

Artspace

Slime Mold, Glow-in-the-Dark Bunnies, and "Victimless Leather": 9 BioArtists You Should Know

By Artspace Editors

FEB. 7, 2019



Installation shot from "Life is Cheap" by Anicka Yi (2017), image via the Guggenheim

Imagine it's the nineties. The internet is beginning to roll out as a consumer product. Scientists are experimenting on human tissues and DNA sequencing. It will soon be a new millennia. Techno-utopianism is running high, and with it, the hope that science can be used to positively alter, and, in some cases, even replace, the human body. This combination of optimism and new technology inspired BioArt, a movement in which artists began working with materials such as live tissues, bacteria, and living organisms. Here, we look at nine BioArtists whose work challenges our understanding of "life" and "technology."

JOE DAVIS



Call Me Ishmael by Joe Davis (2008), image via *Discover Magazine*

In the late 1980s, artist Joe Davis, collaborating with molecular biologist Dana Boyd, inserted a non-biological DNA message into a DNA coding sequence for the very first time. In a piece that would eventually be known as *Microvenus*, Davis and Boyd encoded a binary representation of an ancient Germanic alphabet letter (a rune) representative of a female goddess into a strand of *E. Coli*'s genetic sequence. According to *CLOT* magazine, the rune "was a response to the Pioneer plaques designed by astronomers Frank Drake and Carl Sagan that were sent aboard Pioneer spacecraft with the intention of being intercepted by extraterrestrial life." The plaque showed the location of earth within the solar system, life on earth, and human forms. Annoyed at the lack of detail in the female figures compared to the male figures, Davis "used *Microvenus* as a counter-argument for how we, as a species, outwardly

Currently a research affiliate in the Department of Biology at MIT and the George Church Laboratory at Harvard Medical School, Davis is currently working on encoding the 50,000 pages of the English Wikipedia into bacteria which will then be transferred into apple trees. Previous projects include a radio system made of protein from marine sponges and *Call Me Ishmael* (2008), a lightning rod tower which Davis constructed in memoriam for victims of Hurricane Katrina.

