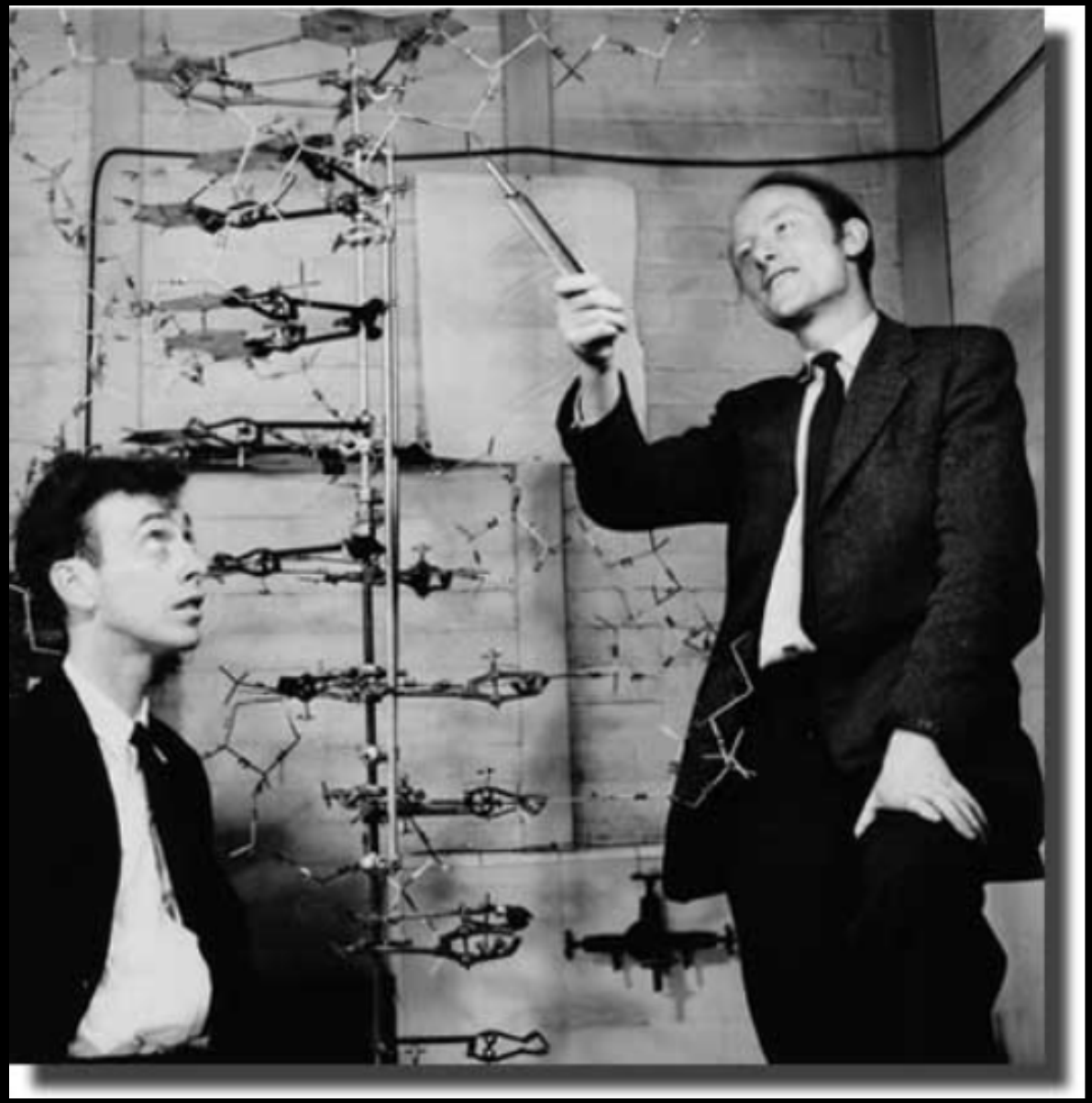
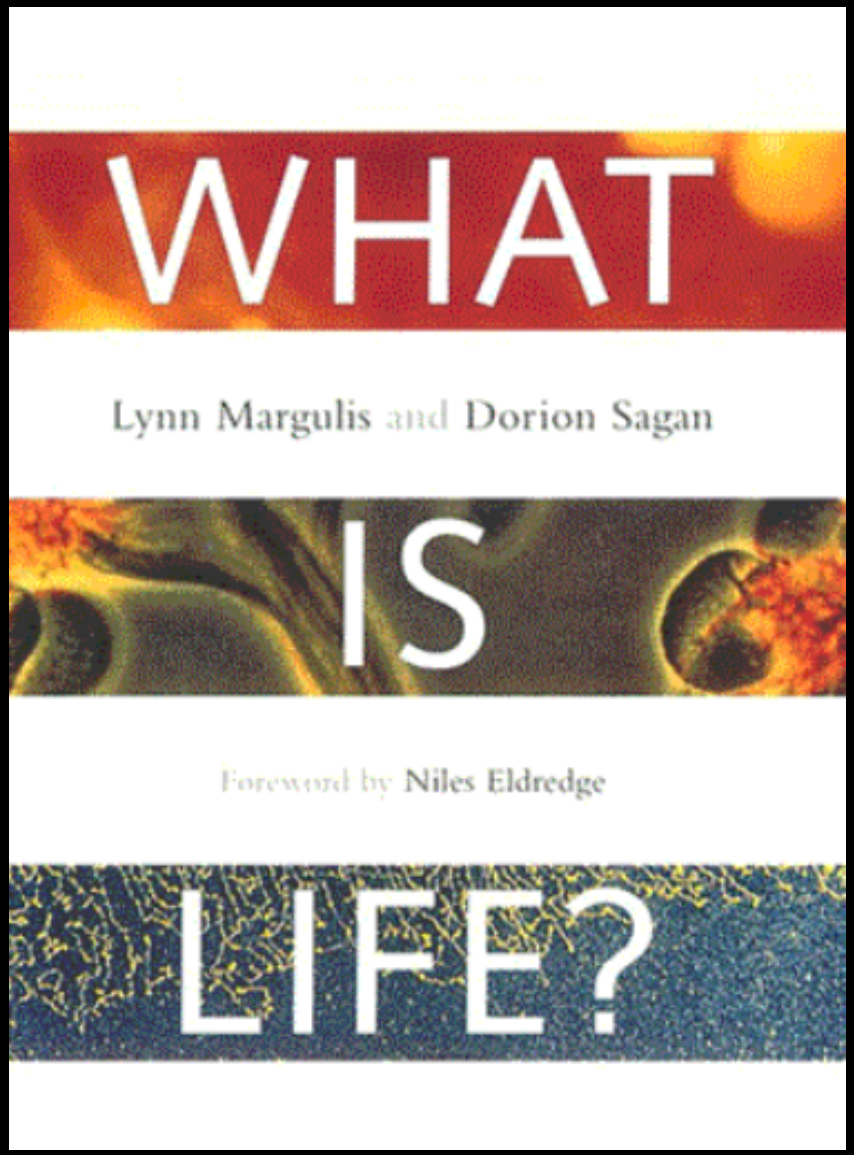
