



Xavier Cortada, "(The Four Nucleotides:) Guanine," acrylic on canvas, 60" x 72", 2010.

SEQUENTIA

BY XAVIER CORTADA

ABOUT SEQUENTIA

Xavier Cortada's *Sequentia* was a solo exhibit at the Frost Art Museum that explored the sequence of events that make up life on the planet from the molecular to the monumental.

The title of the exhibit also references a series of actions Cortada set in motion to create of a unique strand of DNA. Working with a molecular biologist, Cortada synthesized an actual DNA strand made from a sequence generated by museum visitors to create a participatory artwork.

In *The Four Nucleotides*, the artist creates large scale "portraits" of Adenine, Cytosine, Guanine and Thymine – the four bases of a DNA strand that summarize all we are, were and will be.

PARTICIPATORY INSTALLATION

In *Genetic Sequence*, Cortada invites museum visitors to randomly select a post card depicting one of Cortada's four Nucleotide paintings and place them sequentially within small plastic bags hanging in a grid on a wall.

In placing the nucleotide postcards, the visitors will assist in the development of a DNA strand as part of a participatory installation.

LABARTORY SESSIONS

Two weeks into the exhibit, Cortada engaged in a series of LabARTory Sessions with Dr. Kalai Mathee, FIU Department of Molecular Microbiology and Infectious Diseases Founding Chair. In her lab, Cortada determined if the random sequence being generated by the participatory art project exists anywhere in the human genome.

During these performative sessions, Cortada used the sequence to create a live DNA strand, insert (clone) it into a vector (plasmid) and propagate it in a bacteria on a Petri dish. The presence of the specific DNA strand was also analyzed using agarose gel electrophoresis, sequenced and analyzed against other existing DNA sequences.



TOP LEFT: Xavier Cortada, "(The Four Nucleotides:) Adenine," acrylic on canvas, 60" x 72", 2010
BOTTOM LEFT: Xavier Cortada, "(The Four Nucleotides:) Cytosine," oil on canvas, 60" x 48", 2010
TOP RIGHT: Xavier Cortada, "(The Four Nucleotides:) Guanine," acrylic on canvas, 60" x 72", 2010
BOTTOM RIGHT: Xavier Cortada, "(The Four Nucleotides:) Thymine," oil on canvas, 60" x 48", 2010



Genetic Sequence. Charcoal on (400 sections of) paper, dimensions variable, 2010. Installation at Frost Art Museum's Sequentia exhibit.

RESULTS

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TCTAATACAATCCCTACGTGACTGTGTATAAATGTGAAAGCTATATTAATGTCGCAGCTAGTCTCATAAAAGATTCCT
ACAACGCGACGGATCTATACCTATGCCATAGTCCCAGCTTTTACTTATTCTCACAAATTTTACATTTTGGGCCAACA
GGACCGTCCTCATGCTTACCATATTCCTTCAGCTTAATATAGCTGATCTCTACACTCAAACCACCTCGTGTGCTGGTC
TCGAGAGTTGCCCTTACCCGAGGCTTGGTGTACTGGGTGTAAGTAAAAGTTGGATAGGCCCGTCCTTGGAGA
GTCGAACTAATTTGAGAGCGCATCTGCTTCCATACTTGT ATCCCTGTTGTCCTTCGGCACACGTGGAAGTACTT
GCCTCAAAAAGGGTAACA
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The random sequence above was generated by the participatory art project and a portion of it was similar to a DNA sequence found in the human genome (Chromosome 3 which encodes proteins the direct the navigation of axons in human neurons).

PAINTING THE GENOME FOR THE PUBLIC

BY XAVIER CORTADA FOR SCIENCE MAGAZINE VOL. 331, FEB. 4, 2011

Everything that lives, has ever lived, or will ever live on planet Earth has been created using adenine, cytosine, guanine, and thymine. Mapping how these four nucleotides arrange to create a human being helps us better understand how interconnected we are to one another and the natural world.

I recently created portraits of life's four building blocks shown below. It felt as if I were painting a relative, except that I was bringing molecular formulas, not ancestors, to life. Within each large colorful canvas, I painted imaginary subatomic landscapes with floating base-pairs.

At the Sequentia exhibit's opening, I invited 400 museum visitors to help synthesize a DNA molecule. Through art, I wanted them to explore the sequence of events that make up life on the planet from the molecular to the monumental. Participants randomly selected postcards depicting one of the four nucleotide paintings and attached them along the exhibit's wall. The participatory art installation generated a 400-nucleotide sequence.

In Kalai Mathee's laboratory at the College of Medicine, Florida International University, we synthesized the DNA strand, propagated it within bacteria in a petri dish, and analyzed it against other existing sequences. Our randomly generated sequence could have belonged to any (or none) of Earth's species, but instead, it resembled the portion of human chromosome 3 that encodes proteins directing the navigation of axons in our neurons during development.

More of us need to realize that we came about in the same way that all other life did – we share the same biology. May we use the knowledge we develop to act as best we can to sustain life for all species sharing this planet.





Xavier Cortada is an artist, Professor of Practice at the University of Miami Department of Art and Art History and Artist-in-Residence at Pinecrest Gardens, where his studio, gallery and socially engaged art practice are based. Cortada's work is intended to generate awareness and action towards issues of global climate change. Using art's elasticity to engage others, Cortada educates and inspires community members to work and learn together to solve our community's problems.

The artist has created art installations at the North and South Poles to address environmental concerns at every point in between. He has developed numerous collaborative art projects globally, including peace murals in Cyprus and Northern Ireland, child welfare murals in Bolivia and Panama, AIDS murals in Geneva and South Africa, and eco-art projects in Hawaii, New Hampshire, Taiwan, Holland and Latvia.

Cortada has also been commissioned to create art for the White House, the World Bank, Pinecrest Village Hall, Miami City Hall, Miami-Dade County Hall, Florida Botanical Gardens, Port Everglades, the Florida Turnpike, the University of Miami, the Miami Art Museum, the Museum of Florida History and the Frost Art Museum.

His work is in the permanent collections of the Perez Art Museum Miami (PAMM), the NSU Museum of Art in Ft. Lauderdale, the Whatcom Museum, the Phillip and Patricia Frost Art Museum, the MDC Museum of Art + Design and the World Bank.

Cortada, born in Albany, NY and raised in Miami, holds undergraduate, graduate and law degrees from the University of Miami.

To learn more, visit www.cortada.com.



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