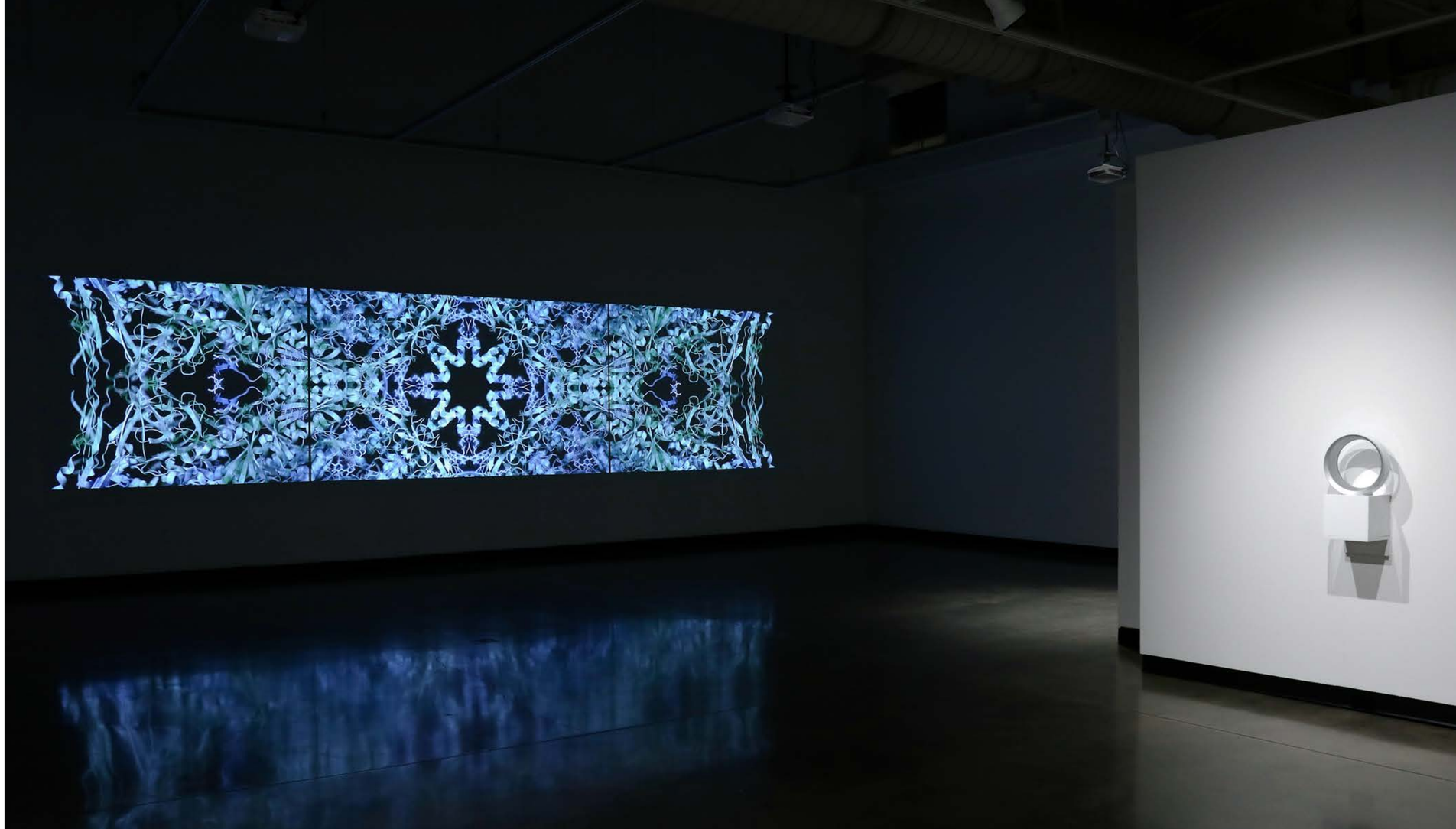
The New Gallery would like to acknowledge the traditional, ancestral, unceded territory of the Yuchi, Shawnee, and Cherokee First Nations on which we are exhibiting artwork, teaching and learning.