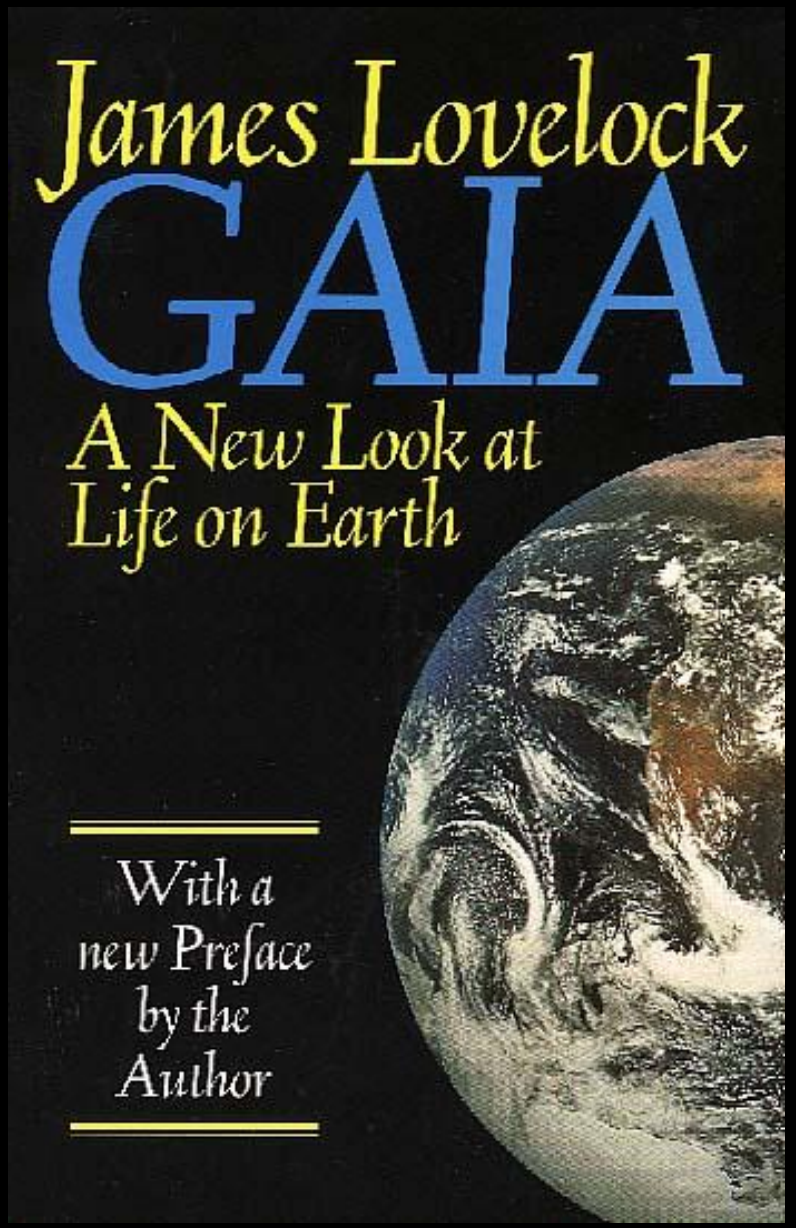
Biotechnology & Art
HC 177, spring 09



