



Xavier Cortada, Diatom Fountain, ceramic tile, 16' x 8' x 8', 2017

DIATOMS

BY XAVIER CORTADA

THE ART OF DIATOMS

ARTIST'S STATEMENT

I marvel at looking into a microscope.

I focus in and see time. I see the past, really far into the past. I see beautiful small aquatic plants encased in glass that lived on our planet for many millions of years. Sitting inside Dr. Evelyn Gaiser's Algae Research lab at Florida International University in Miami, I look at a slide and see diatoms.

Diatoms transport me to a place so distant in time that it wouldn't look like the Earth I know. They help connect me to an Earth I am trying to better understand. An Earth fluid. An Earth as process. An Earth completely interconnected. An Earth generating life forms across space and time.

In diatoms, I also see moments captured in time. Scientists can determine the past salinity of water by examining the glass shells of diatoms preserved in sedimentary core samples. Each diatom species has a different salinity preference, so changes in the mixture of fresh and sea water (driven by sea level rise and water management) can be inferred from past diatom remains.

Their presence in the layered sediment connects us to the ecosystem in which they thrived while they were alive. Indeed, they are a portal to what once was so that we can better learn how to protect what now is.

A diatom glass shell is a talisman.

The tiniest of talismans- as tiny as a cell: a single-celled organism that lives in the water and harnesses the power of the sun to convert CO₂ into organic substances to sustain its life and releasing oxygen in the process. Indeed, the oxygen in one of every third breath we take was returned to the atmosphere by and through diatoms!

Elegant, gem-like, the bilaterally symmetrical shapes of many diatoms move me to depict them in my art. I do so to celebrate the science that shows us their relevance in our world.

Xavier Cortada, Pulsating, 2015





Cortada

DIATOM

FLORIDA COASTAL EVERGLADES
LONG-TERM ECOLOGICAL RESEARCH

Diatoms are single-celled organisms that live in the water and harness the power of the sun to convert carbon dioxide into oxygen. When a diatom dies, all that remains of it is a glass shell. Scientists use the remains of the diatom to understand the past in order to decipher environmental issues crucial to South Florida in the century to come.

Using a microscope, Xavier Cortada captured the image of a diatom from samples used by scientists working in the Florida International University-led

Florida Coastal Everglades LTER (Long Term Ecological Research) program to study the ecology of the Everglades and sea level rise. develop parcels of developable land where the River of Grass once flowed.

In the digital art piece above, his first work about diatoms, Cortada layered this diatom image maps captured using Google Maps to show the artificial canals and lakes created to develop parcels of developable land where the River of Grass once flowed.

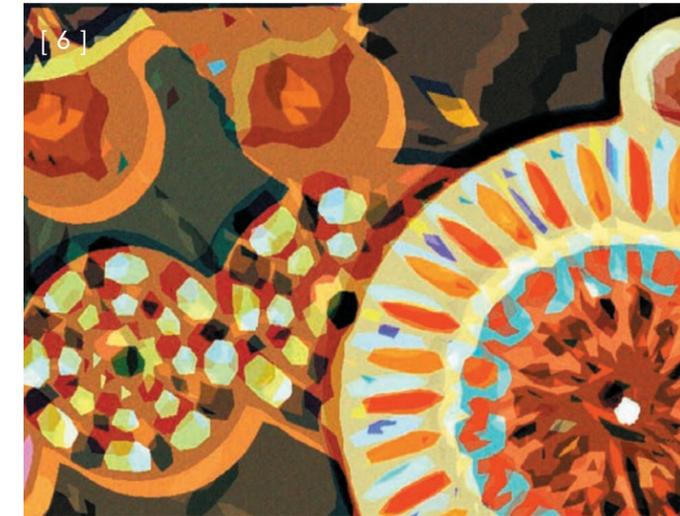
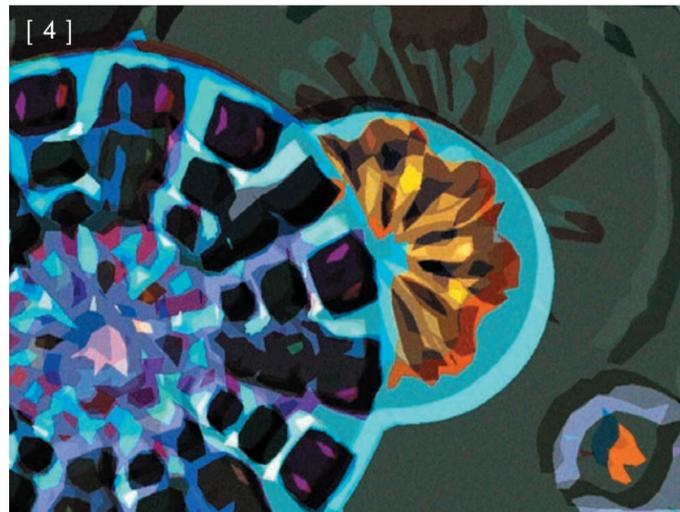
Cortada's research with his science advisor, Dr. Evelyn Gaiser, Professor at the FIU Department of Biological Sciences Algae Research Lab and Lead Principal Investigator for the Florida Coastal Everglades Long Term Ecological Research Program would ultimately inspire a body of diatom-themed artwork shown in this catalog.