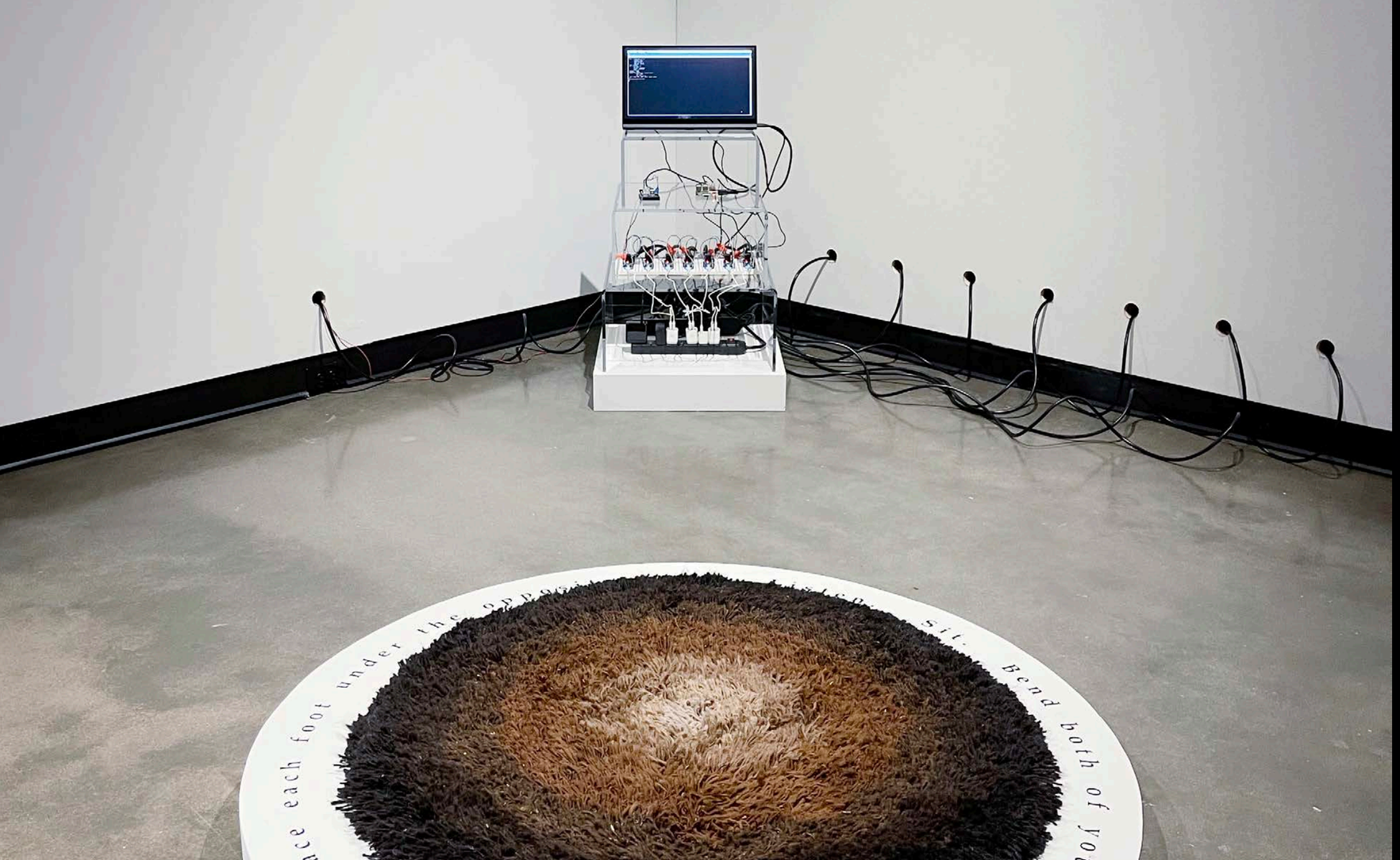
Entangled Entities examines interspecies entanglements in the contemporary biomedical landscape. Drawing upon artifacts of biotechnological modes of production ranging from machines to animals, the work explores the expanded industrial apparatus that intertwines science and culture.

The installation situates images of the coronavirus, among other artworks that incorporate artifacts of non-human species who are used for antibody production for human vaccines. The exhibition features a new multi-channel animation that was created using molecular visualization software and SARS-CoV-2 protein models. The animation is accompanied by an immersive soundscape inspired by the coronavirus genetic sequence. A series of networked laboratory mixers are activated by social media activity relating to the contested status of science. A data-driven fan adjusts based on the wind conditions at a biological laboratory in rural Pennsylvania. A rug made from the hand-spun wool of laboratory llamas and alpacas invites viewers to sit while listing to a voyeuristic sound collage of recordings made in a biotech laboratory.

Together, these artworks destabilize notions of the presence and absence of bodies, evoking the mutability of categories that delineate their status, unpacking constructions of self and other. The themes in *Entangled Entities*, including viruses, vaccines, and interconnected systems, are especially timely in this unique moment of the COVID-19 pandemic, framing complex biomedical issues with provocations of curiosity and wonder.

Laura Splan
February 2021





There are so many words that describe the work of Laura Splan – intelligent, beautiful, cohesive, and blissfully poetic. Much like the curiosity that drives both scientists and artists to investigate our world, the simple beauty and crispness of Splan's work encourage the viewer to discover the multi-layered conceptuality that is the pillar of Entangled Entities. This exhibition merges Science and Art with work that is heavily-researched, technologically driven, conceptually intelligent, and aesthetically beautiful.

Entangled Entities utilizes animation, textiles, readymade sculptures, sound, and coding to create an environment that ties together virus research, laboratory technicians, audio recordings, subtle political statements, color patterns, weather data, and llamas. These seemingly disparate subjects merge to create an immersive 'ambiotic' gallery environment. The space is full of repetitive audio and animated elements interrupted by intermittent surprises from the sculptures. These moments of surprises and discoveries in an environment of pleasant mundanity further reinforce the similarities between the disciplines of Science and Art.

Michael Dickins
Curator and Director of The New Gallery

Otherwise Ways of Knowing

Art and Biology in the work of Laura Splan

by Hannah Star Rogers

Sitting on a small round latch-hook rug made from hand-spun laboratory llama and alpaca wool layers of sounds from a biotech laboratory echo through our bodies. The pose of reflection we fold ourselves into to sit on the rug prepares us to think about the animals whose bodies are used to produce nanobodies used in vaccines and antiviral treatments and who produced the wool on which we now sit. We are asked to perform a ritual of folding our own bodies to enact the folding of a protein in the lumen, the interior part of a cell where a protein is folded and modified. This sound sculpture heard through a parabolic speaker, *Chaperone* (2019), and latch- hook rug, *Lumen* (2019), arose from Splan's collaboration with biomedical researchers at Integral Molecular, a Philadelphia-based biotechnology company. *Chaperone*, a term loaded with the cultural significance of gendered surveillance, refers to a protein that assists in protein folding. Its name comes from its ability to prevent non-specific aggregation by binding to non-native proteins and in the context of this piece invites thoughts about the artist's role in inviting visitors to fold themselves onto the wool rug. The rug was made materially possible by the providential gift of two biological laboratories, who, learning of Splan's interests, agreed to donate the wool as a medium for artwork. It seems to me as an observer, facilitator, and analyst of artists and scientists in collaboration, that this is the best type of artist-scientist interaction. In a world of competing knowledge, tensions around resources and practices, and fraught disciplinary negotiations, neither party sought to control or explain their position, techniques, or approaches. An opportunity for a contribution from a scientist to an artist arose, and through that kindness and the patience of an artist in ritually untangling and repurposing the wool, an artwork that exceeds both art and biology was created.