The discoverers of the DNA structure,
James Watson, at left, and Francis Crick, look at their model of a DNA molecule.

“A key component to the questioning of biotechnology is the attention paid to the ways in which biomedia consistently recombine the medium of biomolecular systems with the materiality of digital technology. The biological and the digital domains are no longer rendered ontologically distinct, but instead are seen to inhere
in each other; the biological “informs” the digital, just as the digital “corporealizes” the biological. These characteristics also point to a significant question: is the uxtaposition of “bio” and “media” (or “bio” and “tech”) not in itself a redundancy? In other words, is the “body” itself not already a medium?” (Thacker, 2004, pg. 7).


WHAT
Lynn Margulis and Dorion Sagan
IS
Foreword by Niles Eldredge
LIFE?


James Lovelock
GAIA
A New Look at Life on Earth
With a new Preface by the Author

Bionics

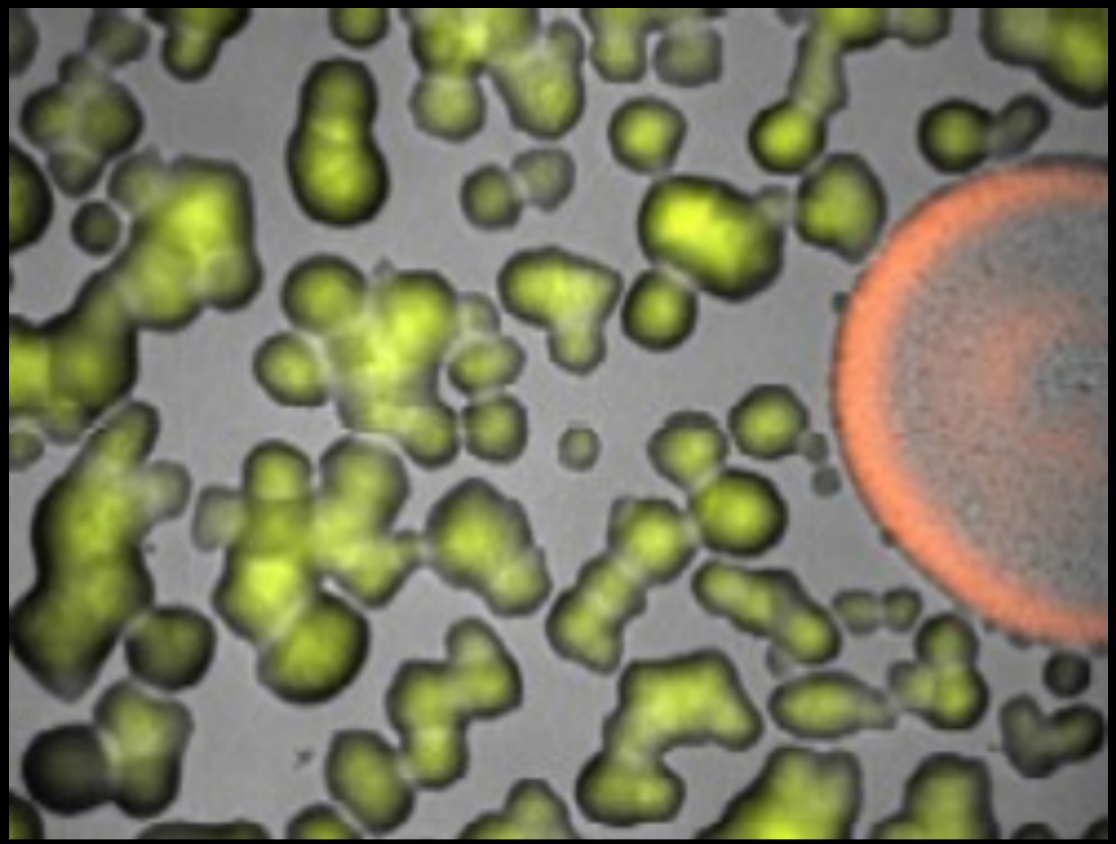
