

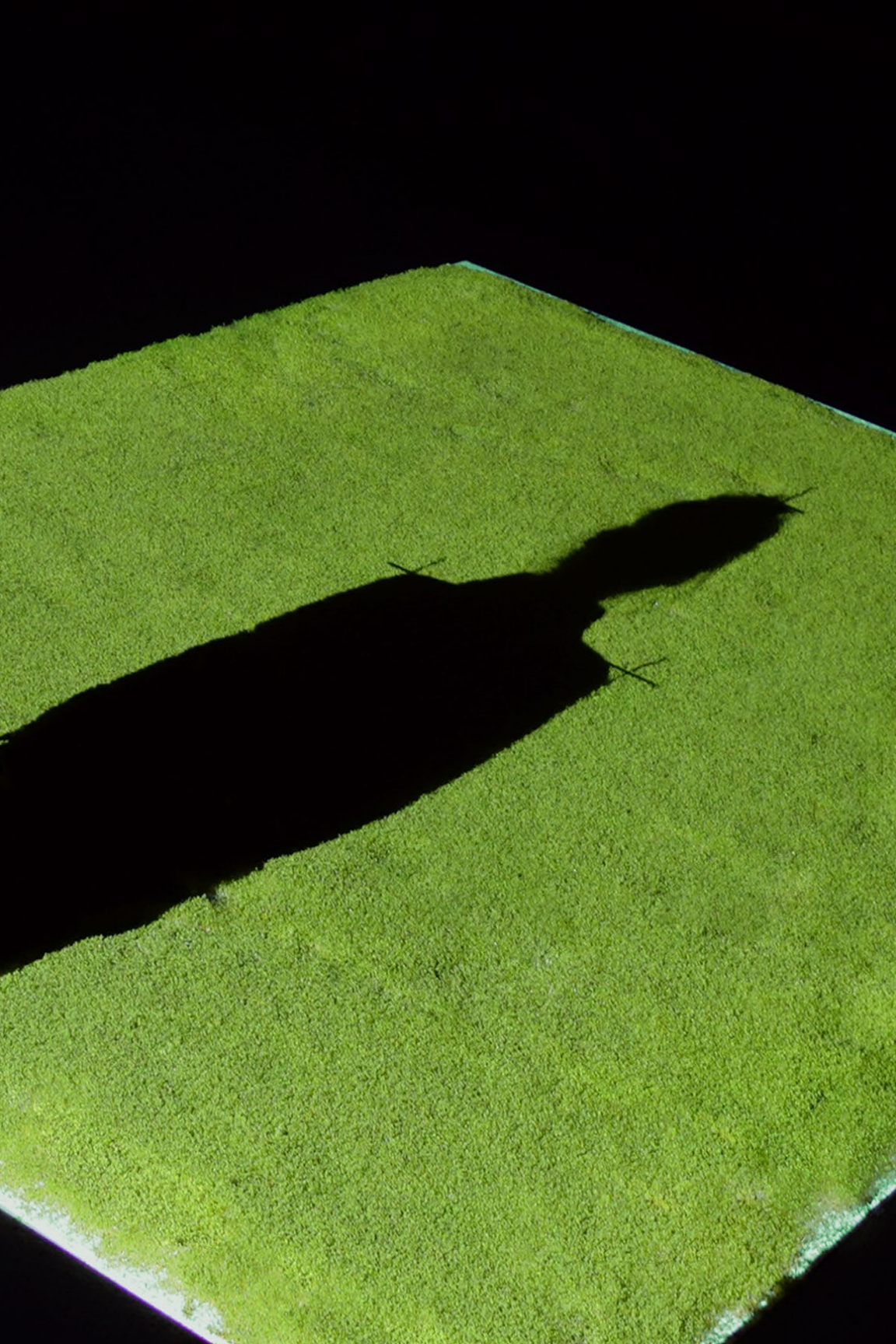


Symbionts: Contemporary Artists and the Biosphere

October 21, 2022–February 26, 2023
Hayden, Reference, and Bakalar Galleries



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Symbionts: Contemporary Artists and the Biosphere brings together fourteen international artists whose work prompts us to reexamine our human relationships to the planet's biosphere through the lens of symbiosis, or "with living."

Symbionts are organisms of different species that are found together and thrive through their interdependent relations. They include mutualists such as the bee and the apple blossom, as well as microbial organisms that circulate in the atmosphere, oceans, and soil to make the oxygen we breathe. Symbionts can also hover as potential predators or bloom as parasites—all forms of entanglement considered by the artists in *Symbionts*.

Engaging living entities such as fungi or bacteria—some of which will transform artworks during the course of the exhibition—the artists in *Symbionts* embody a recent revolution within bioart. Whereas the code-driven works of bioart in the 2000s centered the artist's authorial manipulation of genetic sequences, the diverse practitioners in *Symbionts* are not interested in being masters of code. Instead, they explore what it means to be

interdependent or collaborative, ceding individual human control of an artwork in recognition of our more-than-human relations.

Symbionts foregrounds the fact that the majority of genetic materials in the "human" body are not actually human but thought to be "other": bacteria, fungi, and virions. Likewise, works in the exhibition engage a biosphere dynamically modified by the growth of mushrooms, the blooming of algae, the electrochemical output of bacteria, and the decomposition work of soil and its microorganisms. With experimental practices that blur the boundaries between art and science, while also underscoring the intersections of biological, social, and economic systems, these artists unveil the critical interactions that give shape to our world and the interspecies entanglements that evolve it.