EDUARDO KAC

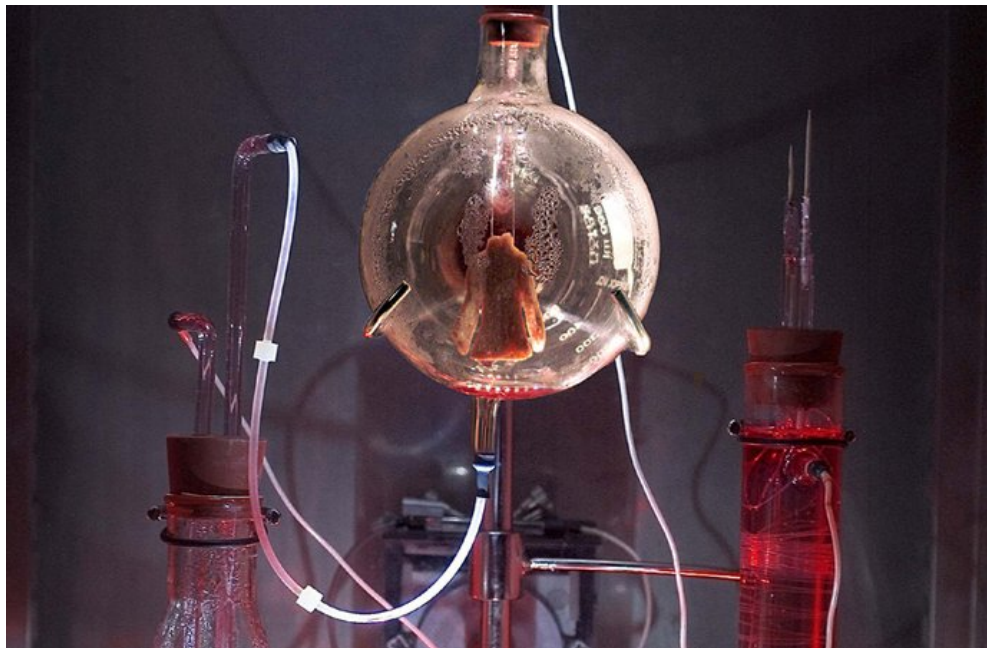


GFP Bunny by Eduardo Kac (2000), image via *Dazed*

In *Natural History of an Enigma* (2003-2008), Eduardo Kac's best known work, he merged his DNA with that of a petunia. He named the plant *Edunia*, a combination of "petunia" and his own nomenclature. As the artist wrote on his website, "The *Edunia* has red veins on light pink petals and a gene of mine is expressed on every cell of its red veins, i.e., my gene produces a protein in the veins... The result of this molecular manipulation is a bloom that creates the living image of human blood rushing through the veins of a flower." The aim of this piece, said Kac, was to show the public how closely human beings resemble non-human beings—not just animals like apes and dogs, "with which it is possible to communicate directly," but flowers as well.

Born in Brazil in 1962 and widely regarded as the father of BioArt, a term he coined in the 1990s, Kac moved to the U.S. to attend the School of the Art Institute of Chicago. After receiving his MFA in 1990, he began doing works that combined technology and animals, such as *Essay Concerning Human Understanding*, which allowed a canary in Kentucky and a plant in New York City to converse via telephone. In his perhaps most controversial work, *GFP Bunny* (2000), Kac combined jellyfish and rabbit DNA to genetically engineer a bunny that would glow green under blue light. Bioethicists accused him of playing God, to which Kac responded that BioArt must be generated "with great care and with a commitment to respect, nurture, and love [towards] the life thus created."

ORON CATTS AND IONAT ZURR



Victimless Leather by Oron Catts and Ionat Zurr (2004), image via the Tissue Culture and Art Project website

In 1996, Oron Catts and Ionat Zurr founded the Tissue Culture and Art Project. In revisiting their old website, perhaps the most shocking thing is not the "victimless leather" or the "disembodied cuisine" (the first steak was grown from prenatal sheep cells) but the low-res Y2K-styled layouts:

blurry artist images and a dated self-confidence—the “about” section opens with a manifesto: "We are investigating our relationships with the different gradients of life through the construction/growth of a new class of object/being... These are parts of complex organisms which are sustained alive outside of the body and coerced to grow in predetermined shapes.”

Spring boarding off then-new experiments in tissue culturing, Catts and Zurr created works such as *Disembodied Cuisine* (2003), which served “victimless meat,” and *Victimless Leather* (2004), in which, per their website, was “grown from immortalised cell lines which are cultured and form a living layer of tissue supported by a biodegradable polymer matrix in the form of a miniature stitch-less coat-like shape.” The result is weirdly adorable. In 2000, Catts and Zurr founded SymbioticA in conjunction with the University of Western Australia’s School of Anatomy and Human Biology, which operates as a hub for scientists, artists, and academics to work together.

MARTA DE MENEZES



A butterfly from (*Nature?*) by Marta de Menezes (1999), image via the artist's website

In 1999, Marta de Menezes created her first piece of BioArt, (*Nature?*), in which she generated butterflies with human-designed wing patterns. Using a thin needle hooked up to a heat generator, de Menezes slightly altered the wing development of the butterflies while they were still in their cocoons. These changes did not occur at the genetic level and so were not passed on to the butterfly offspring. Instead, the project lived and died when the insects did. To quote the artist, “The new patterns are something that never existed before in nature, and that rapidly disappear from nature not to be seen again. These artworks literally live and die. They are an example of art with a lifespan—the lifespan of a butterfly.