Xavier Cortada, "Diatom," archival ink on aluminum, 36in x 18in, 2014

{ IN WATER }

Xavier Cortada, "{in water}" 12 x 16, archival ink on paper, 2018.
(Works are in the permanent art collection of Florida's Department of State)

| | |
|---------|----------|
| [1] J | [6] O |
| [2] K | [7] P |
| [3] L | [8] Q |
| [4] M | [9] R |
| [5] N | [10] S |



DIATOMS IN PUBLIC ART



PINECREST GARDENS

*Xavier Cortada, "Diatom Court,"
hand-carved and hand-painted
ceramic tile on coral rock, 2018.
(Pinecrest Gardens, Pinecrest, FL)*



JACK ORR PLAZA

*Xavier Cortada, "Diatom Mural," 8' x
16'. hand-painted ceramic flat tile, 2016.
(Jack Orr Plaza | Overtown,
Miami-Dade Housing Authority)*



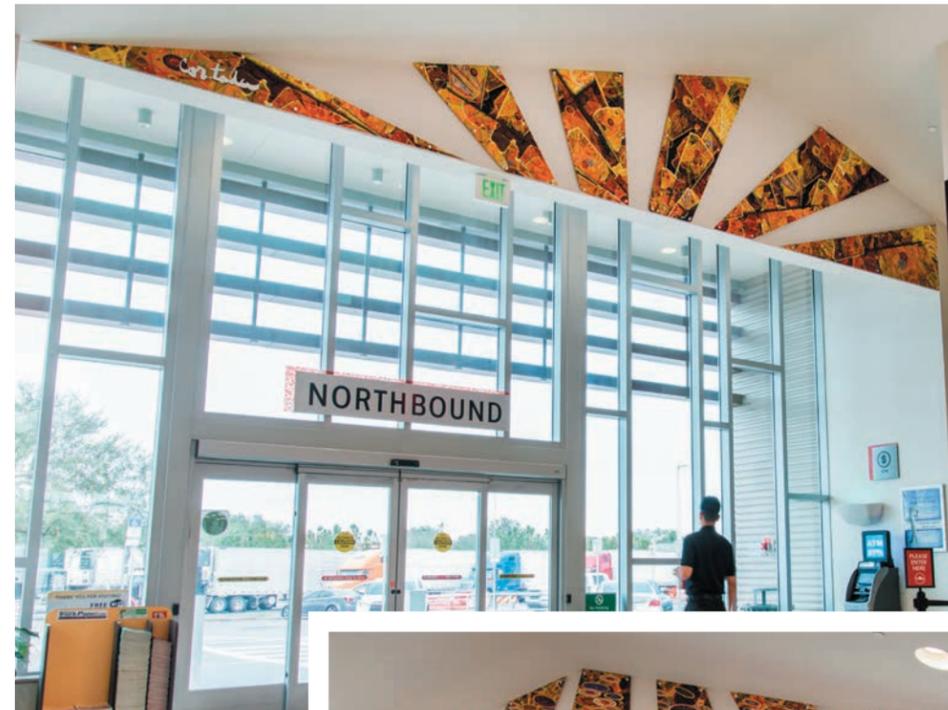
SMATHERS PLAZA

*Xavier Cortada, "Diatom Fountain" 16' x 8'
x 8', ceramic tile, 2017.*

Diatom Fountain is comprised of 1,616 handmade, hand-painted ceramic tiles and stands sixteen-feet tall at Miami-Dade Housing Authority's Smathers Plaza, an elderly living community in Little Havana. Here, four vertical water channels disrupt the natural flow of diatoms across the sculpture, much like how dredging and canals have disrupted the flow of the River of Grass across South Florida. Placing diatoms in public places engages audiences, creating an entry point for them to learn about their significance in Florida's ecosystems.

TURKEY LAKE PLAZA

Commissioned to create permanent public art installations at Florida Turnpike's Turkey Lake Plaza, Cortada wanted to conceptually track a day in the life across the Sunshine State. He placed huge diatom-clad sunrays above the Northbound entrance on the east side of the plaza to depict sunrise. The rays set above the Southbound entrance on the west depicts sunset. The life-giving diatoms (page 4 & 5) appear as circles on the ceiling at the center of the building at high noon.