PARTICIPATING ARTISTS

Crystal Z Campbell b. 1980, United States	Alan Michelson b. 1953, United States	Miriam Simun b. 1984, United States
Gilberto Esparza b. 1975, Mexico	Nour Mobarak b. 1985, Egypt	Jenna Sutela b. 1983, Finland
Jes Fan b. 1990, Canada	Claire Pentecost b. 1956, United States	Kiyan Williams b. 1991, United States
Pierre Huyghe b. 1962, France	Špela Petrič b. 1980, Slovenia	Anicka Yi b. 1971, South Korea
Candice Lin b. 1979, United States	Pamela Rosenkranz b. 1979, Switzerland	

Symbionts: Contemporary Artists and the Biosphere is curated by Caroline A. Jones, Natalie Bell, and Selby Nimrod, with research assistance from Krista Alba.

ABOUT THE PUBLICATION



The exhibition is accompanied by an illustrated catalogue-reader designed by Omnivore (Julie Cho, Alice Chung, and Karen Hsu) and copublished with MIT Press. Newly commissioned essays by Caroline A. Jones, Sophia Roosth, Bruce Clarke and Scott F. Gilbert, Leah Aronowsky, and Anna Lowenhaupt Tsing are complemented by excerpts of previously published texts by Evelyn Fox Keller, Lynn Margulis, and Robin Wall Kimmerer. Additional texts on each artist, authored by the exhibition curators, round out the publication, as does an edited roundtable conversation on the themes of symbiosis, reciprocity, and Indigenous epistemologies and a robust glossary of terms. The book is printed on innovative eco papers by Gmund and Favini (with a meadow grass paper cover and separate sections composed of algae, citrus or coffee “mash,” and upcycled leather). It is available for purchase at the MIT Press bookstore in Kendall Square and through various online outlets.

Crystal Z Campbell

Portrait of a Woman I and *Portrait of a Woman II*, 2013
Friends of Friends (Six Degrees of Separation), 2013–14



Friends of Friends (Six Degrees of Separation), 2013–14 (detail). Photo: Matt Vicari

In multimedia works that span film and video, sculpture, live performance, installation, sound, painting, and text, Crystal Z Campbell explores systemic inequities and suppressed histories. Melding history and politics with abstraction, their works in *Symbionts—Friends of Friends (Six Degrees of Separation)* and its related sculptures, *Portrait of a Woman I* and *II*—unpack the complicated legacy of the “immortal” cell line known as HeLa cells.

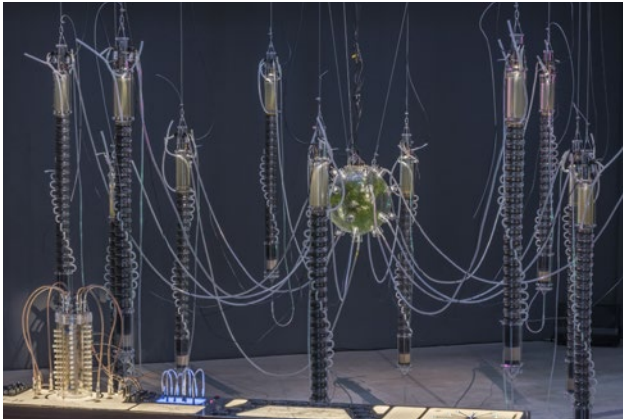
In *Friends of Friends*, a collection of 1940s bacteria slides, yellowed with old glue and spotted with purple staining media, are arranged in a long stripe and luminously backlit. Offering a medical vocabulary, the piece also suggests a certain proximity through its title. Exhibited in tandem are gleaming cubes of glass housed in diminutive wood vitrines. One is engraved with a close-up of mysterious cells that resemble the slides of bacteria (these are, as the label informs, HeLa cells), and etched in fine detail on the other cube is a portrait of the Black American woman whose body first developed

these cancerous cells, Henrietta Lacks. Lacks's story is one that summons painful American histories of race, class, ethics, and the *bios*—both by way of the human papillomavirus that caused Lacks's cervical cancer and by the biological legacy of her cell line (the medical use of her cervical tissue collected without her knowledge or permission has since led to countless bioscientific advances).

Campbell developed the images engraved into these crystal forms during an artist's residency at Amsterdam's Rijksakademie in collaboration with Claude Backendorf (a molecular chemist) and Gerda Lamers (a microscopist) at Leiden University (also in the Netherlands). Campbell's memorials to Lacks continue the artist's sustained interest in traces that bear witness—here, the unique microscopic realities of a cell infected with a virus. Campbell's work also bears witness to Lacks as a Black woman in the Jim Crow-era medical system, charting the loss of her life and contemplating the meaning of her nonconsensual “gift” to science.

Gilberto Esparza

Plantas autofotosintéticas
[Autophotosynthetic Plants], 2013–14



Plantas autofotosintéticas
[Autophotosynthetic
Plants], 2013–14. Photo:
Gilberto Esparza

04 Gilberto Esparza's artworks traverse the domains of engineers, hydrologists, ecological lab scientists, and urban activists. As both a living sculpture and a prototype for bioremediation and renewable energy, *Plantas autofotosintéticas* [Autophotosynthetic Plants] exemplifies his experimental practice and underscores the value of our bacterial symbionts. The hydraulic network of *Plantas autofotosintéticas* consists of twelve microbial fuel cell (MFC) towers that filter local wastewater into a central nucleus where living organisms, such as protozoans, crustaceans, microalgae, and aquatic plants, are sustained by this closed system's operations. A monitoring station adjacent to the suspended sculpture details the contents' origins and allows viewers to see the activity of the fuel cells in real time.

In this work, sewage gathered from eleven sites across greater Boston and one on MIT's campus has been funneled into the MFC towers, which are suspended from the ceiling. Each one contains

wastewater from a specific collection site, and all twelve are mapped in the work's monitoring station. Aside from filtering wastewater, the MFCs (a type of bioelectrochemical technology using bacteria to produce an electric current) also "convert" organic waste into electricity—made visible through the installation's sound and flashes of light in an otherwise dark space. The light then sustains the plants in the central aquarium, which is the "auto-photosynthesis" referred to in the title.