Brooklyn-based artist Laura Splan investigates biology as a practice and a subject of art through residencies and collaborations, bringing her into contact with laboratories, researchers and scientists. Splan's work shows a fondness for paradoxes in representations, a preference for play as a mode of exploration and a collaborative spirit for the possibility of artists and scientists working together. In this exhibition, Splan's wide-ranging art explores the tools, places, outcomes, and possibilities of contemporary biotechnology and biological science. But she always humanizes this intersection with serendipity, mystery, and suggestion. The intersection of art and science is, of course, at least as old as the categories themselves. However, the past 20 years have seen a marked increase in the interest that humanities, visual studies, and science studies scholars have taken in theorizing the relationship between art and science. The practices and products variously referred to as art-science, sciart, artsci, or simply art and science are many and appear across time and context. They include nineteenth-century natural history models and range from botanical drawings to contemporary theatrical productions about the history of science to experimental bioart. Such works refer to all manner of science using all kinds of art mediums: sculptures, speculative designs, performances, installations, films, and theatrical productions. In a broad sense, most of these artworks are related to science communication simply by virtue of their orientation toward public audiences.[1]

We might speculate that just as the Early Modern system of patronage yielded artworks representing social relations so that arts took as a subject the organizations under which they worked and which created the cultures they lived in, so too are contemporary artists responding to the power of science. A more pointed comparison might be the centrality of the church in this system resulted in the support of Renaissance art and gave the artists of the day their creative subject: the praise, commentary, and critique of religious activities and hierarchies. As we are grasped by the power of science and technology and its attendant bureaucracies, particularly in this moment of the COVID-19 medical and social policy crisis, it may be expected that artists would manifest a desire to investigate the tools of technical and scientific trades. There is a feminist and class politics at work in Splan's approach to science as a trade with tools that might be directed in innovative and aesthetic directions. Further, the descriptions

1 *Megan Halpern and Hannah Star Rogers, "Art-Science Collaborations, Complexities, and Challenges," in Routledge Handbook of Public Communication of Science and Technology, 3rd edition, eds. Massimiano Bucchi and Brain Trench (New York: Routledge, forthcoming 2022).*

of her work note of the individuals whose labor was involved in her pieces. In works like *Unraveling* (2021) and *Remote Entanglements* (2019), Splan conducts these aesthetic investigations to great effect through her personal and curious approach. Even as the dark edge that frames the viewer's experience comes into focus, that is the knowledge that this specialized software is used to study viruses like COVID-19, her approach highlights the pleasures of movement, distinguishing her in a world of critiques and celebrations.

Unraveling explodes the purposes of molecular visualization software as a tool for modeling unseen biological structures into a joyful twist and fold of colors and form that reads like a performance of what is possible for a seemingly dry and specific digital tool in the hands of an artist. Splan has worked extensively with image-rendering software and exhibits the results which offer us screens onto the laboratory and its ways of seeing the world. Rather than building a representation of a real-world molecular structure, the artist works against this impulse by complicating, confusing, and disrupting the patterns in sequence. Splan records this series of movements and offers a film of what is possible when this program reacts to and works with her doodle marks and gestures. Watching this performance of the micro rendered as a wall-sized monumental triptych that invites reverence, the visitor is prompted to think less about a final alignment of molecules and more about the movement of living structures. Molecular bonds are reformed and new relations are created, if only in a representational way, with a focus on the Feldenkraisian possibility of movement as a defining characteristic of life itself. Despite its digital representation, the sense of this white strand in the gallery is that of a ribbon in water or space, a gravity-less environment of unencumbered movement.

Remote Entanglements (2019) continues this tone of play and experimentation. This work gives rise to further interaction in the true sense of bodily experience and creates the potential for viewers to question animal-human relations and what all living things have in common. It offers viewers an incantation: our distance allows our intimacy. A fan blows air onto the bodies of viewers who by metaphorical proxy engage with the same sensory environment as llamas living at a biological laboratory vivarium. The fans adjust to reflect the wind speed present on the laboratory-farm in rural Pennsylvania. By transporting the llama environment into the gallery, Splan creates a turn on what it means to experience science. While we can never visit this scientific llama farm, we can imagine a shared moment of mammal sensory circumstance. Our attention is refocused away from protocols or spectacular moments of discovery and toward the pedestrian pace of life in the lab. Through this her fan makes the far-off vivarium into an everyday experience. And yet it is not quite every day: the equipment and networked technologies mediate the viewer's bodily experience. Viewers are left to meditate on ways of controlling and replicating environments in and out of scientific places and their corresponding effects on people and animals.