STELARC

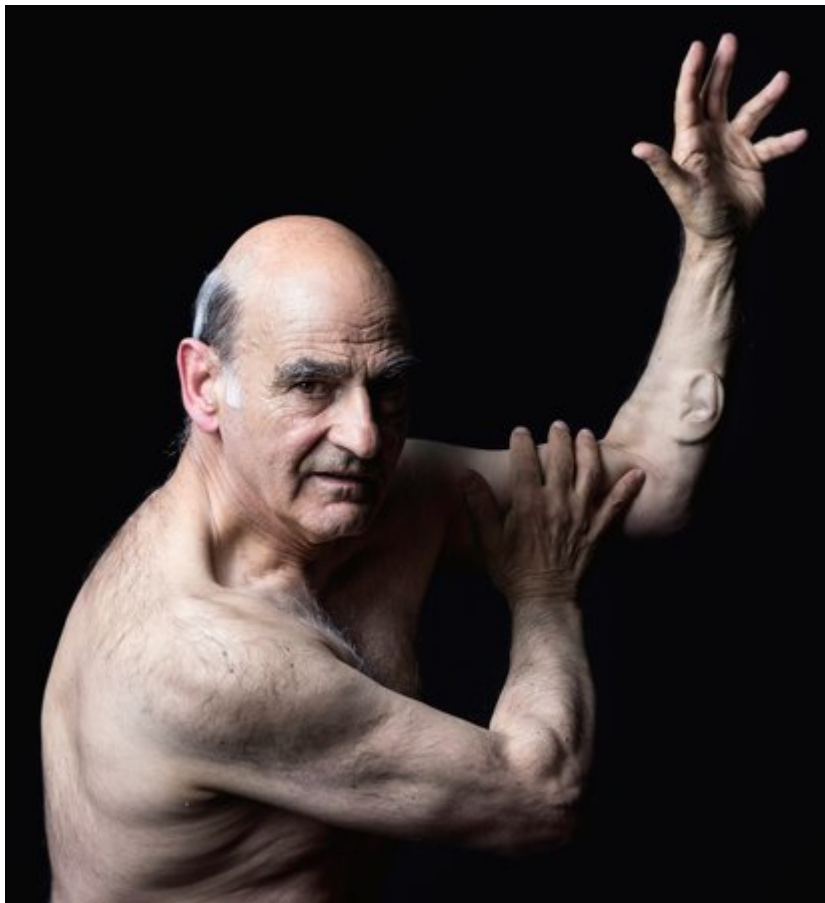


Image of Stelarc's ear implant, image via *Sleek Magazine*

Stelarc is perhaps best known as the guy with an ear in his arm. In 2007, the Cypriot-Australian performance artist—then in his fifties—had a cell-cultivated ear surgically attached to his left arm. The piece, which required two surgeries but, due to infection, eventually had to be removed, was extremely in line with the rest of Stelarc's oeuvre, which centers on his thesis that the "the human body is obsolete."

Raised in the Melbourne suburb of Sunshine, Stelarc's performances include: suspending himself from flesh hooks, allowing his body to be controlled by electronic muscle stimulators hooked up to the internet, performing with a robotic third arm, and sitting at the center of a six-legged walking machine which he operated via arm gestures.

SUZANNE ANKER



Installation shot of a piece from Susanne Anker's "Remote Sensing" series, image via the artist's website

The pieces in Suzanne Anker's "Remote Sensing" series (2013) look something between a geode and a household succulent. In fact, they are 3D-printed models based on photos of decaying matter. The series title is based off a term from satellite technology used to describe geographical areas that are too dangerous for human contact, and fits in with Anker's larger project: to examine how "nature" is being altered in the twenty-first century with a focus on climate change, species extinction, and toxic degradation.

Considered one of the early pioneers of BioArt, Anker has been fusing art and biology since the mid nineties. In 1994, she curated "Gene Culture: Molecular Metaphor in Visual Art," one of the very first exhibits to deal with genetics and visual culture. In 2011, she founded the Bio Arts Lab at New York's School for Visual Arts, the very first Bio Art laboratory in a U.S. Fine Arts Department. Anker has also had a prolific academic writing and editing career, publishing on topics such as genomic mapping and interspecies relationships.