Esparza's installation is also self-monitoring, so when the organic waste initially fed into the MFC towers has been fully "harvested," the hydraulic network can then "feed" the microbial fuel cells, making the entire work a self-contained ecosystem. Insofar as *Plantas autofotosintéticas* illustrates a burgeoning technology that could transform wastewater management and offer a new source of sustainable energy, it also demonstrates how natural processes and bacterial symbionts are an essential part of life systems in equilibrium.

Jes Fan

Systems II, 2018



Systems II, 2018

Trained as a glassblower, Jes Fan creates visually and materially entrancing works that reveal what he terms a "repulsive beauty." His works incorporate melanin, hormones, and bodily excretions ranging from urine and blood to semen; some even bring in useful "aliens" like fungi. In his *Systems* series, Fan grapples with biopolitical constructs by assembling and interrogating chemical compounds that we associate with sex and race.

In *Systems II*, curving, globular orbs of blown glass appear to ooze around the contours of a gridded armature that resembles a cuboid figure. The proportions of the sculpture's lattice-like frame,

however, are not exactly linear, and it is covered by a flesh-toned composite resin that appears to drip and pool, furthering the work's suggestion of organic, corporeal ingredients. Each luminous glass protuberance is filled with a second, translucent, yet softer, fleshy medium—a crystalline silicone—into which Fan has injected synthesized biological (synbio) materials with charged cultural associations: Depo-Testosterone, Estradiol, and melanin.

The first two chemicals are pharmaceutical synthetics of the human sex hormones, testosterone and estrogen. Both stimulate mammalian bodies to develop characteristics

and traits associated with "biological" sex and bear deeply entrenched associations with culturally inscribed constructs of gender: masculine and feminine binaries and the potential for their pharmacological alteration. Melanin, specifically eumelanin, is a naturally occurring brown and black pigment found in many carbon-based life forms. When expressed as physical characteristics on human subjects (e.g., hair and skin color), these substances are taken up by biopolitical systems to racialize and other bodies based on skin color and gender presentation. But by encasing them within shimmering glass, Fan renders both the biological and biopolitical processes inert.

Pierre Huyghe

Spider, 2014



Spider, 2014

Pierre Huyghe has long probed the uncanny, a term used in psychoanalysis to describe the return of repressed relationships. In the context of Huyghe's work in *Symbionts*, the repressed is our human relation with the animal kingdom. The artist seeks to normalize our cohabitation with the creaturely world by creating artworks—often composed of living beings—that jolt us into recognizing omnipresent but sometimes invisible interspecies relationships. While some of his works have engaged these dynamics in outdoor and non-white cube spaces, others have brought certain species (primarily flies, ants, and spiders) directly into the gallery.

Materially simple and matter-of-fact, *Spider* consists of a modest welcoming of common cellar spiders (also known as daddy longlegs) into the Bakalar Gallery. The artist's instructions specify that exhibition staff release twenty living spiders (here sourced from a biological supply

company) into a ceiling corner, where they are temporarily isolated by a triangular panel to encourage them to build webs. Once the panel is removed, the spiders may move freely—or, most likely, migrate elsewhere in the building to find a food source.

Huyghe exposes our human-centric desire to isolate, display, and surveil non-human life-forms, an impulse and mode inherited from Enlightenment projects (and present today in forms ranging from the vitrine and aquarium to the zoo, greenhouse, and, of course, museum). For Huyghe, the point is *not* to introduce creatures that compel disgust or fear. Rather, he aims to simply highlight the symbionts that are already present and thriving among us (such spiders, we must admit, are already in this building), albeit outside our recognition and in spite of our disregard for their existence.

Candice Lin

Memory (Study #2), 2016

5 Kingdoms (Etching), 2015



Memory (Study #2), 2016 (detail). Photo: Ruben Diaz

Candice Lin investigates the margins of history, anthropology, and science in works that span drawing, printmaking, sculpture, textile, and video. Lin's *5 Kingdoms (Etching)*, which also features in the endpapers of the exhibition catalogue for *Symbionts*, depicts the taxonomical categories of the five great phyla of life on earth. (The concept of phyla is vital to evolutionary biologist Lynn Margulis's groundbreaking theories of evolutionary symbiosis. She argued that mutualistic relationships between organisms belonging to different phyla, rather than the Darwinian "survival of the fittest," are what instigates evolution.) In sculptural works, Lin uses living materials, such as fungus or bacteria, as well other biological materials—from opium poppy and tobacco to hissing cockroaches and hungry silkworms—to address interwoven elements of culture, history, race, and gender. She has also engaged living processes such as fermentation or distillation to emphasize aspects of material transformation.

Memory (Study #2) marks one of Lin's first uses of distilled "communal piss" to create and nurture an artwork. The work consists of a porous red ceramic container that

holds a plastic bag, inside of which grow lion's mane mushrooms—shaggy, edible fungi used in traditional Chinese medicine and thought to protect against memory loss. The artist's instructions on how to nourish the sculpture include spraying it with a fine mist of nutrient-rich, distilled urine, volunteered by the staff presenting the work.

When exhibited in a museum context, some have noted the nuanced ways that *Memory (Study #2)*, by virtue of its collective making, enacts institutional critique (a form of conceptual art that reflects on the role of museums). Also relevant to this line of thinking: lion's mane is a saprophytic mushroom—meaning it lives off of dead organisms—which provokes questions around whether the museum is in a state of decomposition. There are important features of mutualism in the work as well: the fungi's relationship to the liquid that feeds it is communal. And the organism that results from Lin's redistribution of nutrients is not only edible but also believed to have health benefits. What, the work asks, might a fungus, collectively nourished from our waste, help us to remember?