Splan's art does more than communicate or comment on science. It reveals the processes and techniques involved in biology by taking the tools and materials of science in imaginative directions that reveal how these technical means might be used in "otherwise" ways which would lead to different kinds of knowledge production: sometimes purely aesthetic, sometimes diversionary or other times provocative, and universally reflective. It seems clear that Splan draws here on the conventions of interactive art as established by art theorist Nathaniel Stern, who argues that the role of interactive art is to establish and practice conceptual-material relationships.[2] Embodied relations are imperative: we cannot stand outside of Splan's art looking in or flying 6,000 feet above it taking in only a distant image of the work. There is no seeing, but, rather, the issuing of an invitation to enter physical and cognitive ambit of these works. There is no simplicity of pressing a button in a science center or clicking a digital gallery interface to make a choice to consume art media. The experience offered is one's own forms of play, thought, and reflection. The artist shares affordances to access these possibilities through the documentation of her own explorations and offers methods of relation.

Even when Splan's comments on cultural and social attitudes toward science and technology are more direct, there is something fun about Splan's pieces. In *Contested Territories* (2019), that fun takes on an ick factor that is sure to capture imaginations and offer us what Sherry Turkle might call an evocative object, that is, an object to think

2 *Stern, Nathaniel. Interactive Art And Embodiment: The Implicit Body as Performance. Canterbury: Gylphi Limited, 2013.*

with.[3] Splan presents a lab mixer that gives a machine body to the internet's unseen reactions to science. The contested status of science in our society is directly treated as individual mixers are activated when a particular Twitter hashtag is used. The hashtags Splan has selected are terms that the Trump administration had suggested might be omitted from funding proposals. When these words which refer to the status of science are tweeted, tubes containing laboratory animal feces are agitated upon the use of hashtags like #evidencebased and #sciencebased. This work would be understood by Art, Science, and Technology Studies scholars as referencing the context of science, thus exposing the way science as a system of knowledge production fits into our wider society.[4] Such works remain less numerous than those that convey or contribute scientific ideas but they are of growing importance as the potential roles artists might choose to inhabit with regard to science are further probed.

If there is a temple of science in the world of contested facts, an inner sanctum of what we now understand to be an access to our interiority, it is surely the biomedical laboratory where lab-coated authorities stand ready to show us wonders: the multiplicity of ourselves in Petri dishes and our identities through nucleotides. The movement from altar to plinth and lab bench is more ether than a straight line, but the reverence and ritual surrounding these performance spaces have not been diminished by time even if its symbols and values have been reinterpreted again and again. Rituals are all over laboratories, and Splan has spent time in several. If one of the things artworks can offer is the democratization of science, as documentary photographer Berenice Abbott suggested, Splan's artworks offer access to the play and reflection that scientific tools make possible when brought into public space. At the same time, Splan offers generous collaboration to the scientists she works with and learns from. Scientists whose everyday practices are often eliminated from our sense of their work are placed in conversation with an outsider who is in a position to make new observations. She is also in a position to offer the countervailing and perhaps tantalizing suggestion that many of the mundane tools and ways of working might be renewed and made unfamiliar through being used in new ways. In *Termination Sequence (Into the Void)* (2020), Splan collaborates with lab instrumentation engineer Frank Masciocchi of Integral Molecular who is also a musician to create an improvised audio recording. This recorded collaboration loops on. Ambient in the space, it focuses attention away from interdisciplinary boundaries and toward what might be created together, using the tools of art, science, or both.

Splan's work repeatedly returns to ritual, often through the modes and metaphors of textiles. Splan uses the methods of weaving, folding, and playful unraveling to repurpose scientific ritual in aesthetic ways. Perhaps this return to textiles, with all of their textual baggage from Ovid's Athenian artisan Arachne and her epic narrative weaving to Manchester's Jacquard loom and its programmable pattern system which is a precursor to modern computing,[5] could be framed as inevitable as Splan has worked extensively with textiles. But I suspect the textile references across the exhibition are inspired by her subject and materials. Her background in textiles prepared her to see what is omnipresent in laboratory life: the repetition of an action according to an ordained pattern which makes a predetermined phenomenon visible, detectable, and meaningful. These are the anticipated actions of both the studio and the laboratory. Splan's work, particularly her *Unraveling* animations, explore how things might be otherwise. Viewers see how the tool-hands of scientific labor may depart their origins for related pastures. We are invited to explore how, in other hands, the aesthete devotee makes other knowledges.

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Hannah Star Rogers is a visiting scholar and curator based at the University of Edinburgh, where she researches and writes about the intersection of art and science. She holds a Ph.D. from Cornell University in Science and Technology Studies and an MFA from Columbia University. hannahstarrogers.com

3 *Turkle, Sherry. Evocative Objects:Things We Think With. Cambridge: MIT Press, 2011.*

4 *Hannah Rogers, Megan K. Halpern, Kathryn de Ridder-Vignone, and Dehlia Hannah, eds. The Routledge Handbook of Art, Science, and Technology Studies. London: Routledge, 2021.*

5 *Essinger, James. Jacquard's Web : How a hand-loom led to the birth of the information age. (2004).*

Unraveling II: Forest, Skyblue, Marine, Teal, Chromium, Palladium, Mercury (SARS-CoV-2 Spike protein with Nanobody Complex)
2021
synchronous 3-channel 4k video projection
Video Loop: 4 minutes / Projection: 32' W x 6' H