integration of machine and organism

Campbell Aird - Irish bionic arm

Brain-machine interface
Neurons in Petri dish run robots

Steve Potter - GaTech

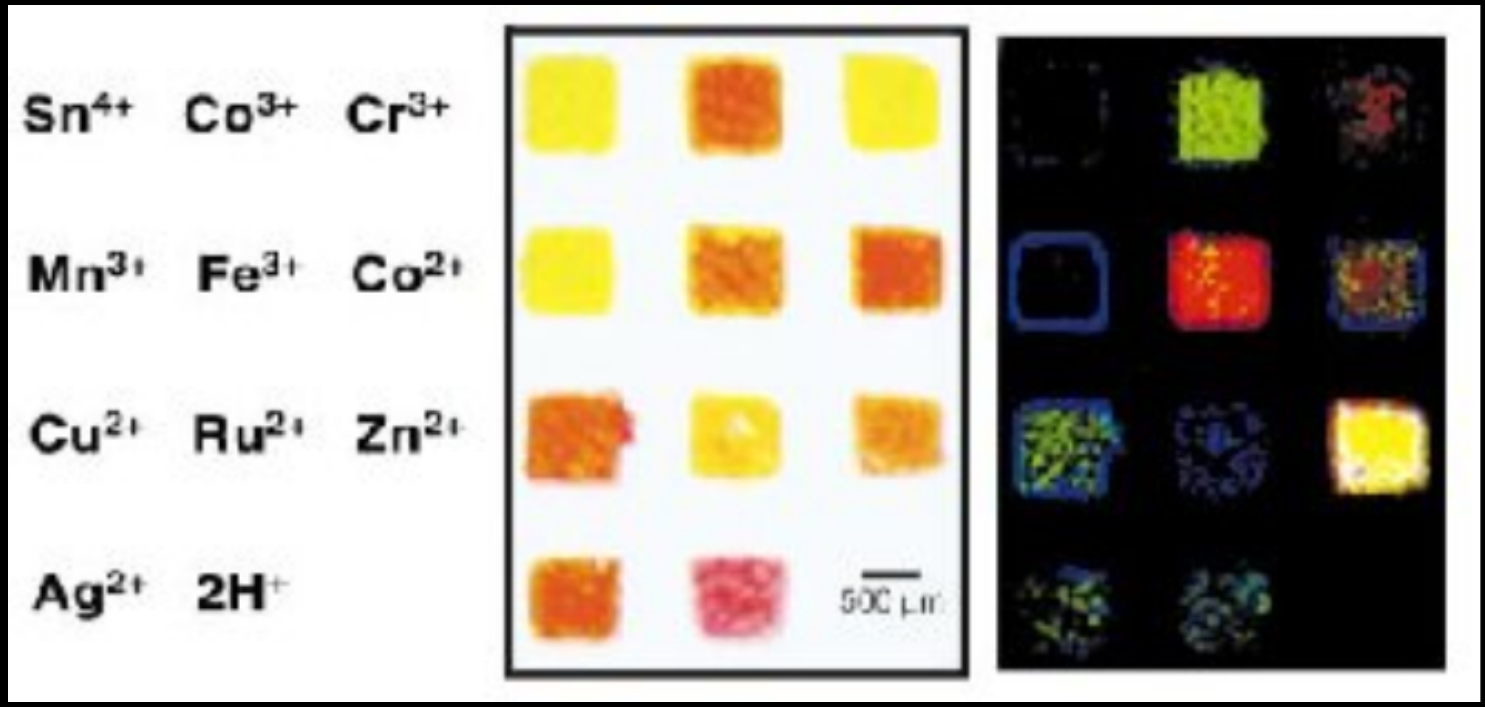
Bio computing / Bio Informatics



Fluorescence observations of engineered cell-cell communication in E. coli.

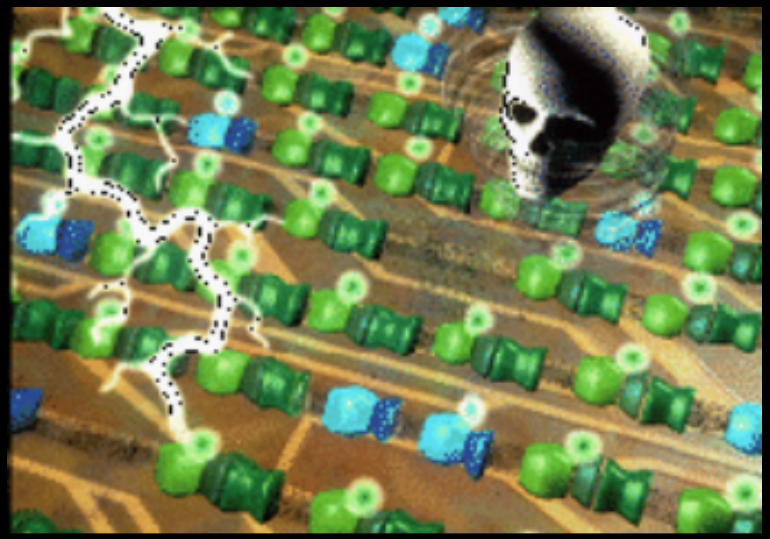
Smell & Taste

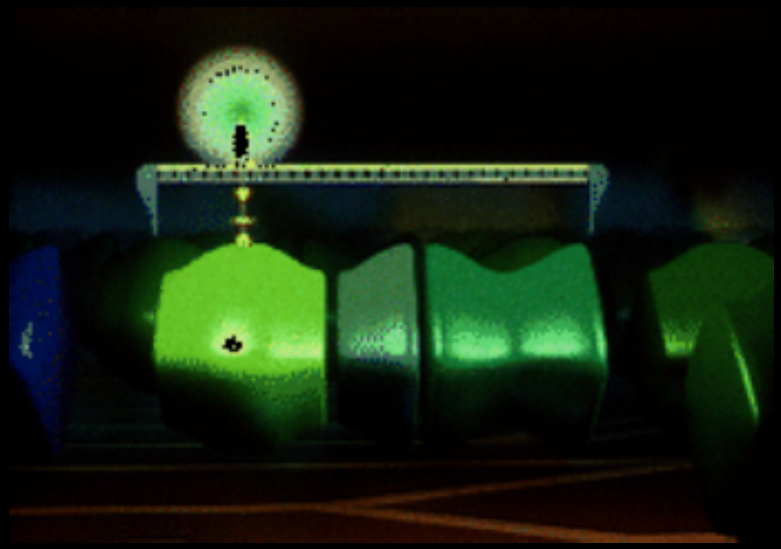
Artificial Noses, Smell Synthesis, Pheromones, the near senses



Thomas Ray

Tierra system





Self-replicating computer programs (colored geometric objects) occupy the RAM memory of the computer. Mutations (lightning) cause random changes in the code. Death (the skull) eliminates old or defective programs.

The Ancestral Program, a self-replicating program that is used to start up the system.
It consists of three ``genes'' (green solid objects). The CPU (green sphere) is executing code in the first gene, which causes the program to measure itself.