Xavier Cortada, "Florida is... Sunshine (Sunrise)," archival ink on aluminum, 2015



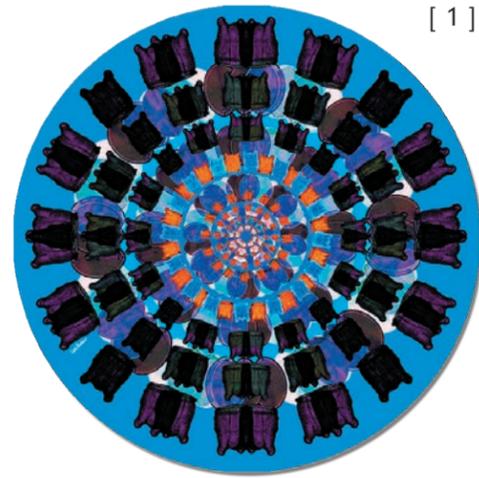
Xavier Cortada, "Florida is... Sunshine (Sunset)," archival ink on aluminum, 2015

Xavier Cortada, "Radiant," archival ink on aluminum, 2015

FLORIDA IS... DIATOMS

In "Florida is... Nature," Xavier Cortada encourages audiences to care for the environment. Conceptualized during his residency at the Robert Rauschenberg Foundation, this participatory art project asks Floridians to define their state by its natural environment, not by the edifices and man-made encroachments that displace nature.

This collection of digital artworks about the beauty of Florida's microscopic organisms are on permanent display at the Florida Turnpike Turkey Lake Plaza near Orlando, Florida and the art collection of Florida's Department of State in Tallahassee. It was also exhibited at the Orlando Science Center, The Frank (Frank C. Otis Gallery and Exhibit Hall), and Creative Pinellas.



