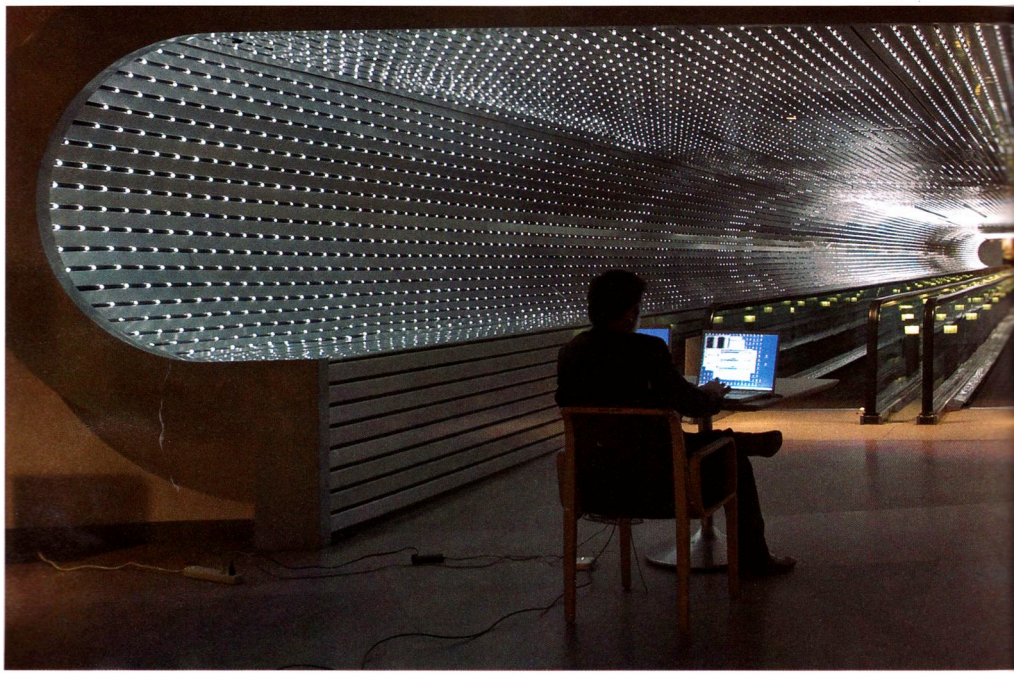
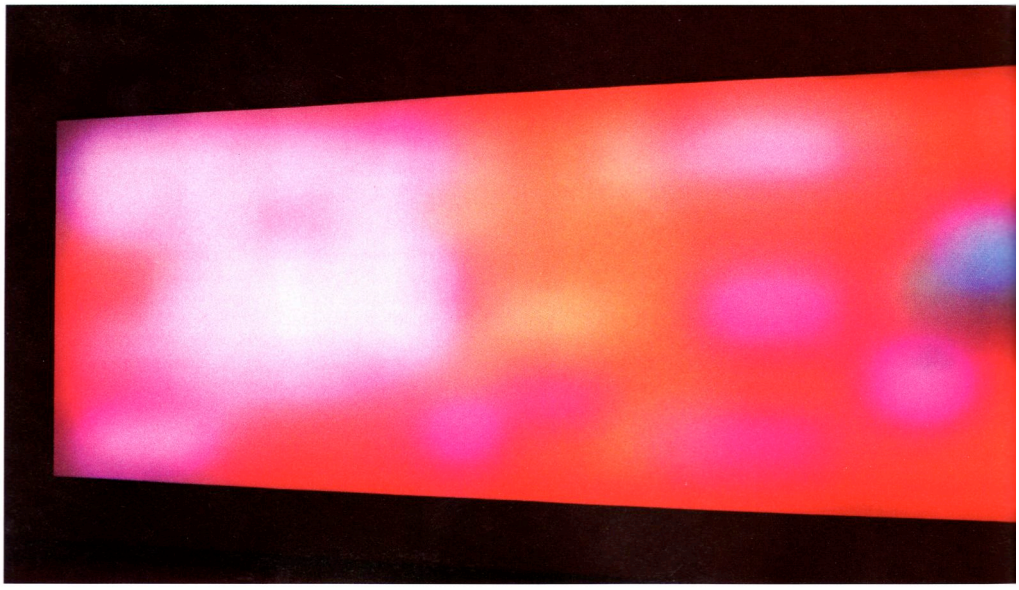
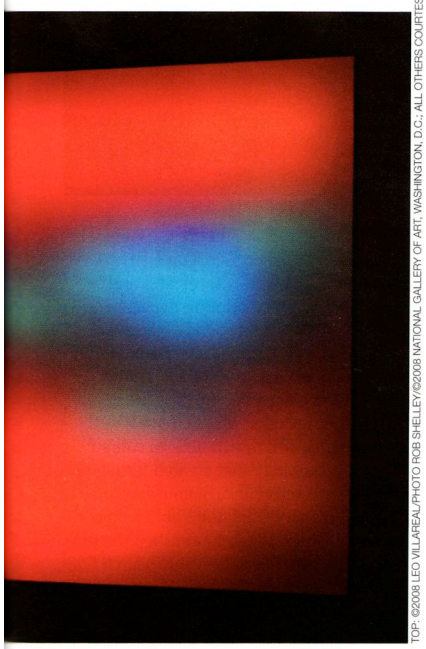
ARTnews