Alan Michelson

Wolf Nation, 2018



Wolf Nation, 2018 (still)

Alan Michelson's moving-image installations, public sculptures, and recent augmented-reality pieces speak to entangled histories of site, ecology, and human interventions on land that bears the scars of settler colonialism and capitalist extraction. Importantly, Michelson's works make visible a tension between his relational approach to site and subject (we are intimately connected to, not other from, the world around us) and the apparatuses and operations of settler-colonial vision. In *Wolf Nation*, for instance, the artist utilizes and upends mechanical imaging and video surveillance technologies to offer a potent filmic meditation that relates the present-day eradication of the red wolf to the violent displacement of the Lenape Munsee people (also known as the Wolf Clan).

Pixelated webcam footage of a group of red wolves enclosed in a sanctuary in New York State is enlarged and altered to produce a panoramic, widescreen projection overlaid with a purple stain. The intense color and elongated image link the work

to the design of wampum belts—a vital part of Haudenosaunee culture, made of purple and white quahog shells, and used by Native nations in matters of diplomacy and history recording. This gesture underscores the existential bonds between the endangered species and their Lenape Munsee human kin.

Accompanied by an elegiac soundscape of baying wolves, orchestrated by White Mountain Apache composer and artist Laura Ortman, much of Michelson's cinematic portrait conveys an aesthetic of stillness. The surveillance webcam is stationary, and the wolves, oblivious to its presence, are largely at ease. Eventually, all but one departs from view, at once a reclamation of the wolves' autonomy from a mechanical gaze and a forceful reminder of their vulnerability. With *Wolf Nation*, the artist reminds us, in his words, of the urgent need to "rethink our current political, economic, social, and environmental models," foregrounding how Indigenous practices and traditional knowledge provide alternatives.

Nour Mobarak

Reproductive Logistics, 2020

Sphere Study 2 (Pure Study), 2020

Sphere Study 3 (Failed Sphere), 2020

Sphere Study 4 (Dilettante Politic), 2020



Sphere Study 2 (Pure Study), 2020. Photo: David Morrison

A multimedia storyteller, Nour Mobarak creates polyphonic, visceral, intimate compositions. Bodily substances and a range of living processes are embedded in her work, and fungi have become a beloved collaborator. Mobarak's *Sphere Studies* are composed of turkey tail fungus (*Trametes versicolor*) that must negotiate its containment within vinyl balls: each orb is filled with spores and wood pellets, then doused with water and supplied with oxygen. The fungus fruits out of holes strategically bored in the balls' vinyl surfaces. Chasing a "synthesis of the toxic and organic," Mobarak marries mycelium with plastic while playing with a dynamic of fertilization.

Reproductive Logistics, a crusty self-portrait in mycelium, mucilage, and mixed media, was made to fit a repurposed art-shipping crate, itself a found object. Beyond this direct reference to the

"logistics" of fine art transport, the work's eponymous "logistics" also appear in a color-coded chart of Mobarak's former lovers, which is submerged in the inert fungal matter. The other material circumstances at play are the artist's would-be biological futures. Mobarak embedded the DNA-carrying material (hair and sperm) of these "past potential impregnators" in the piece, poking fun at quantifying the external circumstances—and logistics—that have shaped her ability to reproduce, both biologically and as an artist. When the mycelium was living, it decomposed these embedded materials as well as a watercolor self-portrait, which is still faintly visible. The fungus involved, Mobarak notes, shifts between self-reproduction and sexual reproduction in response to environmental adversities, making it an ideal allegorical substance or surrogate (laborer) for the artist herself.

Claire Pentecost

soil-erg, 2012



soil-erg, 2012

Claire Pentecost's artistic practice has developed alongside her work as a thinker, educator, ecological activist, and citizen scientist. A member of Critical Art Ensemble—an artist collective that, in the 1990s, brought the tools of institutional critique to everyday industrial agriculture, violating the proprietary knowledge of firms such as Monsanto by allowing art-goers access to tools that could detect genetic modifications in their food—she is careful to identify herself as a “public amateur” when speaking about her work. Focusing her attention on the capitalist relationship to land, and to soil, in particular, Pentecost's practice is central to an understanding of a new turn in bioart marked by a consideration of deep entanglements between living systems and economic ones.

With her foundational installation *soil-erg*, Pentecost sought, in her words, to “think beyond the seed” and its “easily commodifiable package,” instead proposing “a new system of value based on ... living soil,” which is far harder to commodify. The work takes soil's nutrient “riches” and converts them—with considerable irony—into the abstraction of currency.

soil-erg features a suite of drawings, each an oversized paper bill of an eponymous fictive currency, displayed alongside sculptures made of compressed soil in the form of ingots that rest in stacks on tables gleaming with gold leaf. Each ingot and bill corresponds to a single unit of the *soil-erg*, a tender Pentecost bases on the real value of soil.

Rather than dead presidents and other heads of state, the artist's paper money compositions celebrate nonhuman energy workers who convert waste into humus (like earthworms, beneficial fungus, amoebae, and arthropods such as soil mites) as well as human agricultural reformers and ecologically minded philosophers and artists. Considering them all teachers of Gaia, Pentecost renders her homages to these varied soil workers in graphite, puddled clays, compost, and watery brown dirt. The work not only imagines a full-scale revolution in the planetary economy but also, importantly, serves as a love letter to the planetary symbionts as well as the sustained social practices that comprise the precious resource of good, living soil.

Špela Petrič

Confronting Vegetal Otherness: Skotopoiesis, 2015



Confronting Vegetal Otherness: Skotopoiesis, 2015.
Photo: Miha Tursic

Špela Petrič arrived at art making after earning a doctoral degree in biology. Spanning multimedia installation, performance, and micro-performance (in vitro encounters that occur on the cellular level), Petrič's works pick apart how human-centered principles guide the production of scientific knowledge while also confounding perceived divides between human and nonhuman agents. *Confronting Vegetal Otherness: Skotopoiesis* is the first iteration of a tripartite performance “opus” with which Petrič sought to achieve “plant-human intercognition.” A two-channel video documenting this durational performance—which draws from legacies of feminist body art practices as much as from Petrič's scientific expertise—is on view in *Symbionts*.