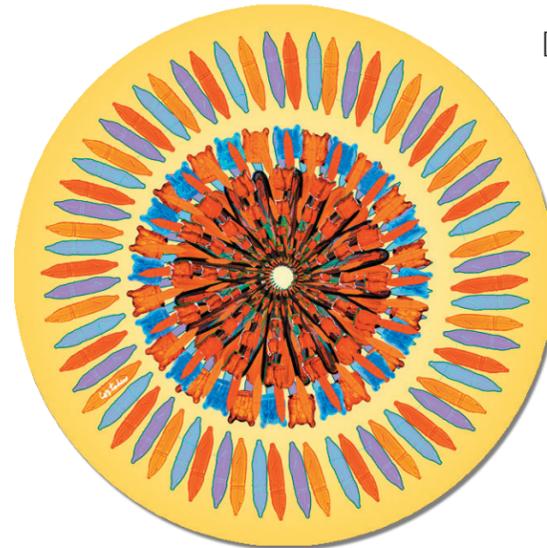
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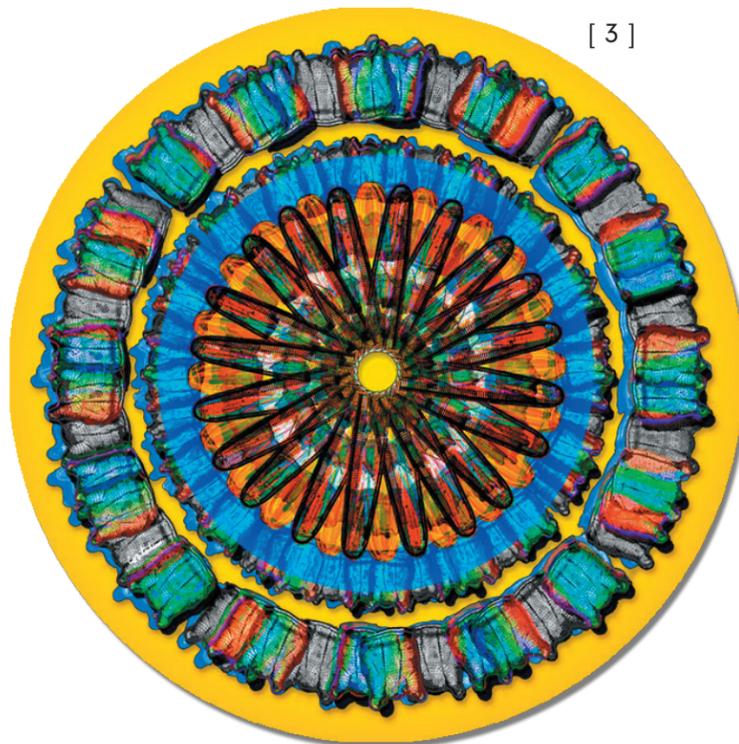
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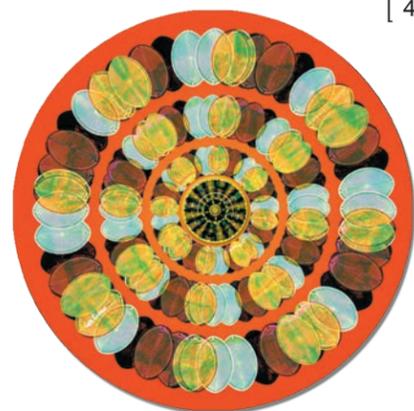
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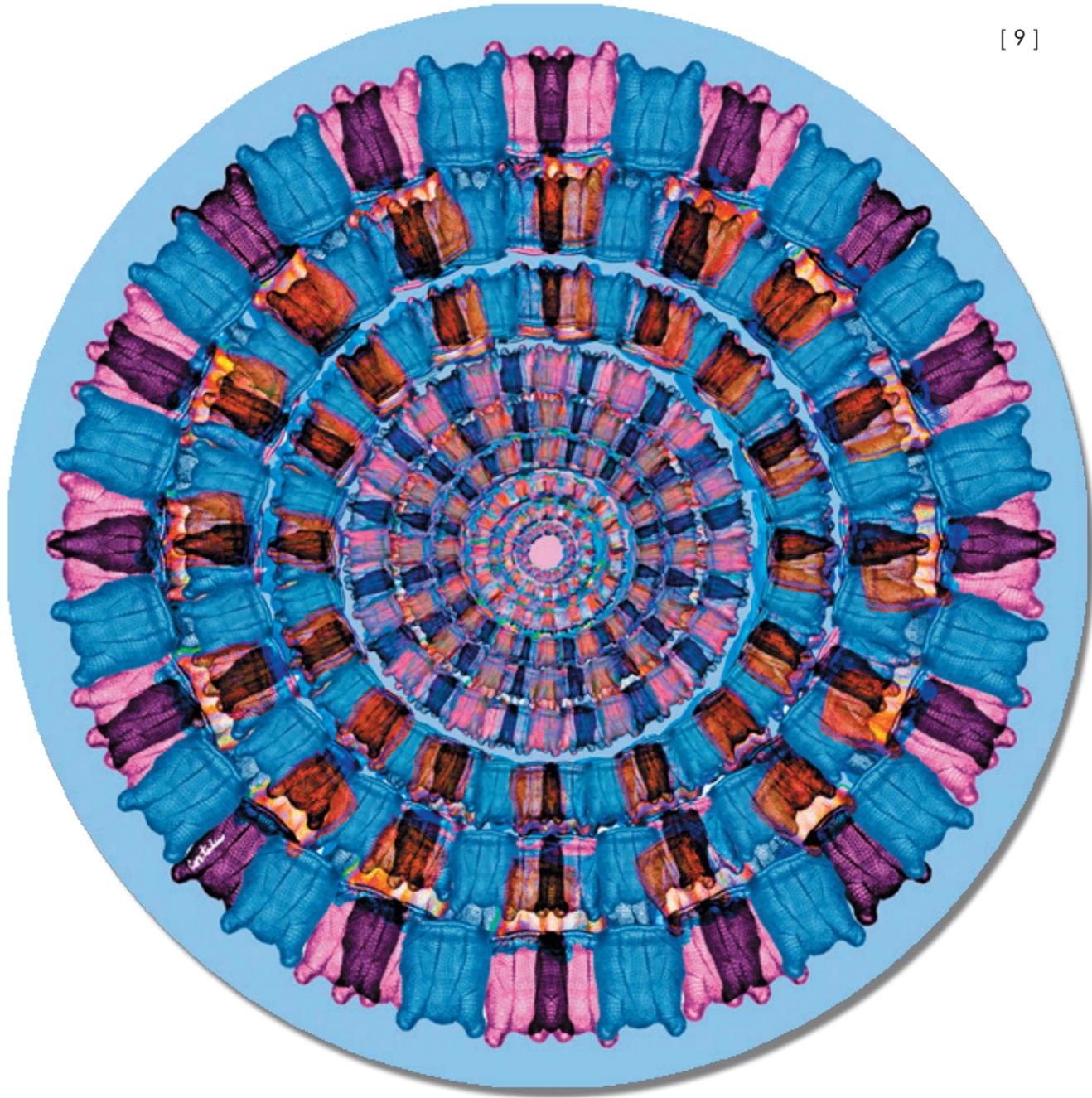