Unraveling: Forest, Skyblue, Marine, Teal, Chromium, Palladium, Mercury (SARS-CoV-2 Spike protein with Nanobody Complex) is part of a series of animations that present mesmerizing meditations on invisible entanglements between natural and constructed worlds. The digital animations are created using molecular visualization software and SARS-CoV-2 spike protein models. They include playful manipulations of folded protein forms, known as "conformations", which determine biological function including infectivity. Using specialized features of molecular visualization software in unconventional ways, the coronavirus spike protein is transformed by unraveling and morphing the folded and unfolded forms. The colors are chosen from the software's palette for their references to nature such as plants, animals, and chemical elements. The video titles in the series echo the colors' names that are evocative of idyllic representations of the natural world such as blue skies, green forests, ripe fruit and romantic flowers and are contrasted with the names of heavy metals found in personal computers such as mercury. The mere act of adding color is another layer of translation and fabrication since most viruses are smaller than visible wavelengths and therefore have no color. The color palette and its naming conventions reveal additional layers of abstraction built into the interfaces of the technologies we use to engage with and manipulate the natural world. *Unraveling* was developed in remote collaboration with scientists Edgar Davidson and Ben Doranz at biotech company Integral Molecular while "sheltering in place" for COVID-19.

Termination Sequence (Into the Void)
2020, Zoom recording of live improvised electric guitar performance
by Frank Masciocchi, TRT: 11 minute loop

Termination Sequence (Into the Void) is part of a series of recordings made by prompting biotech workers and scientists to play “A” notes and chords on guitar 33 times, the number of adenine nucleotides at the end of the SARS-CoV-2 mRNA sequence. *Into the Void* is a Zoom recording of a live improvised sound performance by Frank Masciocchi. Masciocchi is a musician as well as the lab instrumentation engineer at Philadelphia biotech company Integral Molecular where he is responsible for installation, calibration, and maintenance of lab equipment.

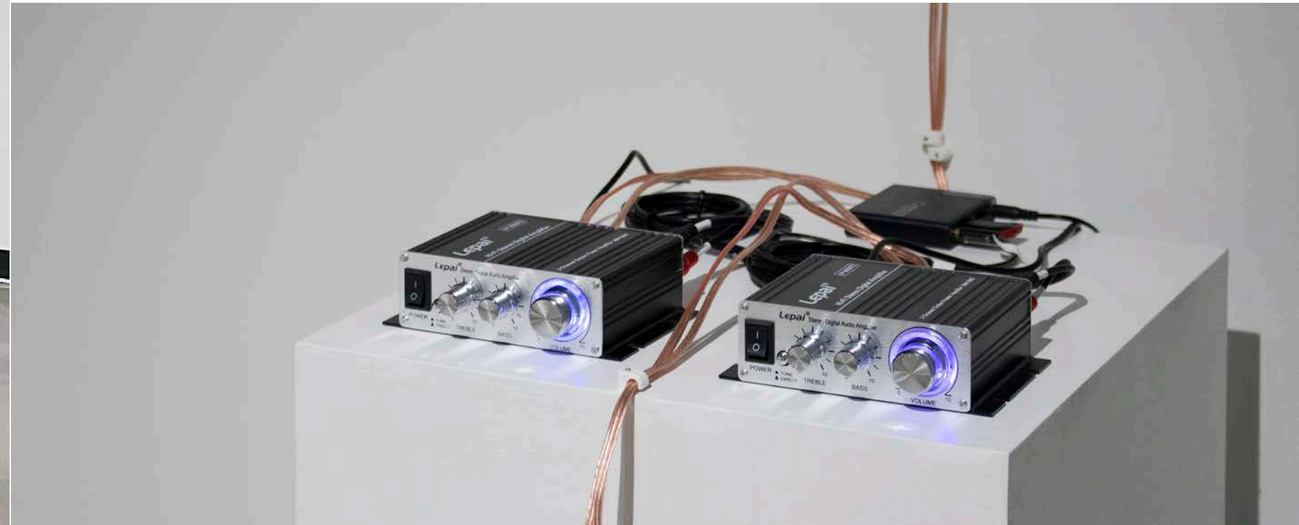
Unraveling / Termination Sequence (Into the Void)
watch video / hear soundscape

Lumen and Chaperone
2019, participatory rug sculpture made with hand-spun laboratory llama and alpaca wool, platform with vinyl text with soundscape heard on parabolic speaker with tactile transducers beneath rug

Lumen choreographs viewers' movements to sit on a latch hooked rug made with the hand-spun wool of laboratory llamas and alpacas. The wool for the sculpture was donated by biological laboratories that use camelids to produce antibodies for human drugs including vaccines and antiviral treatments. After washing and carding the fiber by hand, the wool was spun into yarn to be used in *Lumen* and other tactile sculptures. In biology, the lumen is the interior part of a cellular structure where a protein is folded and modified. Text accompanying the rug instructs the viewer to perform this folding action.