In the span of twenty hours over two consecutive days (separated by eight hours of rest), Petrič stood motionless, facing a rectilinear bed of germinating cress. Backlit by a powerful projected

light source in an otherwise dim space, her figure cast a shadow on the maturing greens. True to the performance's subtitle, *Skotopoiesis*, meaning “shaped by darkness,” the absence of light created by the artist's body is a form of communication intelligible to the plants. Unable to photosynthesize easily, the cress in shadow instead produced auxin, a hormone that stimulates the lengthening of their stems to aid in reaching the light required for survival. As the tract of cress obscured by Petrič's shadow grew spindly and pale, and the sections exposed to light erupted in a lush green, the artist's physicality also shifted: fluid loss in her spinal discs from the cumulative gravitational force of long hours spent on her feet caused her to shrink, temporarily. At the performance's close, the cress “expressed” an imprint of the exercise: Petrič's penumbral silhouette embossed at its center as a rash of yellowed sprouts. Unwilling to make waste of such nutrient-rich and perfectly edible vegetation, the artist suggested viewers consume it.

Pamela Rosenkranz

She Has No Mouth, 2017



She Has No Mouth, 2017. Photo: Timo Ohler

Pamela Rosenkranz's works query objects of desire, mind-body separation, and the relationship of humans to the increasingly unnatural "natural world." Skeptical of a human-centric worldview, she often uncovers symbiotic relations and reveals how external or neurochemical forces can be responsible for certain emotions or desires. *She Has No Mouth* is a conceptually rich but materially simple work consisting of an LED-lit circle of perfume-infused sand. Its title (a sly reference to Hello Kitty), media, and olfactory component (the just-noticeable scent of Calvin Klein Obsession for Men) introduce a fascinating story about toxoplasmosis and the power of invisible symbionts to compel interspecies kinship and desire. Toxoplasmosis is a parasitic disease caused by a single-celled protozoan called *Toxoplasma gondii*. The main hosts of *T. gondii* are cats, but mice, humans, and other mammals are frequently intermediary hosts. (The use of sand in the work also loosely references a cat's litter box, a primary site of transmission.)

Rosenkranz was interested in recent studies showing that this parasite can effectively influence the behavior of its temporary hosts—blocking mice from fearing the odor of cats, or even causing dopamine surges that leave mice fatally attracted to their predators—to get back to its preferred feline host. Once the mouse is ingested, the microbe can complete its reproductive cycle and sexually reproduce. Put simply, *T. gondii* are symbionts living their fullest life.

This parasitic dynamic becomes more interesting when we consider that toxoplasmosis in humans is extraordinarily common: 30 to 50 percent of the world's population is believed to have been exposed or

have latent infections. Most people show no signs or symptoms, but toxoplasmosis may have a role in how human desire can be influenced by both active parasites and the use of animal pheromones. For example, many popular perfumes, including the fragrance used in this work, incorporate a synthetic version of a pheromone sourced from the African civet.

Although it's only since the 1970s that scientists have known about the prevalence of toxoplasmosis in humans, civet musk is one of the world's oldest perfume ingredients and continues to appeal to humans—and perhaps especially those harboring *T. gondii*. In exposing "the neurobiological basis of perception and its effects, such as attraction," Rosenkranz tells a story of how a mutualism of one sort (the *T. gondii* parasite) can neurologically determine other kinships, either with humans cloaked in the right musk or simply with one's beloved tabby.

Miriam Simun

Interspecies Robot Sex, 2022

The Sound of a Hive Giving Birth, 2022

The Sound of a Bumblebee Refusing to Colonize an Artificial Nest, 2022



Interspecies Robot Sex, 2022 (still)

Miriam Simun takes a multi-sensorial approach to art that engages ongoing ecological catastrophes. A bricolage of documentary approaches, performative practices, and speculative "biofictions," Simun's unruly projects encompass workshops, drawings, writings, videos, and sculptural objects. They cohere around the idea that biological systems (and biotechnical projects) are shaped by social, legal, and economic forces and seek to ground both viewers and the artist as sensing, desiring subjects.

Interspecies Robot Sex, an impressionistic, documentary-style film, homes in on two responses to the widespread collapse of bee colonies. (A pair of related works in beeswax form a site-specific installation in the window of the Hayden Gallery.) Making visible connections between living systems and economic forces, the film constructs a portrait of two parallel biotechnologies: the hand-pollination

of pear trees in the industrial orchards in Dangshan County, in China's Anhui province, and the research and development at Harvard's Wyss Institute for the "RoboBee"—an "autonomous flying Microrobot" with potential uses in crop pollination as well as inevitable military applications.