Oncomouse

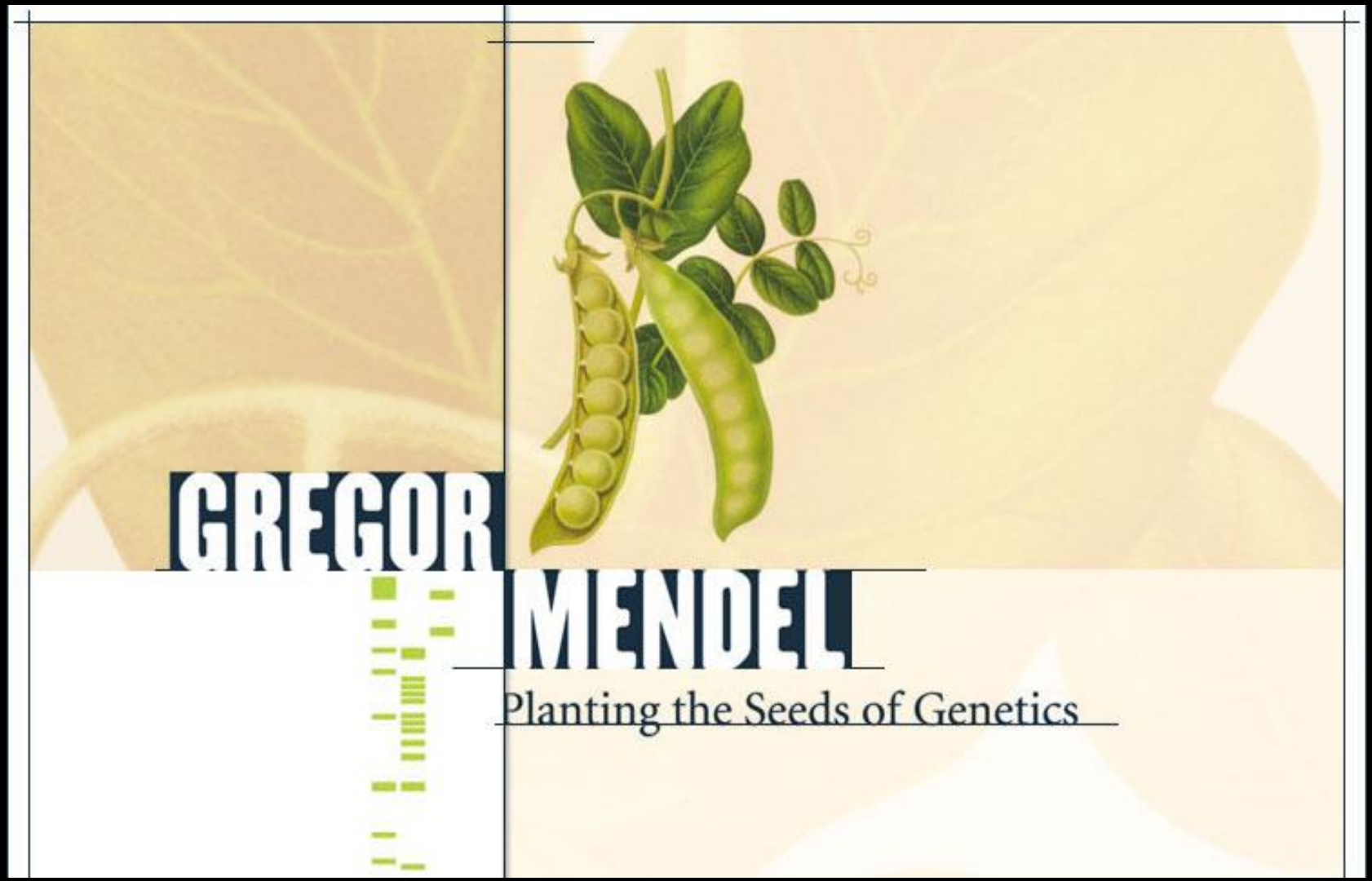
1988, which was engineered to be susceptible to cancer (U.S. Patent No. 4,736,866).

In 1863, Austrian botanist Gregor Mendel discovered that pea plants passed on traits from parent to progeny in discrete biological units that would be later known as genes. Six years later, Swiss biochemist Johann Friedrich Miescher isolated from white blood cells the substance that would be called deoxyribonucleic acid, or DNA.

It would be another 75 years before the two discoveries were linked. In 1944, Canadian biologist Oswald Avery suggested that DNA was the mechanism by which bacteria passed on their hereditary material. However, Avery's explanation was met with skepticism by those who believed that the genetic information of an organism was far too complex to be contained in DNA.

Then in 1953, American biologist James Watson and British molecular biologist Francis Crick determined the double-helix structure of DNA, which, in turn, led to a cascade of new discoveries of how DNA works at a molecular level.

These discoveries were advancements only in the field of biochemistry. It was not until 1972 that scientists pioneered a way to combine biochemistry with a technique hat led to the birth of biotechnology. That was the year that American biochemists Herbert Boyer, Paul Berg, and Stanley Cohen developed recombinant DNA, a modified DNA molecule created by combining DNA from two unrelated organisms.



Gregor **Mendel** (left), in the 1850s made the first observation that plant traits are inherited. Mendel noticed that when green and yellow peas were crossed, all progeny seeds were yellow. When plants of this first hybrid generation (F1) were allowed to self-pollinate, the progeny (F2) segregated
with one green seed per three yellow (right).

Dolly

first cloned animal,

VIRGIL WONG: MALE PREGNANCY

One of his works, titled Male Pregnancy (1999,2002) is an interactive site which allows viewers to examine the “pregnant” man’s vitals, journals about his days being pregnant, and so forth.

It’s also funny how the site is semi-modern; it has article titles such as “Mr. Lee Mingwei congratulates fellow pregnant dad Thomas Beattie.”

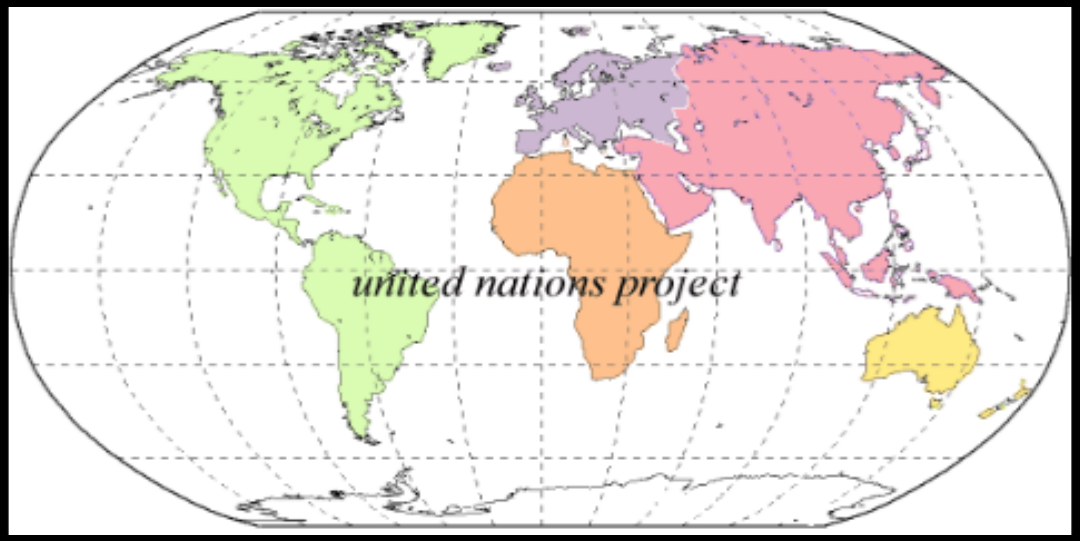
Thomas Beattie is a transgendered male who decided to keep her reproductive rights. After finding out his wife was sterile, he decided to carry the baby instead. From what I’ve read, Thomas has successfully carried the baby to full term and is now the father of a beautiful baby girl, Susan.