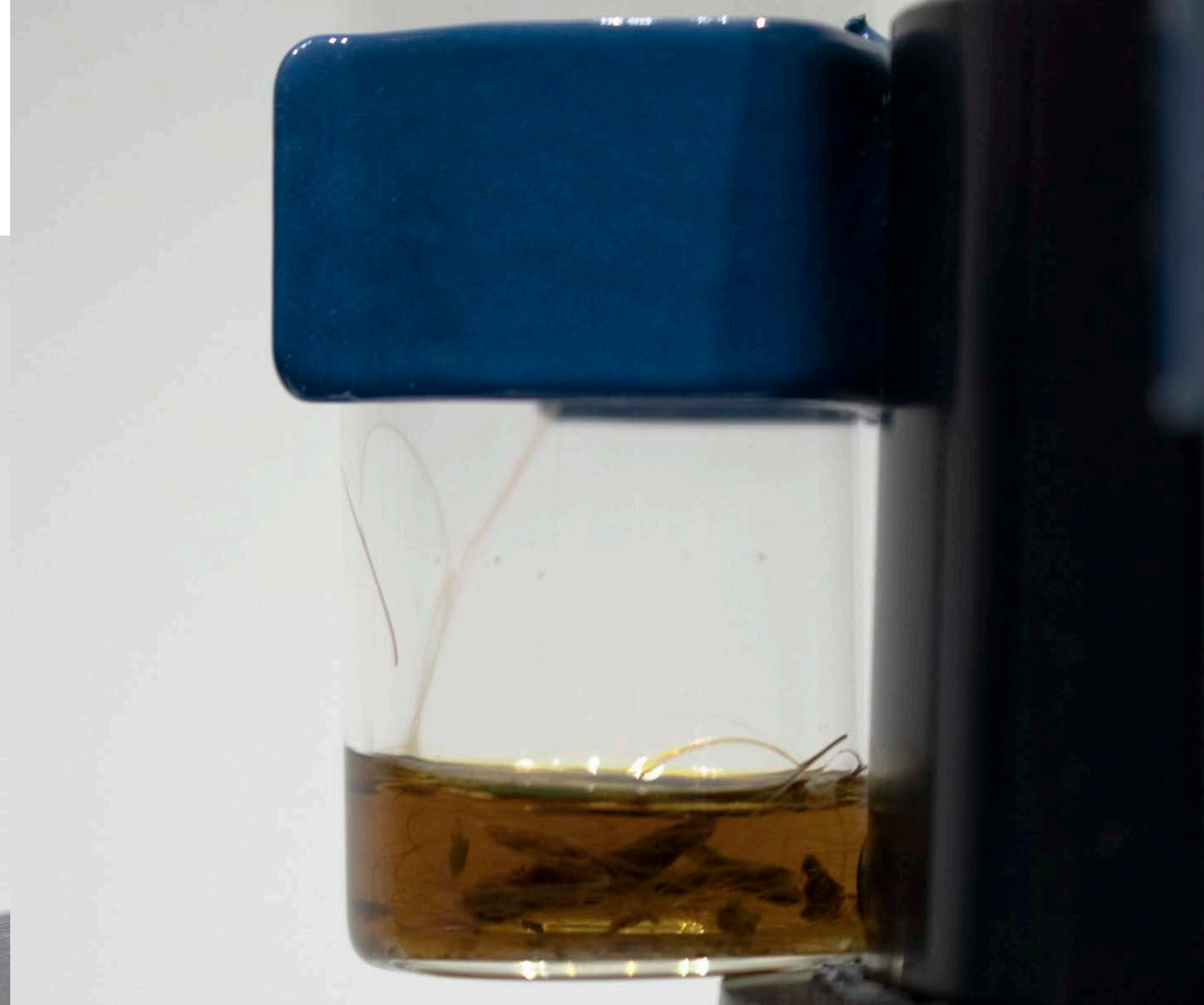
listen to *Chaperone*

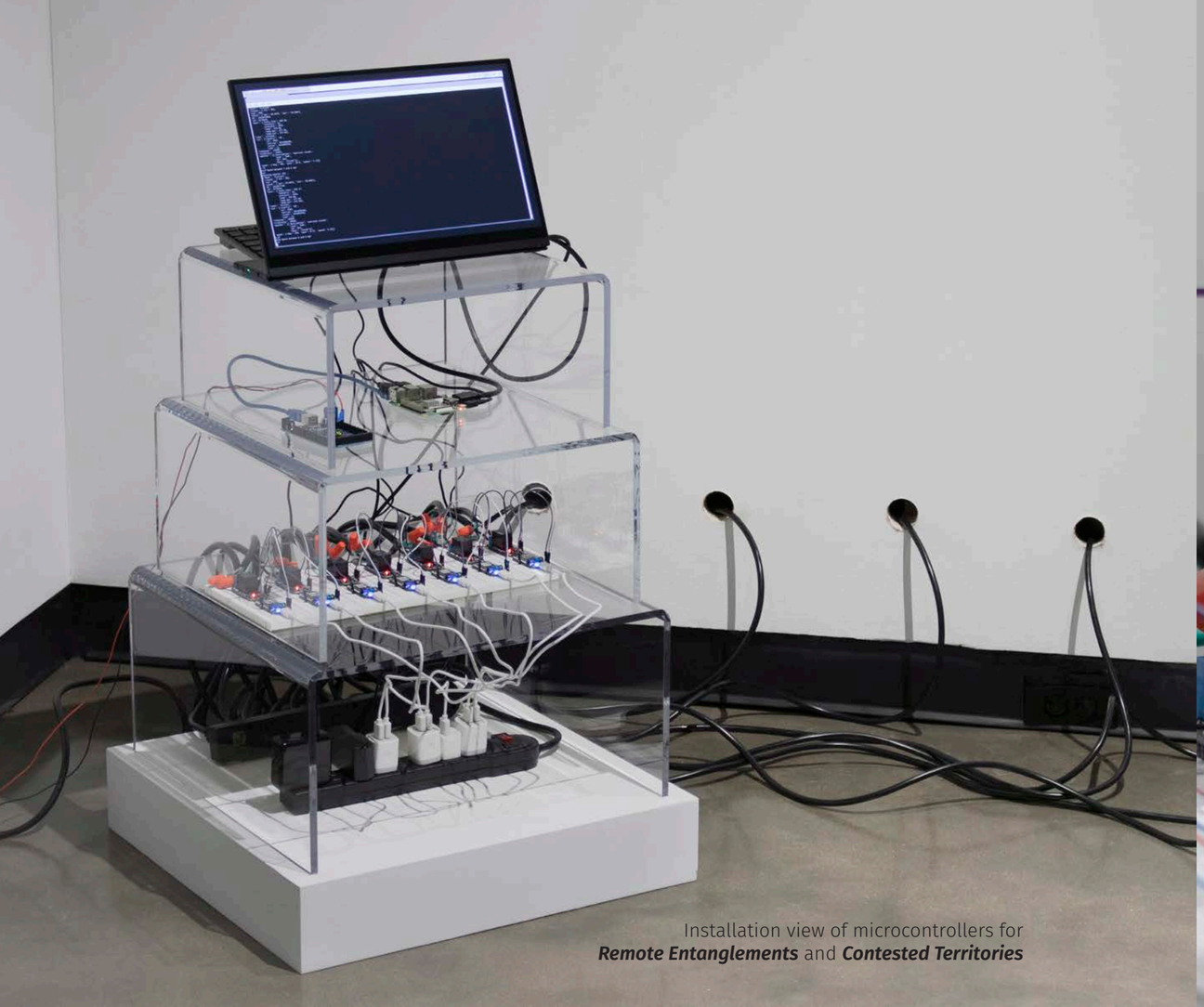
Sitting on the rug of *Lumen* engages viewers with unseen materialities and labor, of both humans and non-humans, as they touch the yarn and listen to an accompanying soundscape layering recordings made in a biotech lab. Robotic movements of machines, gurgling dish drains, and human interactions come together to create a sonic tour entitled *Chaperone*. Bass shakers beneath the rug platform vibrate with the bumps, clicks and bangs of laboratory machines in the soundscape. The work questions notions of the presence and absence of bodies evoking the mutability of categories that delineate their status.