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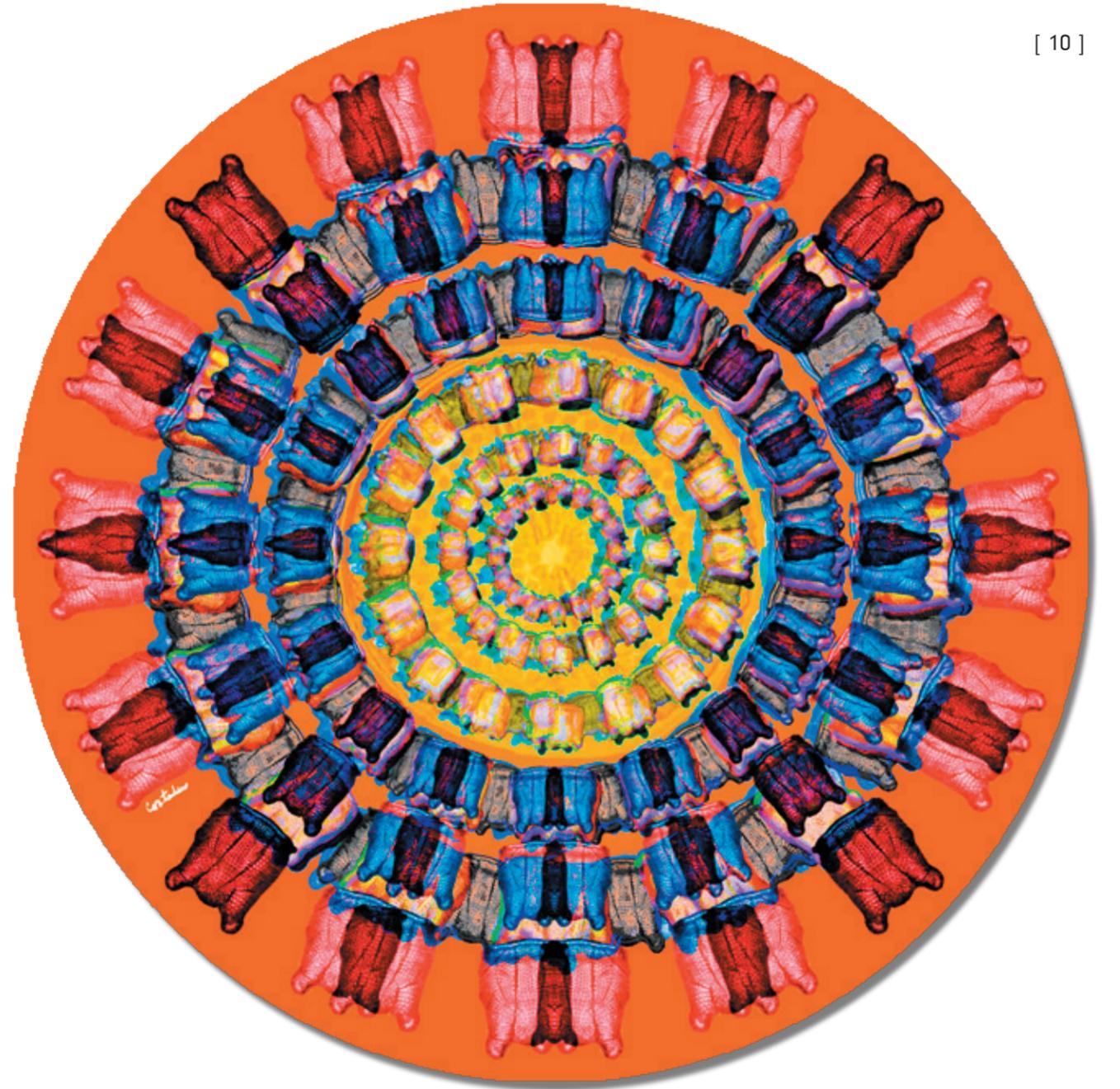
Xavier Cortada, "Florida is... Sunshine (High noon)," archival ink on aluminum, 2015

- [1] *Glint*
- [2] *Shine*
- [3] *Glow*
- [4] *Shimmer*
- [5] *Sparkle*
- [6] *Flare*
- [7] *Sheen*
- [8] *Radiate*

[9]