Sheets, Hilarie M. "Points of Light." *ARTnews*. June 2009.

Villareal's *Multiverse*, 2008, created for the underground walkway connecting the East and West Buildings of the National Gallery of Art, Washington, D.C. BELOW *Field*, 2007, subtly evokes Monet and Rothko.



TOP: ©2008 LEO VILLAREAL/PHOTO ROB SHELLEY/©2008 NATIONAL GALLERY OF ART, WASHINGTON, D.C.; ALL OTHERS COURTESY GERING & LÓPEZ GALLERY, NEW YORK

Points of Light

From his laptop computer, Leo Villareal orchestrates dazzling rhythmic productions generated by light-emitting diodes

BY HILARIE M. SHEETS

"I'm kind of like a *plein air* painter, except I have my laptop," says light sculptor Leo Villareal, who uses his computer to orchestrate his complex artworks combining light-emitting diodes (LEDs) and encoded programming.

The 42-year-old artist began working with strobe lights and bulbs before moving on to the more durable and energy-efficient LEDs, which provide electronic light based on combinations of three colors—red, green, and blue—that offer him a palette of 16 million variations. "The range of possibilities was kind of daunting because I was used to a single color lightbulb," says Villareal, who found that embedding LEDs in Plexiglas tubes that look like fluorescent bulbs enabled him to blend and diffuse color even more.

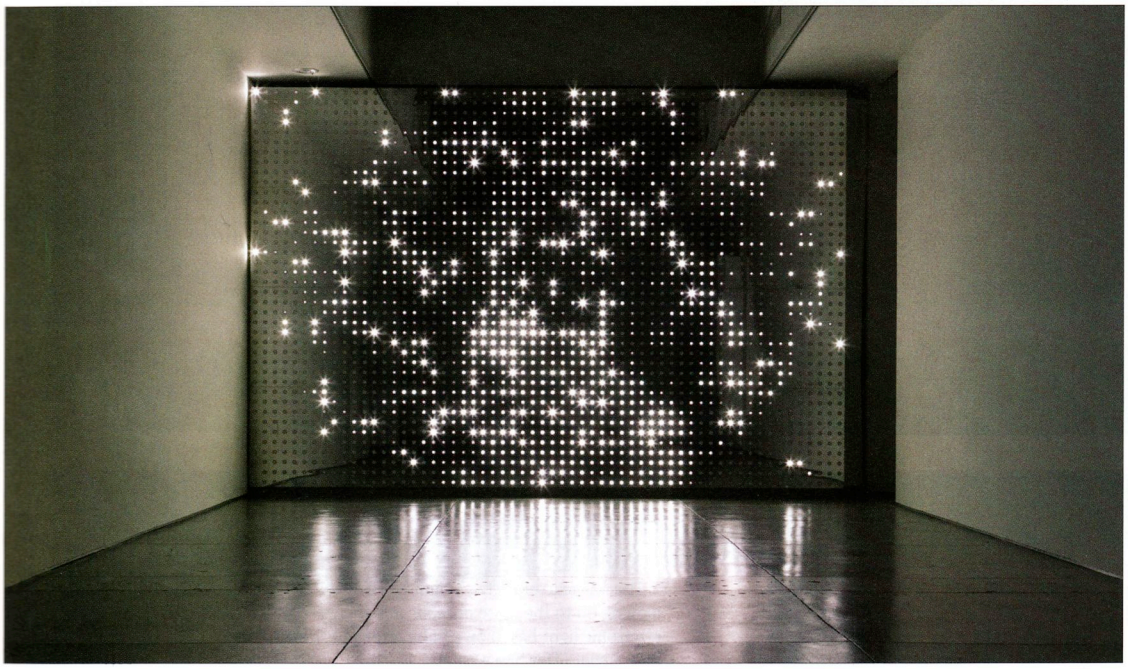
Villareal's work is composed exclusively of points of light, ranging from 16 strobe lights switching on and off to 40,000 white LED nodes performing dazzling acrobatics across the 200-foot walkway between buildings at the National Gallery of Art in Washington, D.C. Villareal sets up mathematical conditions on his computer and then puts the program in motion, watching how it plays out. "From a very simple set of rules," he explains, "these incredibly complex patterns emerge that suggest things from nature." He has used the logic of everything from the video game *Pong* to Newton's laws of acceleration and velocity to program the behavior of particles of light. "The patterning is a common denominator between the numeric world of cold, hard numbers and the biological, organic one," he says. "It feels like it's alive."

