

Virtual Views: Digital Art from the Thoma Foundation

February 3-July 16, 2017

Drawn from the extensive Chicago-based collection of Carl and Marilyn Thoma, *Virtual Views* explores the growing importance of electronic media in contemporary art as seen in a diverse selection of works by artists who are pioneers in the use of LED (light-emitting diode), LCD (liquid crystal display), and computer-driven imagery. The nine works in the exhibition are comprised of synthetic materials and powered by digital technology, yet the rhythms and patterns of their imagery are derived from nature. This area of strength within the Thoma Foundation's digital art collection also echoes East Tennessee's dual identity as a technological corridor containing Oak Ridge National Laboratories and the Tennessee Valley Authority, and as a biodiverse wilderness area that includes 244,000 acres of the Great Smoky Mountains National Park. On a broader level, *Virtual Views* reflects the reality of a contemporary global culture whose general function and relationship with the natural environment are increasingly mediated by digital technology.

Large flat screen-based forms by **Rafael Lozano-Hemmer** and **Daniel Rozin** take full advantage of the interactive capabilities afforded by digital technology. Using algorithmic programming, cameras, and monitors, they create generative imagery that depends on audience participation. Found archival images of the natural world are optically transformed and digitally reconstructed by artists **Jim Campbell** and **John Gerrard**. Looping animations by **Leo Villareal**, **Craig Dorety**, and **Jennifer Steinkamp** explore the mind's capacity to comprehend nature's complexity. Works by **Alan Rath** and **Björn Schülke** are encased in sculptural bodies that extend their electronic imagery into physical space.

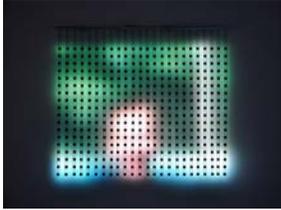
Through these diverse strategies and formats, the artists in *Virtual Views* create compelling statements about technology and the natural world. Several include imagery whose rhythms, textures, and contours are strikingly organic in character and natural in appearance despite being composed of synthetic elements. In others, found images or generative processes serve as links to nature and its evolving ecosystems. A corresponding evolution in imaging tools promises to equip future generations of artists with the creative means to challenge in new ways the narrowing distinctions between virtual and real. While reflecting the expanding presence of digital technology in contemporary society, *Virtual Views* offers evidence of its growing role in reshaping the landscape of contemporary art. Continued support of devoted collectors like Carl and Marilyn Thoma, coupled with broader institutional validation, promises to accelerate this transformation.

Virtual Views is organized by the KMA with the generous support of the Thoma Foundation and presented in conjunction with the 2017 Big Ears Festival March 23-26.

Presenting sponsors: Jennifer and Greg Dunn

Jim Campbell

(Chicago 1956; lives and works in San Francisco)



Home Movies, Pause, 2014
LEDs, metal, wire and custom electronics

“I call myself an electronic artist,” says Jim Campbell. “I work with electronics. Mostly, more recently, I work with light.” Campbell, expands the Light and Space legacy of artists like Dan Flavin and Robert Irwin by customizing LED networks in order to produce optically charged phenomena. Campbell worked as an electrical engineer in the high-definition television-chip industry in Silicon Valley and then began making light-and-circuit-based animations in 1985. His artworks are prized for the way they boldly reconfigure new technologies.

Home Movies, Pause, is a synchronized grid of LEDs facing the wall. The LEDs project animated light onto the wall like a screen, each node a miniature projector of digital data. The LEDs could be called pixels because, in total, they mimic the experience of screen display resolution. Whereas a typical HDTV monitor may have two million pixels, this Campbell artwork has just several hundred. Campbell calls this his “Low Resolution Series” because the pixels are spread so far apart, thereby asking: what is the minimum amount of pixels or data needed for a viewer’s brain to see, recognize, and interpret the video imagery? By reducing the pixel count, or resolution, Campbell toys with the edge of visual comprehension, teetering his image on abstraction.

The low-resolution, high-technology ‘screen’ plays footage from family videotapes, including the artist’s own vintage stock and some found online. Despite the reduced resolution, one might grasp not only the animated figures, but also their behavior, intentions, and mood.