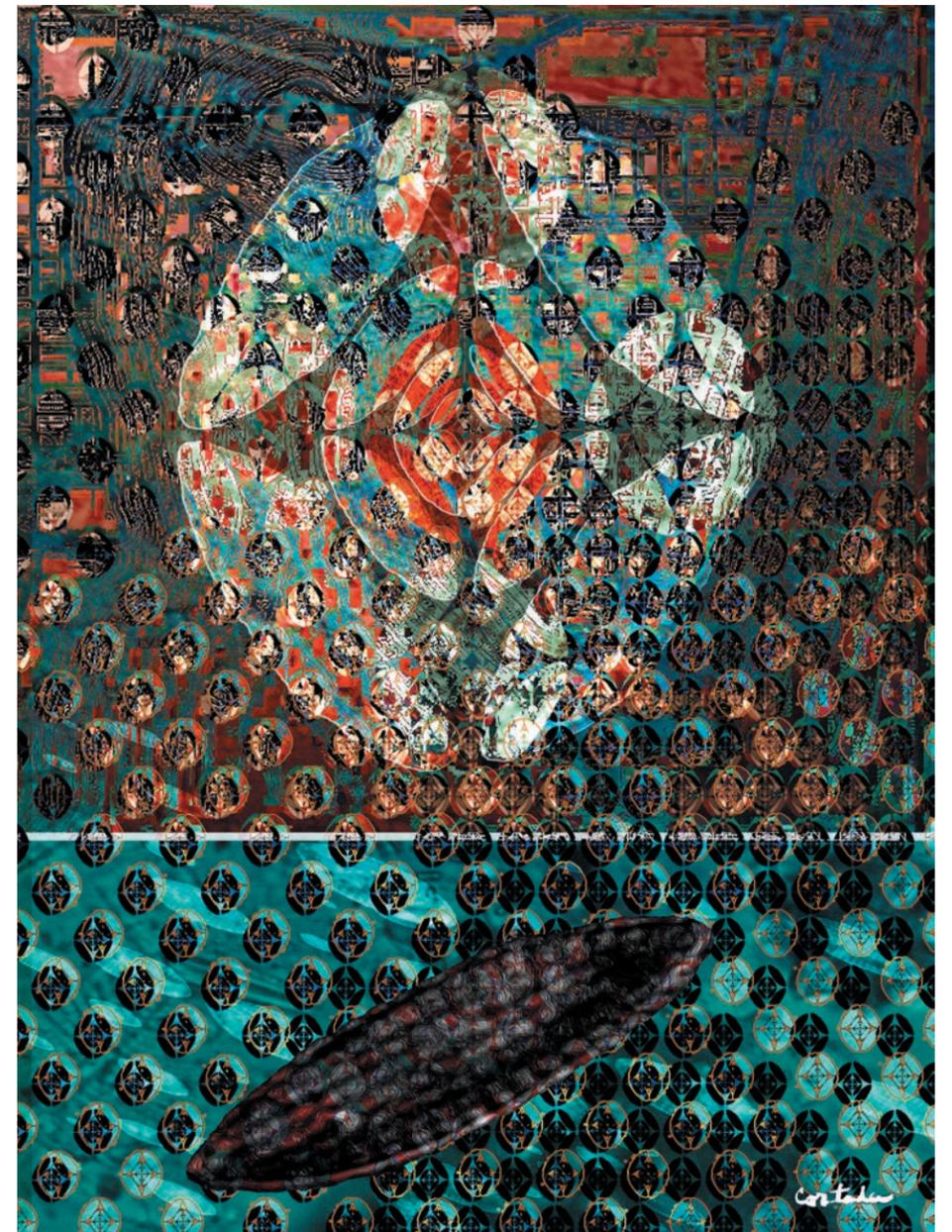
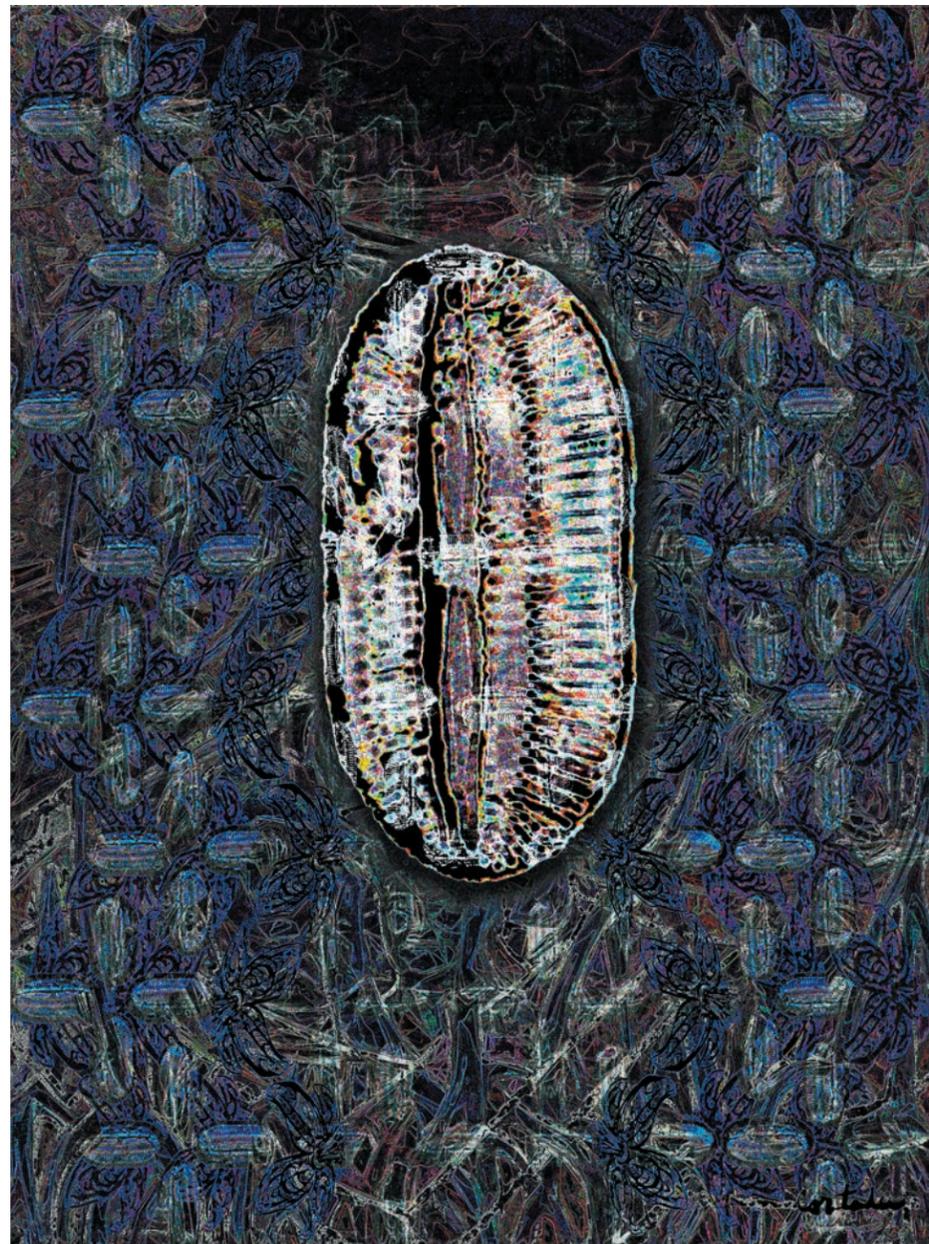
[10]