Amy Chen

WENDA GU: HAIR ART

Wenda Gu produces artwork using strands of hair.

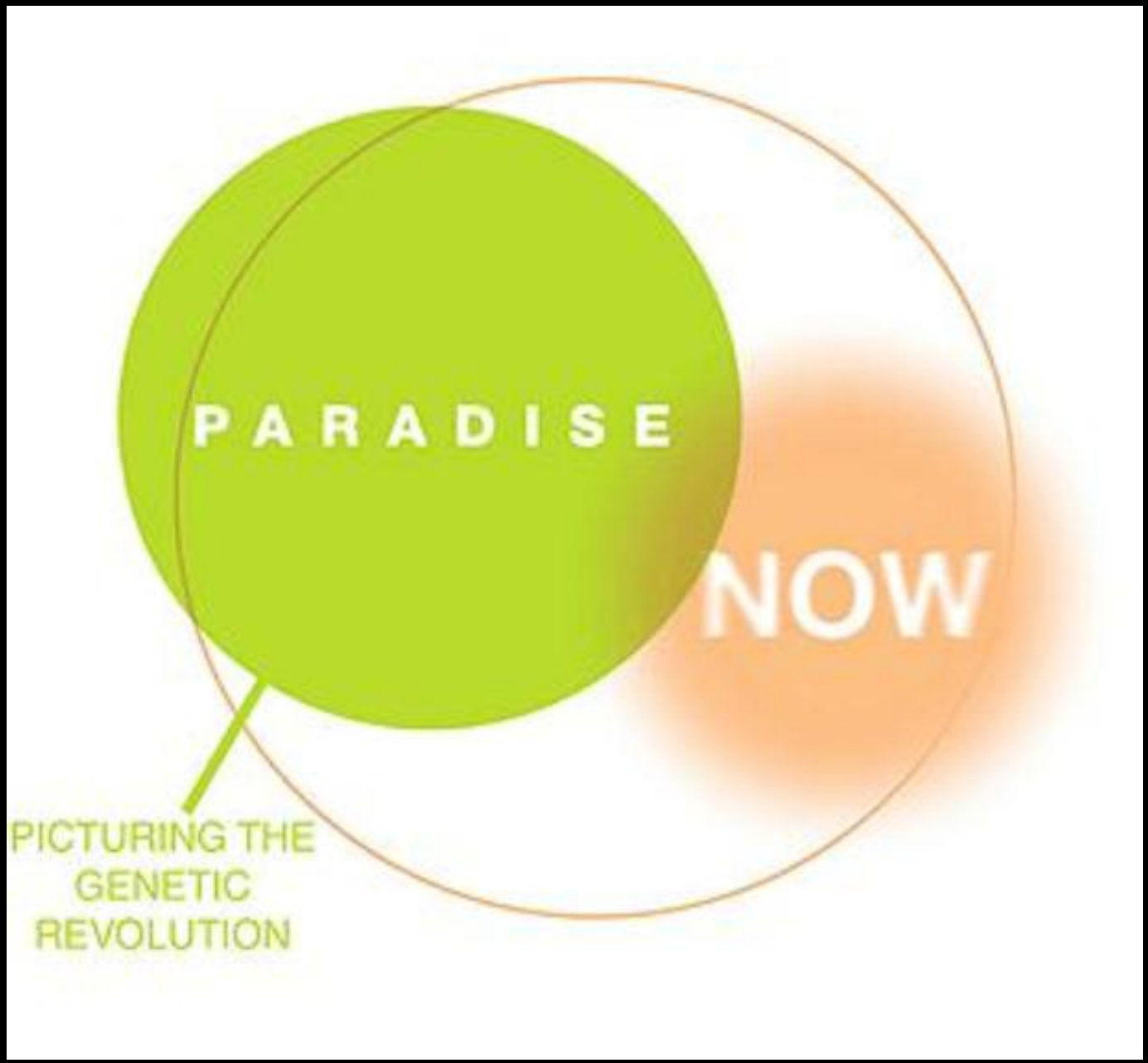
Wenda Gu is very passionate about the topic of unifying the nations of the world through the common medium of hair. A quote from an interview states that Wenda Gu's work stems from "his dream that through his art he might unite humanity and encourage international understanding."