Craig Dorety

(Oakland 1973; lives and works in San Francisco)



Offset Circles—Yellow Flowering Tree Against Blue Sky, 2014
LEDs, custom electronics, alupanel

As the title reveals, Craig Dorety's artwork displays an image of a tree with yellow flowers set against a blue sky—although the tree, its flowers, or the sky may not be recognizable as such. Dorety engineered a method to animate the still digital photograph of the flowering tree (found via Google's image search) through a layer of networked LEDs woven through concentric circles of cut, shaped aluminum. Each line of pixels is fed virtually through the light box, like a filmstrip through a projector, thirty lines per second. Like his mentor Jim Campbell, Dorety's digital light artworks are steeped in traditions of abstract and Op art, while mining advanced communications materials for new methods of creating a new kind of moving image. Dorety has described his inspiration for the series by recalling the visual hallucinations he experiences during ocular migraines.

John Gerrard

(Dublin 1974; lives and works in Dublin and Vienna)



Dust Storm (Manter, Kansas), 2007

Real-time 3D software animation on plasma screen with custom frame

Dust Storm (Manter, Kansas) depicts a virtual landscape from the catastrophic Dust Bowl of the 1930s using a composite of historic and contemporary photographs in a simulated animation that progresses in real time. A 3D gaming engine advances the threatening dust cloud pixel-by-pixel, almost too slow to witness. The time of day in the landscape reflects the real time at the reference site in Manter, Kansas—a tiny Midwestern farming town. As the scene will never repeat itself, the storm is forever advancing on its destructive path.

The Dust Bowl caused both environmental and economic devastation. The advent of fossil-fuel powered farm equipment initiated the industrial agriculture movement in the U.S., but aggressive over-farming led to the conditions for the massive dust storms that wrecked farms and cities in the U.S. Plains regions. This, in part, triggered economic collapse and the Great Depression.

Gerrard considers the historic catastrophe in light of recent U.S. conflicts in fossil-fuel-rich countries. The artist magnifies the destructive intensity of the Manter dust storm by adding imagery pulled from photographs of explosions in Iraq and Afghanistan taken by contemporary U.S. soldiers. “The Dust Bowl,” says Gerrard, was “the start of the Oil Age.” Our economy’s addiction to refined fossil fuels could cause additional disasters, the artwork seems to say. This is why the depicted dust storm forever looms in the near distance.

Rafael Lozano-Hemmer

(Mexico City 1967; lives and works in Montreal and Madrid)



Pulse Index, 2010

Plasma screen, computer, custom software, digital microscope, industrial camera, and metal enclosure

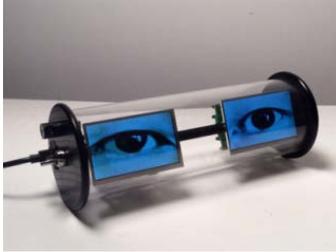
Pulse Index invites viewers to insert their finger into a digital microscope, which records their fingerprint and heartrate. The fingerprints are added to a visual database of accumulated past participants. Each fingerprint image throbs at the rate of the individual's heartbeat. Only the last 125 participants are included; when the inventory is full, each new addition bumps off the oldest collected fingerprint. The process recalls the biogenetic life cycle: families, generations, birth, and death.

"An important aspect of my work is that the pieces are out of my control," says Lozano-Hemmer. In other words, the changing composition is dictated by viewers, not the artist. In addition, the experience of touching art is rare. Since viewers are given little signal to engage and touch this work, the artwork calls into question how art can direct and modify a viewer's behavior. Lozano-Hemmer allows viewers to discover the interactive quality on their own terms, either by observing others or by following their own curiosity.

This artwork rouses individuals to take action within an anonymous system, a symbol of the many surveillance metrics that track our movements and lives, in effect placing the power back in the hands of individuals.

Alan Rath

(Cincinnati 1959; lives and works in San Francisco)



Electric Eyes, 2014

Digital video on LCD screens, with custom electronics, in Acrylic, Delrin, FR-4 fiberglass and nylon

Alan Rath's digital sculpture embeds video of his wife's eyes within a specimen vial. Her pupils behave with frenzy, as if communicating anxiety about being bottled, tagged, and stored on a shelf for study. Captured on two LCD screens, and encapsulated within a transparent tube, the gesturing eyes impart a disembodied loss of control.

Since the mid-1980s Rath has produced many variations of his digital body sculptures, which have become signature objects in his widely recognized career. The electronic eyes are a commentary on the dangers of human-machine co-evolution. "We are cyborgs already," says the artist. "Our consciousness is fundamentally altered because we grew up in an artificial environment." Rath does not seem to embrace the relentless power of technology in our lives—even if it is "a reflection of the people who make it," he concludes. Despite the dystopian view, Rath manages to eke out a bit of humor in his pseudo-robotic artwork.