[9] *Resplendence*
[10] *Luster*



"Just Below the Surface: 1915 (The Founding of Miami Beach)," archival ink on aluminum, 60" x 36," 2015. On permanent display at Miami Beach City Hall.



JUST BELOW THE SURFACE

"Just Below the Surface: 1566 (Pedro Menendez de Aviles lands on the north bank of the Miami River)," 2028
"Just Below the Surface: 1896 (Incorporation of the City of Miami)," 2018
"Just Below the Surface: 1915 (The Founding of Miami Beach)," archival ink on aluminum, 2015

In 2018, The Miami River Show at Pinecrest Gardens' Hibiscus Gallery invited artists to explore the Miami River's history, the condition of its waters, and its current hyper-gentrified conditions, in which old fisheries, boatyards, and "mom-and-pop" eateries cohabit the river's banks with trendy restaurants, sleek yacht clubs, and multimillion-dollar luxury condos.

In collaboration with researchers from the FIU School of Environment, Arts and Society, Xavier Cortada continued his investigation of diatoms in *Just Below the Surface*. His digital works were created using diatoms from a sediment core sample that was carbon dated to determine which of the diatoms were alive and creating the oxygen breathed by a conquistador, Miami's incorporators, and the founder of the city of Miami Beach. First dating back to 1566, the leftmost work above memorializes the encounter between Pedro Menendez de Aviles and a young member of the Tequesta, a Native American tribe that occupied the southeastern Atlantic coast of Florida. The center work commemorates Miami's 368 incorporators who voted to create the City of Miami in 1896 to approve the creation of the City of Miami. The backgrounds of both pieces use imagery from Cortada's "First Encounter" and "The Incorporators" murals that permanently hang at the entrance of Miami City Hall.

The rightmost work was created to celebrate Miami Beach's centennial, depicting diatoms that lived on Biscayne Bay in 1915 and creating the very air Miami Beach founders breathed 100 years ago as they brought the city to life. The background of this piece uses imagery from an early map of the City of Miami Beach. This original piece is on permanent display at Miami Beach City Hall.

DIATOMS OF THE FLORIDA EVERGLADES



Xavier Cortada, *Diatoms*, 2017
Hand-glazed ceramic on ceramic flat tile



Xavier Cortada, *Diatoms of the Florida Everglades*, 2017
Underglaze on ceramic flat tile

The complex ecosystems of Earth rely on invisible organisms to thrive. Our planet would be a very different place without the essential contribution of diatoms. Regularly overlooked in conversations about biodiversity, diatoms are the largest type of phytoplankton algae. They feed marine animals, absorb carbon dioxide dissolved in the ocean from the atmosphere, and collectively produce as much oxygen as all of the world's trees. Their nutrient-rich bodies are swept up into the atmosphere by storm winds and deposited on land where they become an essential fertilizer to the tropical forests. Diatoms are extremely small, <0.2 mm in size, and only visible to humans through a microscope.