Jasmine Huynh

art gallery, university of north texas, denton, usa 2002
40 feet high x 25 feet wide x 25 feet long, 5000 m human hair

Paradise NOW: picturing the genetic revolution exhibition, Exit Art

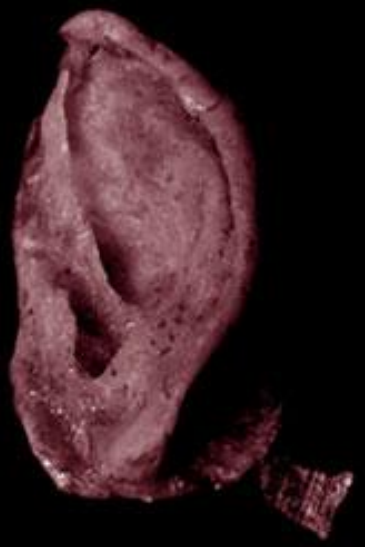


Edward Steichen: photographer in the 1920's

Steichen's hobby was horticulture. He used Colchicines to induce mutations/polyploidy
in Delphiniums and raised five acres of them near his home near West Redding,

The Tissue Culture & Art Project

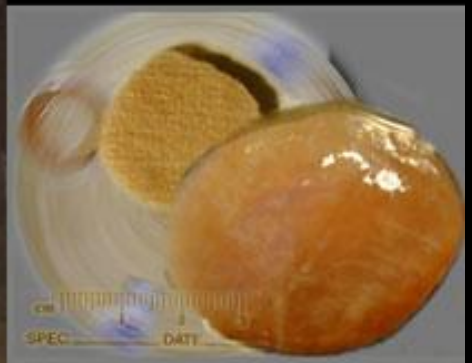
Victimless Leather
A Prototype of Stitch-less Jacket grown in a Technoscientific "Body"



Extra Ear – ¼ Scale

Disembodied Cuisine

The Pig Wings Project



Semi-Living Worry Dolls
Tissue Culture & Art(ificial Womb)

Info

TC&A in BioFeel

Contact

Previous Stages

Publications

Eduardo Kac

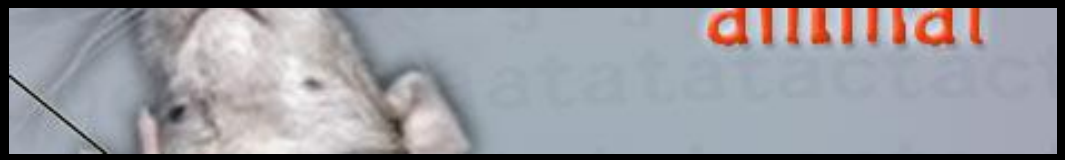
One of the most publicized uses of transgenics is Eduardo Kac's *GFP Bunny* , (or *Alba* as she is affectionately known) which was created in 2000 by inserting the enhanced version of the gene for GFP (Green Flourescent Protein) isolated from the jellyfish Aequorea Victoria. Transgenic art, a term coined by Kac to describe

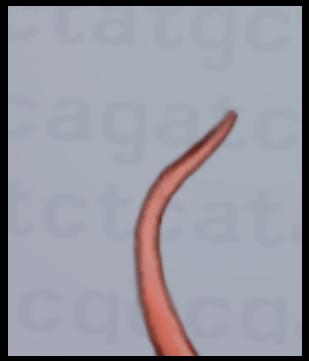
"a new art form based on the use of genetic engineering techniques to transfer synthetic genes to an organism or to transfer natural genetic material from one species into another, to create unique living beings"

Natalie Jerejimienko

(One tree: 100 genetically identical trees subjected to different environments)