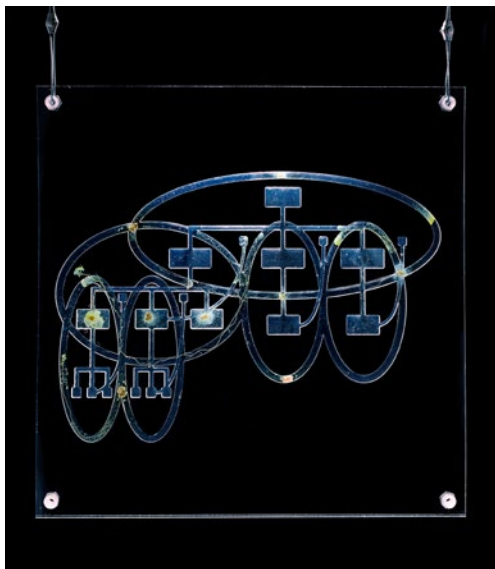
While not one single (real) honeybee appears on-screen, the specter of their presence is underscored by the film's three-channel audio (which

features field recordings of bees routed to audio transducers embedded in the seating) as well as the tactile window installation. *The Sound of a Bumblebee Refusing to Colonize an Artificial Nest* is composed of a wavy curtain of beeswax scented with lemongrass oil (known to attract honeybees) applied in drips and smears onto the plate glass window and studded with bee pollen, dried flowers, and fruits found locally in Massachusetts. Hanging nearby, *The Sound of a Hive Giving Birth*, a natural lightbox made of reused Plexiglas, encases beeswax mixed with Sichuan honey, Ya Li pear pollen, and the dried blossoms of a variety of pear cultivars that the artist collected in Dangshan. Together, they form a haptic and olfactory "material portrait" of colony collapse from biomatter that connects the various locations in *Interspecies Robot Sex* and serve as reminders that honeybees in both locations are under threat.

Jenna Sutela

From Hierarchy to Holarchy, 2015, and
Minakata Mandala, 2017

Gut Flora (Cerebrobacillus), *Gut Flora (Glossococcus)*, and
Gut Flora (Lactogalaxius), all 2022



From Hierarchy to Holarchy, 2015. Photo: Def Image

Active in music and performance as well as visual art, Jenna Sutela is drawn to liminal states, and much of her work is about sensing and communicating beyond language. This has led her to explore “alien” forms of intelligence through artistic “collaborations” with bacteria, fungi, and the artificial neural nets of machine learning.

Minakata Mandala and *From Hierarchy to Holarchy*, Sutela’s luminescent, maze-like works featuring the social amoeba *Physarum polycephalum*, are comprised of thin sandwiches of Plexiglas containing the many-headed organism. Using its collective spatial intelligence, the amoeba navigates through CNC-carved channels in the acrylic material in search of carefully positioned oats. The images that form each maze ponder two

different collectives: one engraving derives from corporate chain-of-command charts, the other from a mandala found in her research into the archives of noted Japanese mycologist and ecologist Minakata Kumagusu. The pieces are installed in low lighting to create ideal conditions for the living inhabitant to flourish, and when cued by a motion sensor, a spotlight illuminates each work to reveal the bright yellow *Physarum polycephalum*. Slowly traversing the crevices, the organism’s shifting physicality is shaped by the organizational structures the mazes allude to.

By contrast, Sutela’s *Gut Flora* reliefs suggest domestic economies and are earthy and comforting—except for the uncanny, digitally rendered motifs scanned from flower arrangements the artist received as gifts after the birth of her second child. Sutela continues to explore collectives, here within the ostensibly singular body of a human, beginning with the eponymous “gut flora” of the human microbiome. By adding mammalian dung to the clay for these reliefs, she also references the ancient practice of fecal therapy that has only recently become accepted by contemporary medicine. Though the clay is fired and, thus, completely inert, one could imagine its biotic legacy to be reanimated by the breast milk glazing that is applied. Layering these reliefs with the nutrient-rich, microbially diverse proteins of breast milk allows the sheen of dried casein to produce a record of our entangled thriving.

Kiyan Williams

Ruins of Empire II, 2022



Sentient Ruin 1, 2021 (detail). Photo: Laura Findlay

Kiyan Williams works in sculpture, performance, and video to navigate and explore intersections between Black life, ecology, and US society. Soil, a primary material for Williams, embodies the complex histories of a place (as in its *terroir*) while also representing human and nonhuman life forms and the varying connotations that have been mapped onto people of marginalized race and class identities. Williams describes collaborating “with abject materials: soil, architectural debris, fungi.” But they are also mediums that yield communion with others: “[I] listen to the stories they hold, unearth the voices of those whose names are unrecorded in the documents we use to construct traditional histories ... observe how they forge

community.” While often working in performance, Williams has recently produced sculptural works that subvert conventions of monumentalism: earthen statues pose as crumbling pillars (*Sentient Ruins*, 2021), and figures that look as if they should be cast in bronze are instead rendered in soil and mud (*Ruins of Empire*, 2022).

Ruins of Empire II expands on recent work of the same title that took as its muse the Statue of Freedom—a figure adorning the top of the US Capitol building, which, like the building itself, was constructed by enslaved laborers. For this second iteration,

Williams isolated the statue’s head and cast it in mycelium, producing a death mask-like form of this potent icon. The artist also sought to reference a region in Louisiana known as Death Valley, an area along the Mississippi River where former plantations were converted into petrochemical plants that have polluted the air, water, and soil of predominantly Black communities descended from enslaved laborers. Alluding to the crude oil that permeates the land, suffocating the life it would otherwise sustain, the sculpture’s IV component drips a petrol-like liquid onto the decomposing face, giving form to the devastating symbiotic histories of chattel slavery, settler colonialism, and environmental extraction.

Anicka Yi

Living and Dying in the Bacteriacene, 2019



Living and Dying in the Bacteriacene, 2019

A formative practitioner in the new symbiotic turn of bioart, Anicka Yi creates sometimes-spectacular artworks that fuse machinic and biological elements. Interested in destabilizing all manner of binaries, including those between biological (living) and technological (nonliving) systems, Yi employs speculation and witty fictions to imagine kinship with machines and reveal what she calls “a biopolitics of the senses.”