Cortada's installation invites us to reframe our understanding of ecosystemic agency beyond the limitations of human vision. His ceramic portraits of diatoms foreground the individuality of each microorganism while alluding to its fragility.



ABOUT XAVIER CORTADA

Xavier Cortada, Miami's pioneer eco-artist, uses art's elasticity to work across disciplines to engage communities in problem solving. Particularly environmentally focused, his work intends to generate awareness and action around climate change, sea level rise, and biodiversity loss.

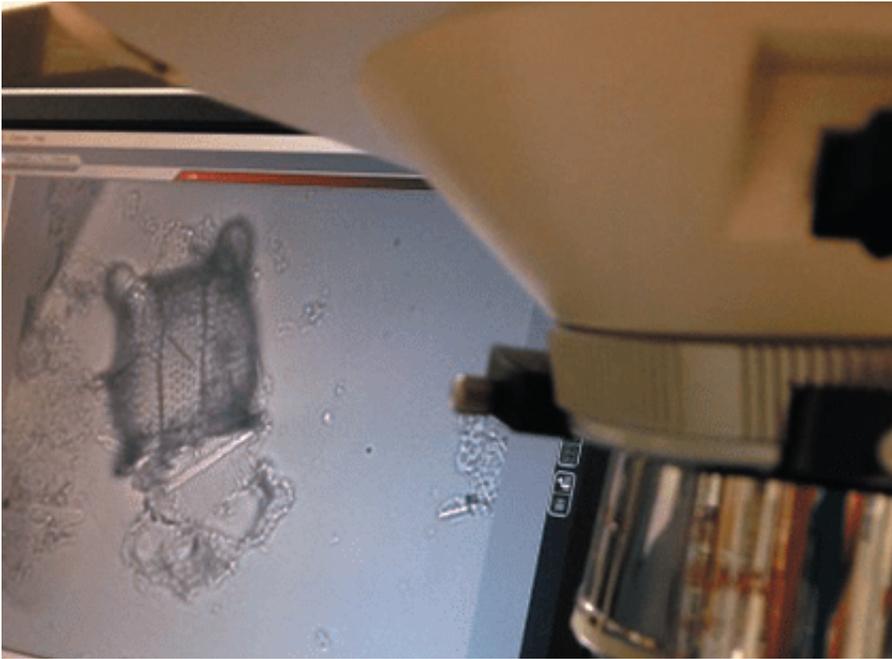
Over the past three decades, the Cuban-American artist has created art at the North and South poles and across 6 continents, including more than 150 public artworks, installations, collaborative murals and socially engaged projects. He has been commissioned to create art for CERN, the White House, the World Bank, the Florida Turnpike, Port Everglades, and Miami City Hall, among many other art, science, and government venues.

Cortada, who serves as the inaugural Artist-in-Residence for Miami-Dade County, received the Environmental Law Institute's 2021 National Wetlands Award and was included in the 2022 GRIST 50. Other accolades include: the Creative Capital Award (2022), the Home & Away Residency, Anderson Ranch, Aspen, Colorado (2022); New York Foundation for the Arts fiscally-sponsored artist (2008 and 2019); Rauschenberg Residency: Rising Waters Confab, Captiva, Florida (2015); and the National Science Foundation Antarctic Artists & Writers Program, South Pole (2006-2007).

The artist's work is in the permanent collections of the Perez Art Museum Miami (PAMM), the NSU Museum of Art Fort Lauderdale, the Whatcom Museum, the Patricia and Phillip Frost Art Museum and the MDC Museum of Art + Design, among others.

Cortada, who was born in Albany, New York, grew up and lives in Miami, Florida. He received bachelors, masters and law degrees from the University of Miami, where he currently serves as professor of practice at the University of Miami Department of Art and Art History with secondary appointments in the School of Law and Miller School of Medicine Department of Pediatrics. His studio and socially engaged art practice are based at Miami's Pinecrest Gardens.

To learn more, visit www.cortada.com.



Cortada used this microscope in Dr. Gaiser's lab to capture images of diatoms which he used in his digital works.

Special thanks to Dr. Gaiser and her Florida Coastal Everglades LTER (Long Term Ecological Research) team at the Florida International University and FIU School of Environment, Arts and Society.



CORTADA

Pinecrest Gardens
11000 Red Road
Pinecrest, FL 33156

www.cortada.com
[@xcortada](https://twitter.com/xcortada)

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