Contested Territories
2019, laboratory llama feces in solution, Twitter activated lab mixers, networked microcontrollers, electrical relays, stainless steel placards

These laboratory machines activate when Twitter hashtags associated with the culturally contested status of Science are tweeted. As the networked devices intermittently check for the latest tweets, the mixers' movements materialize the sociopolitical complexities of language. Here, the mere mention of #sciencebased agitates tubes filled with laboratory animal feces. When taking office, the Trump administration controversially advised how to improve the chances of receiving research funding with the suggestion to avoid seven words and phrases like "vulnerable", "diversity", "entitlement", "transgender", "fetus", "evidence-based", and "science-based". Each lab shaker is accompanied by an etched stainless-steel placard with the corresponding Twitter hashtag that activates it.

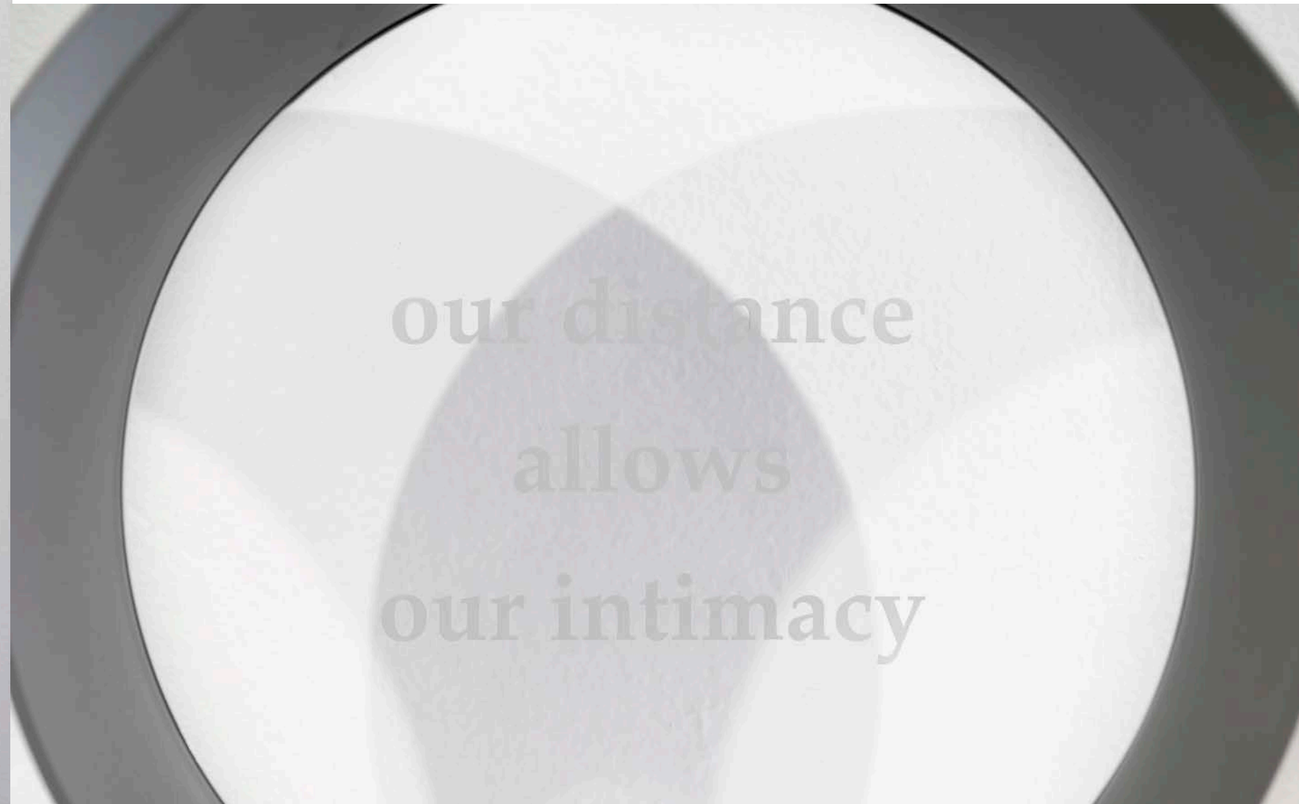




Installation view of microcontrollers for
Remote Entanglements and ***Contested Territories***