Hilarie M. Sheets is a contributing editor of ARTnews.

Villareal first became interested in the potential of computer-driven light as an artistic medium in 1998, when he learned about the British mathematician John Conway's *Game of Life*, a computer simulation of how cells live, die, and multiply. Fascinated by the patterns that rapidly evolved and reproduced themselves in the game, Villareal made *Red Life* (1999), a portrait of Conway's rules, composed of an eight-foot-square grid of red lightbulbs that turn on or off depending on their relationship to their neighbors.

"I used Conway's *Life* as an inspiration to come up with my own rules," says Villareal, sitting in his large Chelsea studio bathed in the glow of 2,400 white LEDs flickering from his wall-size, stainless-steel piece *Diamond Sea* (2007). His serious, steady demeanor is periodically disturbed by the antic yapping of his Pomeranian, which divides its time between the artist and his wife, Yvonne Force Villareal, cofounder of the Art Production Fund in New York. Their five-year-old son appreciates his father's work as a night-light.

"The rule might be for a single point to move across the grid, and when it encounters a boundary it will bounce," Villareal says, explaining how such trajectories work in *Diamond Sea*, which was included in his last show at Gering & López Gallery in New York, where he'll be exhibiting early next year. His works sell for between $9,500 for a small editioned piece and $3 million for a large-scale architectural commission. "Or you could create a structure that attracts or repels movement, almost like an ant farm but in a digital version," he continues. "I'm building up these sequences and looking for an element of personality. I'm interested in pattern recognition, which is one of the most basic functions of the brain. You start building up an idea of what the pattern is, and then it keeps shifting. Light is very attractive in this way, like looking into a fire. I think there's something that's connecting on a deep level in us."



In *Diamond Sea*, 2007, with its 2,400 white LEDs, a single point of light moves across the grid setting off a trajectory of different patterns.

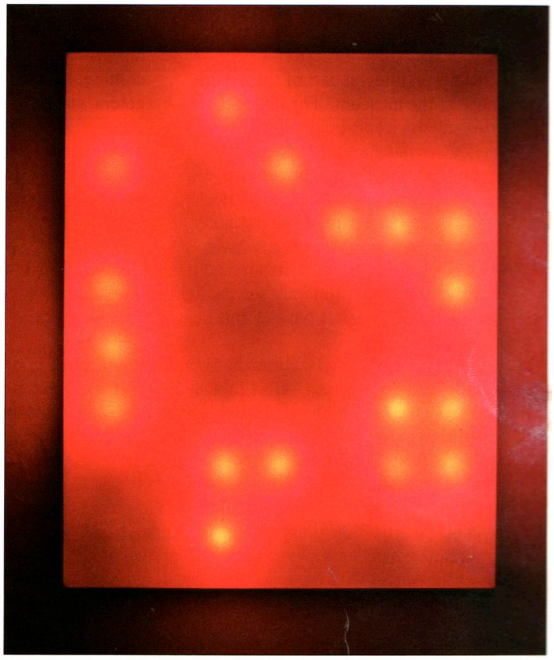
Villareal was born in 1967 in Albuquerque, New Mexico, and raised in El Paso, Texas, and northern Mexico. At 13 he got a computer and experimented with making graphics, but then lost interest. He went to boarding school at Portsmouth Abbey in Rhode Island and attended Yale University, where he became involved with theater and set design. He shifted to the sculpture department, creating environments with found objects and light, sound, and video. "I realized I could make installation sculpture that had a theatrical feeling, but I didn't need actors," says the artist, whose classmates included Matthew Barney.