Living and Dying in the Bacteriacene presents human entanglements with non-human and nonliving agents in an initially familiar guise of domestication: a wall-mounted aquarium (its proportions referencing the size and scale of a painting)

hosts a supposed “contaminant,” the freshwater algae *Spirogyra*. Considered a plague in human-tended agricultural ponds and hobbyist aquaria, the algae, in this case, is introduced on purpose. It wafts and drapes over geometric 3-D-printed elements illuminated from the top, creating the effect of a shallow, if dramatic, stage for the single-celled organism to colonize Yi’s machined epoxy fretworks. Aggregating as microscopic units that form filaments and mats, the *Spirogyra* metabolize and secrete oxygen, allowing them to be buoyed up to the light, where they can capture the available full-spectrum energy the artist thoughtfully provides.

Typical pond ecologies find filamentous algae such as *Spirogyra* blooming with agro- and lawn fertilizer and animal waste runoffs, and the resulting mats and meshes become a food source for finfish

and waterfowl. None of those fit in Yi’s elegant five-inch-thick luminous box. Still, we could imagine fellow travelers—hard-to-see microscopic cyanobacteria or planktonic crustaceans such as *Daphnia pulex*—finding sanctuary and food on the fuzzy algal threads. *Living and Dying in the Bacteriacene* provides another symbiotic clue in the pattern of the epoxy sculpture within; seemingly modeled on compacted bubbles in this watery environment, it reminds us that algae are planetary symbionts. They participate as phytoplankton producing the oxygenated atmosphere in which we live, contributing to the ecosystem of the Bacteriacene and the biosphere it rules.

WORKS IN THE EXHIBITION

Crystal Z Campbell

Portrait of a Woman I and Portrait of a Woman II, 2013

Upcycled wood, MDF, custom 3-D laser-cut solid glass cubes of HeLa Cells (image of HeLa cells made with Dr. C. Backendorf and G. Lamers) and of Henrietta Lacks
35 × 6 × 6 in. (89 × 15.2 × 15.2 cm) each
Courtesy the artist

Crystal Z Campbell

Friends of Friends (Six Degrees of Separation), 2013–14

Vintage collection of bacteria slides ca. 1940s, steel, LED strips, car paint, Plexiglas
Dimensions variable
Courtesy the artist

Gilberto Esparza

Plantas autofotosintéticas [Autophotosynthetic Plants], 2013–14

Polycarbonate, silicon, stainless steel, graphite, electronic circuits, local wastewater, natural pond water with microalgae and microorganisms, plants, shrimp, fish, sound
157 × 157 in. (400 × 400 cm) overall
Courtesy the artist

Jes Fan

Systems II, 2018

Composite resin, glass, melanin, Estradiol, Depo-Testosterone, silicone, wood
52 × 25 × 20 in. (132 × 63.5 × 50.8 cm)
Collection Carlos Marsano

Pierre Huyghe

Spider, 2014

Living spiders
Dimensions variable
Courtesy the artist and Esther Schipper, Berlin

Candice Lin

Memory (Study #2), 2016

Distilled communal piss from people hosting the work, glass jar, lion’s mane mushrooms in substrate, plastic, brass sprayer
11 × 12 × 15 in. (28 × 30.5 × 38.1 cm)
Courtesy the artist and François Ghebaly, Los Angeles

Candice Lin

5 Kingdoms (Etching), 2015

Hard ground etching printed on Kitakata paper
19 × 18½ in. (48.5 × 47 cm)
Courtesy the artist and François Ghebaly, Los Angeles

Alan Michelson

Wolf Nation, 2018

Video, color, sound, 9:59 min.
Whitney Museum of American Art, New York
Purchase, with funds from the Director’s Discretionary Fund
2019.327

Nour Mobarak

Reproductive Logistics, 2020

Trametes versicolor, apple wood pellets, kraft paper, watercolor, hair, sperm, acrylic, resin
65½ × 75 × 12½ in. (166.4 × 190.5 × 31.8 cm)
Courtesy the artist and Miguel Abreu Gallery, New York

Nour Mobarak

Sphere Study 2 (Pure Study), 2020

Acrylic, ink, *Trametes versicolor*, wood
11¾ × 13½ × 13 in. (29.8 × 34.3 × 33 cm)
Delgado/Olsen Family Collection

Nour Mobarak

Sphere Study 3 (Failed Sphere), 2020

Vinyl, *Trametes versicolor*, wood
11¼ × 13 × 14 in. (28.6 × 33 × 35.6 cm)
Courtesy the artist and Miguel Abreu Gallery, New York

Nour Mobarak

Sphere Study 4 (Dilettante Politic), 2020

Trametes versicolor, wood
14 × 18¼ × 18½ in. (35.6 × 46.4 × 47 cm)
Courtesy the artist and Miguel Abreu Gallery, New York

Claire Pentecost

soil-erg, 2012

Selection of graphite and compost drawings on 100 percent rag paper, two tables with glass panels and gold-leaf varnish, twenty soil ingots
Installation dimensions variable; matted drawings: 15¾ × 18½ in. (39 × 47 cm) each
Eli and Edythe Broad Art Museum, Michigan State University, partial gift of the artist and partial MSU purchase, funded by the Emma Grace Holmes Endowment, 2021.5.1-64

Špela Petrič

Confronting Vegetal Otherness: Skotopoiesis, 2015
Two-channel HD video installation
Dimensions variable
Courtesy the artist

Pamela Rosenkranz

She Has No Mouth, 2017
Sand, fragrance, LED lights, light controls
Dimensions variable
Courtesy the artist; Miguel Abreu Gallery, New York; Karma International, Zurich; and Sprüth Magers

Miriam Simun

Interspecies Robot Sex, 2022
HD video installation, approx. 16 min.
Courtesy the artist

Miriam Simun

The Sound of a Hive Giving Birth, 2022
Beeswax, lemongrass essential oil, Sichuan honey, *Pyrus pyrifolia* (Ya Li pear) pollen, dried *Pyrus nivalis* (Cangxi snow pear) flowers, dried *Pyrus calleryana* (Bradbury pear) flowers, dried *Pyrus communis* (Green Anjou pears), acrylic
24 × 24 × 1¼ in. (60.96 × 60.96 × 3.1 cm)
Courtesy the artist