Remote Entanglements
2019, wind data networked microcontroller,
fan, infrared sensor, vinyl wall text

Faint text on a wall invites viewers to come close to read, “our distance allows our intimacy.” The phrase refers to the complexities of existence in the biotechnological age, where an understanding of our own bodies and the bodies of others is increasingly mediated by technology. The sculpture blows a breeze in the viewer’s face as they read the text. The speed of the networked fan intermittently adjusts to the wind conditions at the biological laboratory in rural Pennsylvania. The lab provided the artist with wool and feces from the shearing of their llamas for *Contested Territories* and *Lumen*.



Entangled Entities: Interspecies Entanglements in the Biotechnological Landscape

Artist Lecture Presented by
The New Gallery & The Center of Excellence for the Creative Arts
Austin Peay State University
Feb 25, 2021

Laura Splan (b. Memphis, TN) works at the intersections of science, technology, and culture. She creates embodied interactions, tactile experiences and sensory encounters that connect materialities of biotechnology to familiar domains of the everyday. Her conceptually based art practice combines a wide range of media including experimental materials, digital media, and craft processes. Her biomedical themed artworks have been commissioned by The Centers for Disease Control Foundation and Davidson College. Her projects combining digital fabrication and textiles have been exhibited at the Museum of Arts & Design and Beall Center for Art + Technology and are represented in the collections of the Thoma Art Foundation, The Chan Zuckerberg Initiative, and the NYU Langone Art Collection. Her widely acclaimed lace viruses including SARS and HIV (2004) have been exhibited and published around the world. Reviews and articles including her work have appeared in The New York Times, Discover Magazine, Hyperallergic, American Craft, and Frieze. Splan has received research funding from The Jerome Foundation and her residencies have been supported by The Knight Foundation, The Institute for Electronic Arts, Harvestworks, and The Pollock-Krasner Foundation. She is currently a Creative Science member at NEW INC, the New Museum's cultural incubator.

Splan lives and works in Brooklyn, NY.
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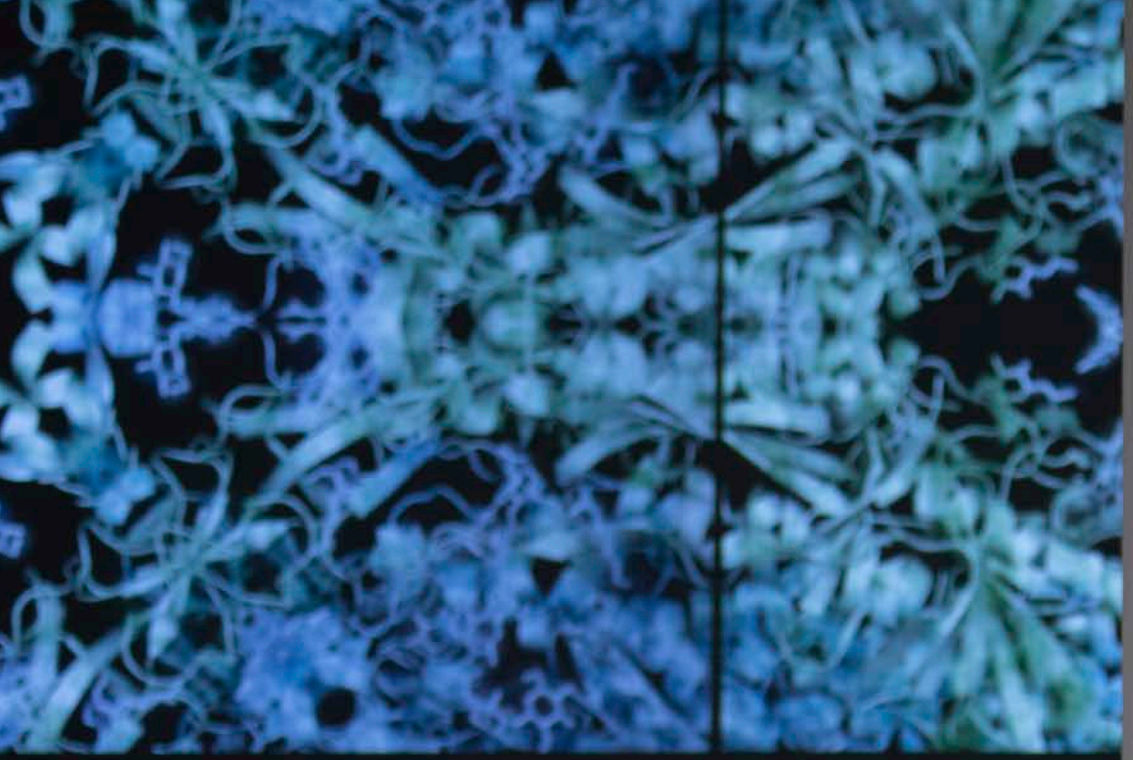

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