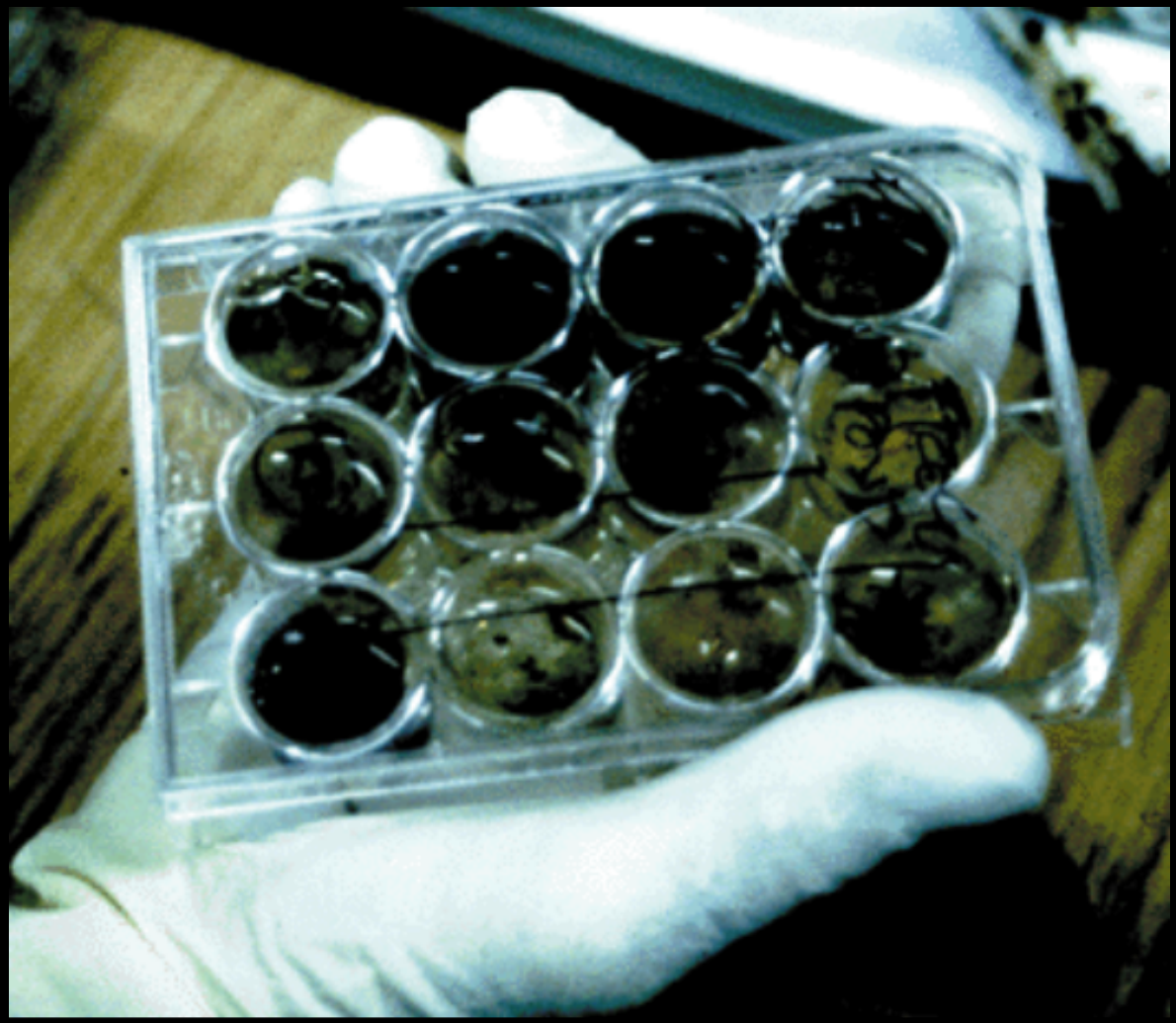
Adam Zaretsky


animal



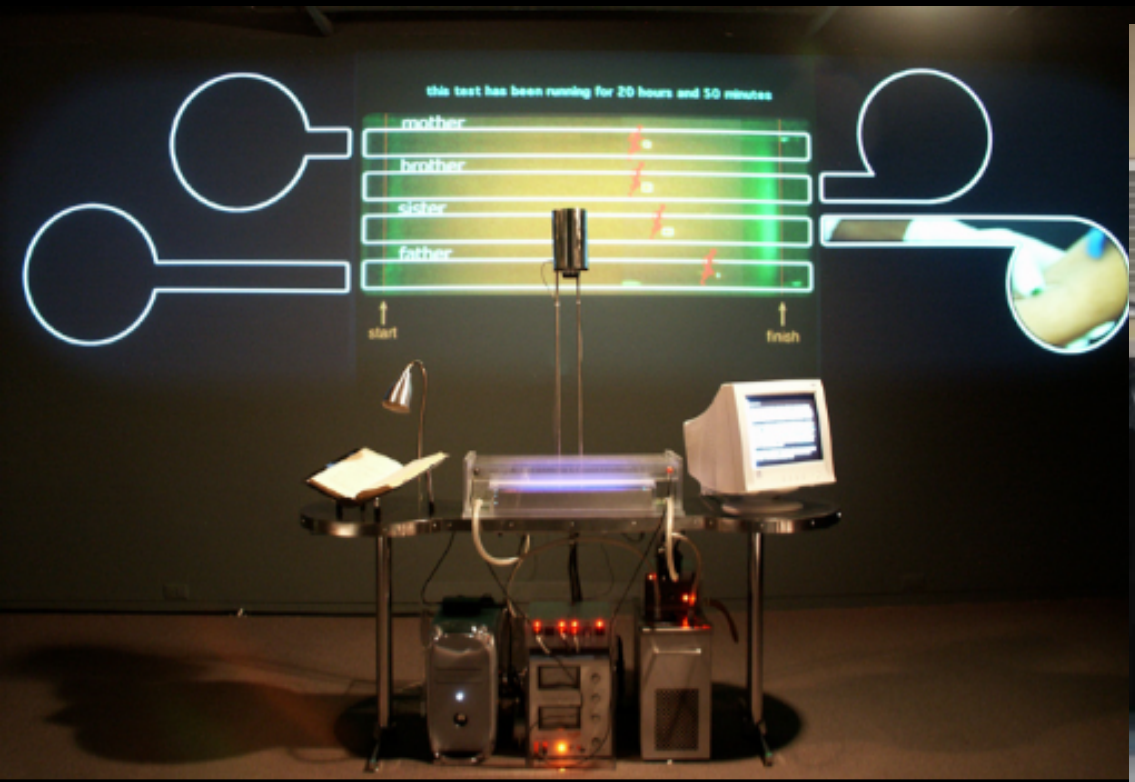
Larry Miller

Since 1992, his certificate has been published in eight languages, and it has been used by thousands of people around the world to proclaim ownership of their own individual genomes.



Mel Chin

Artistic and ecological reclamation


this test has been running for 20 hours and 50 minutes
mother
brother
sister
father
start
finish

Laura
Citris

Questions

Is life itself a valid expressive medium? What is the meaning inherent in the use of transgenics, mutilation, mutation, recombinance or selective breeding as an rtistic technique? How do we define and value artistic media and technologies? Is this inherently different from how other technologies are evaluated? Should the restrictions be more or less stringent for artists using biotechnology than for scientists in industry/academia?

Is there a need for separate standards for artists creating or manipulating living organisms and semi-living systems? Is there a value to “poetic license” as applied to the artistic practice of biotechnology? Or is the “authorized” versus “unauthorized” use of biotechnology at the core of issues pertaining to the use of “Life” as an expressive medium? And ultimately, are there (or should there be) limits to human creativity?

Ruth West

Does an ndividual artist’s right to practice outweigh broader social/ethical concerns about it or the techniques/technologies employed? Would the same be true for a scientist using the very same techniques/technology? Does “poetic license” extend to bioethics and biosafety?


Bios 4
Arte biotecnológico y ambiental
CLAUSTRÓN ESTE
3 mayo | 2 septiembre 2007