HEATHER BARNETT



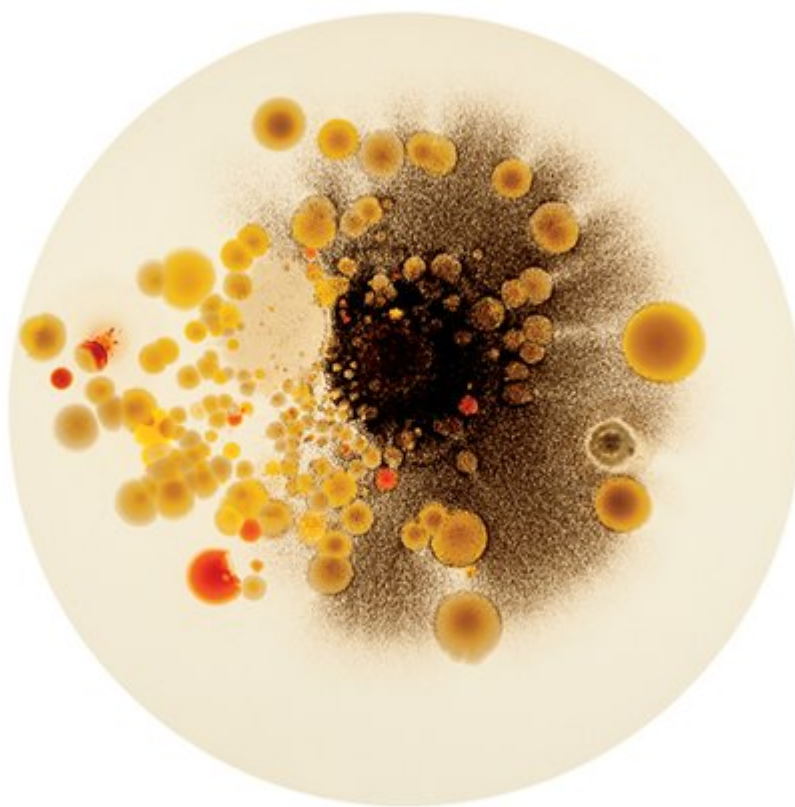
Still from *Study No.016: collective experiment establishing likes and dislikes* (2011), image via the artist's website

Heather Barnett describes the Physarum Experiments as “an ongoing collaboration with an intelligent organism”; her collaborators are, of course, slime molds, whose growth, navigational abilities, and humanoid behaviors she has studied and observed for years. Used as test subjects for an array of scientific experiments, the single cell organisms in fact display basic signs of intelligence, capable of problem solving and anticipating events. Barnett then makes movies and animations based off her studies.

In one such piece, *Study No.016: collective experiment establishing likes and dislikes* (2011), visitors at the Margate Film Festival were invited to feed some slime mold a variety of substances to establish which kinds of things the mold enjoyed eating. Barnett filmed the mold’s consumption habits, and, “at the end

of the festival the film was compiled and shared online, many people contributing to one film. Some responses are obvious ([the slime mold] likes oats and pasta, doesn't like pharmaceuticals), but the response to chili powder and tobacco is mixed—something to be tested more in future.”

ANICKA YI



Petri dish containing bacteria cultures from a work in progress by Anicka Yi (2015), image via *Artforum*

While not strictly a bio artist, Anicka Yi's use of materials feels very much inspired by BioArt's legacy. Born in Seoul, Korea, in 1971, before moving to the U.S. at age two, Anicka Yi didn't start making art until she was 30 years old, which is when she began experimenting, not just in art, but in science and perfume as well. Yi became known for using perishable materials that engaged the five senses: tempura-

fried flowers, canvases fashioned from soap, stainless steel shower heads, fish oil pills, shredded Teva Sandals boiled in recalled powdered milk. In *You Can Call Me F*, her 2015 show at The Kitchen in New York, Yi expanded her field of materials to include the human body. She took swabs from 100 women, and, with the help of MIT synthetic biologists, cultivated the bacteria in an agar billboard whose sent “assaulted” visitors as they entered.

Yi’s aim, she said, was to look at what feminism smelled like, part of a larger inquiry into what she called the “patriarchal fear” surrounding hygiene and the female body. As she explained in a video for the Guggenheim museum, “You're dealing with a society that is overly obsessed with cleanliness. And that's partially why I do work with bacteria as a material. Especially in the west, we have this morbid fear of pungent aromas, of bacteria. I'm giving a kind of visualization to people's anxieties about all the germs and bacteria that are proliferating all around us.”