After graduating, in 1990, he was drawn back to computers by the new wave of technology that created virtual reality. He enrolled in the Interactive Telecommunications Program at New York University, studying Photoshop and simulation, among other things. When he finished the program, in 1994, he joined the staff of Interval Research Corporation, a think tank in Palo Alto, California, financed by Microsoft cofounder Paul Allen.

"I was surrounded by these brilliant people—computer

people, engineers, artists, musicians—and the idea was to mix them together and define what the future would be," Villareal says. "There was certainly a utopian aspect to it." That year he also started going to the annual Burning Man festival in the Black Rock Desert of Nevada, where participants convene to build a temporary city and then depart a week later without leaving a trace. It was during his 1997 trip there that he made his first light piece.

"It was very easy to get lost there in the parched desert," Villareal says. "I took 16 strobe lights and hooked them to a microcontroller and wrote these basic programs to turn the lights off and on. I mounted it on top of my mobile home,



and you could see the flashing lights for miles. It was almost as if the piece were communicating. It was very compelling." Villareal, who had just moved back to New York, brought the piece to his studio and hung it on the wall. But because it was too bright to take in at close range, he put it inside an acrylic box, which diffused the light. "I realized that this was an amazing sculpture, and it opened a door to making meaningful work with a tiny amount of information." He continues to participate in the festival annually.

Portrait of the artist with his early, pre-LED work *Red Life*, 1999, which uses incandescent bulbs.

It was an incremental evolution from that first piece to *Horizon 2*, exhibited last fall at Conner Contemporary Art in Washington, D.C. For this work he stacked three 24-foot-long horizontal fixtures with 80 pixels inside each, creating a minimalistic landscape of shifting, dappled color.

In *Field*, which debuted in his 2007 show at Gering & López and was recently acquired by the Museum of Modern Art in New York, amorphous colored shapes float behind a monumental rectangular acrylic panel. Villareal had not set out to evoke Monet's *Water Lilies*—one of the first artworks to have an impact on him, when he was 16—or Rothko's diaphanous bands of color, but while composing *Field*, he recognized that the piece had a similar feel. He realized that art, artists, and nature follow similar rules.

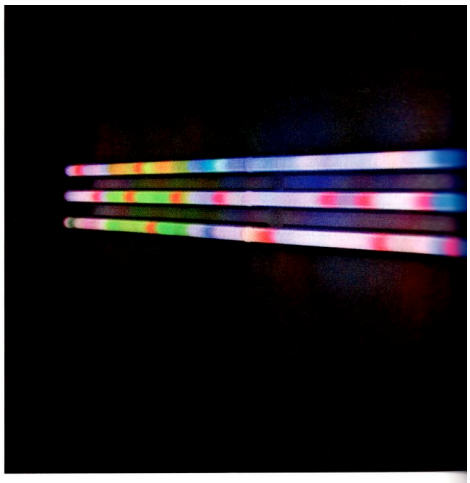
In contrast with the art of James Turrell and Dan Flavin, who have worked with light, Villareal's is grounded in sequencing and timing. He finds he has greater affinity with artists like Sol LeWitt and Peter Halley, whose work involves rules and systems.