Daniel Rozin

(Jerusalem 1961; lives and works in New York)



Selfish Gene Mirror, 2015

Custom software, webcam, computer and monitor

Daniel Rozin is an artist, developer, and associate art professor at New York University's Interactive Telecommunications Program. His *Selfish Gene Mirror* simulates the behavior of genes during biological evolution, fighting to reproduce. The image you see onscreen is composed by the artist's customized "Darwinian algorithm" in which a "gene" is a line of about ten pixels. Each gene is programmed to compete for its ongoing existence—thus exhibiting "selfish" behavior. Of the roughly 10,000 active members in this digital gene pool, only half will survive, replicate and propagate your reflected image.

Rozin's artwork illustrates the theory of natural selection described in Richard Dawkins' 1976 book *The Selfish Gene*, which updated Darwin's theory with a modern metaphor: computer engineering. "Genes are master programmers, and they are programming for their lives. We are survival machines," Dawkins famously wrote about DNA. Selfish genes do not equate to selfish people in this analogy. Simply, genes compel all living beings to go on, to persist beyond our singular bodies.

Björn Schülke

(Cologne 1967; lives and works in Cologne)



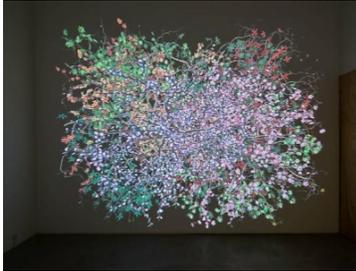
Spider Drone #3, 2013

Wood, brass, steel, mirrors, camera, screen display, propeller motors, paint, sensors, LED and custom electronics

Is Björn Schülke's *Spider Drone* a surveillance predator or a protector? That ambiguity excites the artist and has debuted a new kinetic drone sculpture nearly every year since 1990. He was first inspired by President Ronald Reagan's Strategic Defense Initiative, an ambitious military technology development program conducted by satellites, spacecrafts and space telescopes, and dubbed "Star Wars" by its critics. Schülke's drone has built-in motion sensors to track viewers' movement, reflect their image in its live digital video feed, and react. Using switches, timers, relays, and custom circuits, Schülke's drone seems to make its own decisions, sometimes even performing absurd movements, a response the artist finds humorously poignant. The drone, although whimsical, reminds that we are always under surveillance, our identities continually extracted as data, whether we like it or not.

Jennifer Steinkamp

(Denver 1958; lives and works in Los Angeles)



Bouquet 1, 2013

Computer-generated animation, computer, and projector

Jennifer Steinkamp has been creating computer-animated floral imagery since 2002. Her mural-sized *Bouquet 1* imaginatively compiles several types of flowering tree branches from different seasons into a single arrangement that undulates in a slow, rhythmic wind, seamlessly without beginning or end.

Steinkamp has said that the scale of her digital mural, which is projected directly on the wall, works to “dematerialize space” in the similar capacity of a James Turrell light installation, as if the architecture, augmented by the digital projection, becomes a virtual or illusionistic “hypersurface,” as she calls it. This is a skin of cyberspace woven into real space.

Steinkamp’s commitment to representing florals in her digital murals harkens to art historical practice of flower still-life paintings, as well as the so-called language-of-flowers of the Victorian age, when a certain type of flower or their combination in bouquets could communicate a specific desire to their recipients.

Leo Villareal

(Albuquerque 1967; lives and works in New York)



Big Bang, 2008

1,600 LEDs, Mac mini, microcontroller, circuitry, and anodized aluminum

Leo Villareal uses networked LEDs in ways that have never been used before. *The Bay Lights*, for example, is a LED installation on the Bay Bridge, which has been celebrated as the world's largest LED artwork. *Big Bang*, a gallery-scaled LED artwork, is similarly gigantic in its aims. Its swirling light pattern is dictated by live software, meaning the artwork is operating in real time. With 1,600 LEDs, each capable of multiple color illuminations, the possible number of light combinations running through the random pattern sequence is more numerous than the number of estimated seconds in a human life. Therefore, the artwork will never repeat its configuration during a viewer's lifetime.

"There are things in nature that inspire me," says Villareal, "like wave patterns or natural systems that at first glance appear to be very complex, but when I study them further there are simple rules that govern them. That's what I try to get at in my code—building simple rules that refer to some of these ideas." Light, says Villareal, is "universal and powerful. We have a deep attraction to it."