Miriam Simun

The Sound of a Bumblebee Refusing to Colonize an Artificial Nest, 2022
Beeswax, lemongrass essential oil, bee pollen, dried flowers, dried fruits
180 × 99 in. (457.2 × 251.46 cm) approx.
Commissioned by MIT List Visual Arts Center
Courtesy the artist

Jenna Sutela

From Hierarchy to Hierarchy, 2015
Physarum polycephalum, agar, oats, CNC engraving on Plexiglas
19¾ × 19¾ × ½ in. (50 × 50 × 1.5 cm)
Courtesy the artist

Jenna Sutela

Minakata Mandala, 2017
Physarum polycephalum, agar, oats, CNC engraving on Plexiglas
19¾ × 19¾ × ½ in. (50 × 50 × 1.5 cm)
Courtesy the artist

Jenna Sutela

Gut-Flora (Cerebrobacillus), 2022
Fired mammalian dung glazed in breastmilk
35¾ × 23¾ in. (90 × 60 cm)
Commissioned by V-A-C
Courtesy the artist

Jenna Sutela

Gut Flora (Glossococcus), 2022
Fired mammalian dung glazed in breastmilk
35¾ × 23¾ in. (90 × 60 cm)
Commissioned by V-A-C
Courtesy the artist

Jenna Sutela

Gut Flora (Lactogalaxius), 2022
Fired mammalian dung glazed in breastmilk
35¾ × 23¾ in. (90 × 60 cm)
Commissioned by V-A-C
Courtesy the artist

Kiyan Williams

Ruins of Empire II, 2022
Steel, mycelium, plastic tubing, and mixed media
50 × 50 in. (127 × 127 cm) approx.
Commissioned by MIT List Visual Arts Center
Courtesy the artist and Lyles & King, New York

Anicka Yi

Living and Dying in the Bacteriacene, 2019
Powder-coated steel with inset acrylic vitrine, water, 3-D-printed epoxy plastic, filamentous algae
33 × 25 × 5½ in. (83.8 × 63.5 × 14 cm)
Courtesy the artist and Gladstone Gallery, New York

PUBLIC PROGRAMS

All List Visual Arts Center programs are free and open to the public. Registration is required. For more information about events and programs related to this exhibition, please visit:

listart.mit.edu/calendar



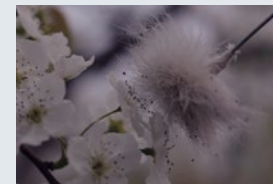
Syn / \ Sym: Biology in Art & Design
Saturday, November 5, 2022, 2:00 – 3:30 PM
Curator Discussion with Caroline A. Jones, William Myers, and Jens Hauser
In-person and livestreamed with closed captions



Curator Tour: The Microbial, Fungal, and Chemical
October 27, 5:30 PM
In-person



Curator Tour: Societal and Ethical Impact of Biosciences
December 9, 12:15 PM
In-person



Chlorophilia / Chlorophobia
Thursday, February 2, 2023, 6–7:30 PM
Panel Discussion with Alan Michelson, Špela Petrič, and Miriam Simun
In-person and livestreamed with closed captions



Spotlight Talks
Bi-weekly October–February
In-person

LEARN MORE

Feldman, John, dir. *Symbiotic Earth: How Lynn Margulis Rocked the Boat and Started a Scientific Revolution*. New York: Hummingbird Films, 2017.

Gilbert, Scott F., Jan Sapp, and Alfred I. Tauber. "A Symbiotic View of Life: We Have Never Been Individuals." *Quarterly Review of Biology* 87, no. 4 (December 2012): 325–41. doi: 10.1086/668166.

Haraway, Donna J. *Staying with the Trouble: Making Kin in the Chthulucene*. Durham, NC: Duke University Press, 2016.

Kimmerer, Robin Wall. *Braiding Sweetgrass: Indigenous Wisdom, Scientific Knowledge and the Teachings of Plants*. Minneapolis: Milkweed Press, 2013.

Margulis, Lynn. *Symbiotic Planet: A New Look at Evolution*. New York: Basic Books, 1998.

Pentecost, Claire. "Outfitting the Laboratory of the Symbolic: Toward a Critical Inventory of Bioart." In *Tactical Biopolitics: Art, Activism, and Technoscience*, edited by Beatriz da Costa and Kavita Philip, 107–23. Cambridge, MA: MIT Press, 2008.

Sheldrake, Merlin. *Entangled Life: How Fungi Make Our Worlds, Change Our Minds and Shape Our Futures*. New York: Random House, 2020.



Learn more about the work on view and access a visual descriptor tour through the Bloomberg Connects application.

THANK YOU

Exhibitions are always team efforts, but this show has introduced some truly novel challenges. We are grateful to the entire List Center team and want to extend a special acknowledgment of the efforts of Tim Lloyd, John Osorio-Buck, and Ariana Webber in stewarding the presentation—and growth—of these unusual works of art in our spaces. We are also grateful to the installation crew, Adric Giles, Justin Kedl, Lux Lucidi, and Josh Rondeau, for their labor and care in mounting the exhibition, and Visitor Services staff Lucy Chen, Erica Gaeta, Kristin Johnson,

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ACCESSIBILITY

The List Visual Arts Center strives to provide an accessible experience for all our visitors. For questions about program access, please email: listinfo@mit.edu

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COMING SOON

List Projects 26: Alison Nguyen

February 23–June 25, 2023

Sung Tieu: Civic Floor

April 5–July 30, 2023

Lex Brown: Carnelian

April 5–July 30, 2023

Front cover:
Candice Lin, *Memory (Study #2)*, 2016 (detail).
Photo: Ruben Diaz

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