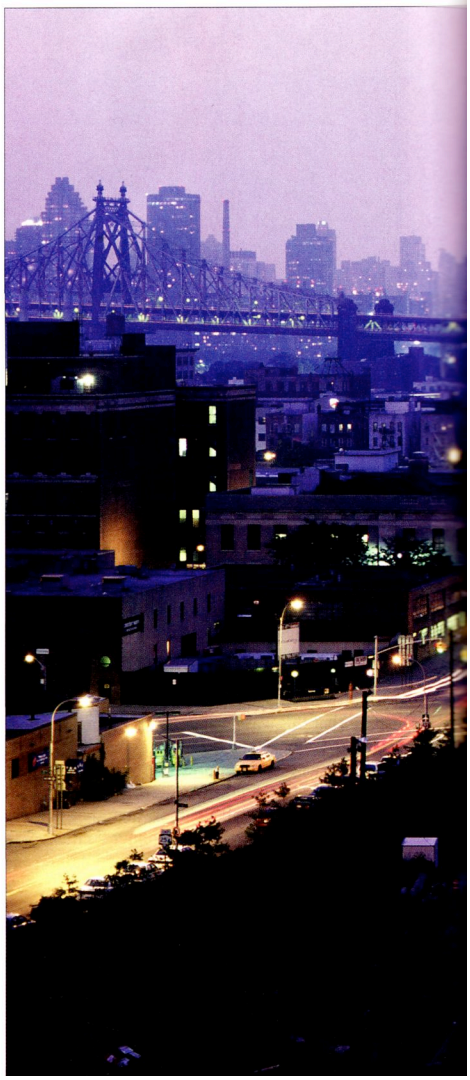
Architecture, too, has played a prominent role in Villareal's investigations. A 2003 invitation by Alana Heiss, then director of P.S.1 Contemporary Art Center in New York, to create a light installation on the scaffolding of the museum while it was undergoing renovations turned out to be an important milestone for Villareal. "From the very beginning when I started working with light, I was thinking about buildings as displays and windows as pixels," he says. He ended up creating a grid of LEDs, 45 feet high and 120 feet wide, mounted with nylon strips on the mesh enclosing the scaffolding. He programmed the LEDs to respond abstractly to the chaotic urban activity of the surrounding bridges and roadways as well as the FreshDirect billboard casting its glow on P.S.1.

That installation led to a commission from the Albright-Knox Art Gallery in Buffalo for its 2005 show "Extreme Abstraction." Villareal chose the dark Modernist facade of the

1962 Gordon Bunshaft addition—facing the original neoclassical E.B. Green building—on which to affix his grid of white lights. It has since become a permanent installation at the gallery, which also acquired Villareal's early work *Red Life*. "One of the things that makes our piece so successful is that it's seamless with the architecture—you don't think about where it begins and the building ends," says director Louis Grachos, whose office window looks out on the ever-changing light show and who thinks the level of integration Villareal achieved was a breakthrough for the artist.

"It activates the building in a really interesting way, whether you're inside looking out or in the outside courtyard looking up or walking around the campus or driving by at night," continues Grachos. "It signifies life and has a pulse that's almost hypnotic in its patterning. It's become an integral part of the experience at the museum." For Villareal, treating the iconic building with respect was paramount. "The mechanism that makes the light patterns disappears through the black glass, and you're not aware of the computer or the wires," says the artist, who in this piece used layered software and mixing tools in the coding for the first time. "You only see the light, the visual manifestation of the code. It doesn't have all this baggage of 'new media.'"





TOP *Horizon 2*, 2009, is a minimalist construction with shifting, dappled colors. BOTTOM *Supercluster*, 2004, on the scaffolding of P.S.1 as the building was being renovated.

Last fall Villareal brought his unobtrusive touch to another iconic structure—the I.M. Pei–designed underground walkway connecting the National Gallery's West Building with Pei's East Building. "Leo's work is so elegant and mesmerizing that I thought it could mark this journey between the two buildings in a more significant way and literally illuminate the architecture," says associate curator Molly Donovan, who proposed the project after seeing the artist's piece at the Albright-Knox.

Villareal made multiple trips to the National Gallery to try out light sequences with the codes he'd developed and to determine what worked and what was worth capturing. "It really is about getting in the space and seeing what's going to happen. I can see pixels on my screen, but they look nothing like the actual pieces just because of the spacing and the quality of the light." In the finished piece, on view for the rest of the year, the software continually reshuffles the sequences, so the order and layering and duration of each are random. "The space already had the feeling of being a scientific instrument of some sort, like an accelerator," says Villareal. "It's exciting to move light across such a long distance. You're with people and you're wrapped in light. It's a very social experience."

Villareal, who likes to listen to electronic music mixed by his friends and who was included in the "Visual Music" show at the Hirshhorn Museum in 2005, sees a strong analogy between his work and music. "My compositional method of building up patterns and breaking them down and using certain crescendos is similar to what happens with sound," says Villareal, who will have his first museum survey next summer at the San Jose Museum of Art. "I'll often talk about tuning pieces, especially in a site-specific installation. I have to be there in the space and work with the light and fine-tune it to be at just the right level. They become like instruments." ■