

Engineers & Artists: Sacramento

**Six Engineers.
Six Artists.
Innovative
New Work.**

Six original projects created through
unprecedented collaborations between
between engineers and artists.

Presented by Verizon, inspired by 5G.

verizon

Innovation, technology, and humanity.

The works in this exhibit are **inspired by 5G**, the next-gen network technology that has the power to usher in the Fourth Industrial Revolution. Like other world-changing innovations that came before it, **5G is poised to unleash new possibilities.**

A doctor, through 5G-enabled robotics, will be able to perform surgery on a patient miles away. Superconnected cars will carry people to their destinations safer, faster, and with less pollution. First responders, supported by a 5G-powered Internet of Things, will deliver medical and emergency materials to the precise areas of need based on near real-time information.

All of this is possible. And it's just the start of how 5G will transform the way we live, work, and play. But what is it?

5G represents a massive upgrade in the data transmission speed (many times faster than a blink of an eye) and a deep reduction in latency or lag. With its potential for gigabit speeds and unprecedented response times, 5G will make endeavors requiring near-instantaneous response and data analysis — like remote surgery — possible.

5G is a technology that expands our vision of what the world can be. It's technology that can improve lives, reinforce connections, and profoundly change everything from medicine to manufacturing. Like all transformative technologies, it's about people, innovation, and the ways we live.

We invited six pairs of Sacramento-based engineers and artists to collaborate on a piece of art in response to 5G and the powerful ideas it evokes. These were the broad themes they considered.

Speed and Humanity

Technology doesn't just happen. People create it. It's part of the human desire to go faster, farther, higher. Our knowledge, like the universe we live, is ever-expanding. Technology at the speed of 5G will become more than we imagine it.

Portraits of Engineers

5G will power giant advances in VR, AR, AI, robotics, and totally new technologies. But behind each new innovation are people — the engineers building the tools needed to keep up with our own innovation and dreams.

The Future of Together

What does a world where ideas and information move faster than ever before look like? Smaller for one. More connected. More collaborative. Our experiences expand to augmented and virtual realities unfettered by the physical here and now. "Together" becomes a moment about people, their ideas, and finding whatever is possible.

Inside the Systems of Technology

With speed of connectivity, a complex network of small cells, and in-device sensors — soon, whatever can be connected, will be connected. Machine-to-machine technology will bring connected solutions to every part of life.

Revealing the Invisible

Through faster speeds and unprecedented response times, 5G will allow the Internet of Things to reach its full promise — a world of connected devices and machine-to-machine communication as never before. Millions of sensors will collect billions of pieces of data, harnessing a world of data for the benefit of millions — all in near real-time.

From the printing press to the steam engine, electricity to the internet, new technologies have always driven innovation, transforming the ways we live. Like those that came before it, 5G has the ability to revolutionize our world.

But it requires the human element. The artist and the engineer. The innovator and the dreamer. People who together will imagine what a brighter future can be and then build it.

Curator's Statement

With the project themes serving as a catalyst, six Sacramento-based artists set out to create new pieces of artwork in conversation and in participation with an engineer, with whom they had never worked and, in most cases, had never met. The resulting installations seen here, like the themes themselves, are extrapolations of rethinking the possible and the importance that local innovators have in driving innovation forward.

Seeing the unseen

Perhaps just as important in these works is what is not seen — that these exchanges between two different types of creators also resulted in relationships. This demanded new dialogues, new understandings of different practices, and new processes — artists going to engineers' offices, engineers going to exhibition openings, and artists and engineers together testing new ways of utilizing materials and processes.

These are the underpinnings of what is inherent in the solutions and challenges of progress: to bring new ways of seeing, thinking, and connecting into existence and into conversation with others, which hopefully inspires not just a contemplation of the objects at hand, but of the concepts behind them.

Considering time and place

The aesthetics, approaches, and materials of each artist-driven project in this exhibition vary greatly, however, there are several recurrent threads that tie them together. The concept of representing data is ubiquitous, whether this is bringing into view what is unrecorded or overlooked, or nuancing that which is — there is in these works a call to question what is seen and what goes unseen, in order to create a more nuanced version of technology that is more in touch with our corporeal existence.

Within this context, most artists, if not all, approach notions of futurity with considerations of the past, acknowledging that progress doesn't happen in isolation. Perhaps most fantastic about this grouping of works, though, is their relevance to place, to Sacramento in particular. As practitioners, each participant brings to the table their own experiences of the city, of its realities, gaps, and geographies. In this way, each work is rather site-specific, both in relation to the city and its presentation in this room today.

The human factor

It is intriguing, in a way, that the one theme of the five that wasn't self-selected by any artist was that of Inside the Systems of Technology, because this might be the one theme that connects them all. For, what is inside is that of humans, of networks of people, ideas, and processes — and that is what one encounters when considering these individual projects in communication with each other together in the same room. The works created for Engineers & Artists: Sacramento hold space for and give equal weight to both art and technology as essential to the human experience, and in doing so, manifest new ways to connect to the world around us.



Kara Q Smith is a professional in the contemporary art world with 10+ years experience working for museums, galleries, and non-profit institutions. She has curated exhibitions, spoken at art fairs and symposiums, officiated workshops and lectures, and written for numerous publications. She received her MA in Urban Studies from San Francisco Art Institute and her BA in Art History from Birmingham-Southern College.

What is our relationship to our virtual selves?



Mikko Lautamo

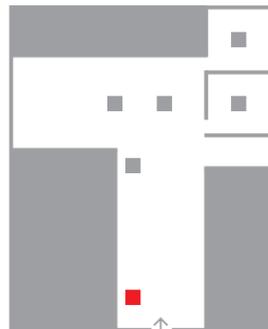
Partner engineer:
Daniel Diaz

The work of new media artist **Mikko Lautamo** often involves complex explorations of systems, software, and synapse, tapping into the interactions between technology and the biological. This practice extends to this project addressing the theme of **Speed and Humanity**, along with partner engineer **Daniel Diaz**. The projection-based installation uses a motion sensor that tracks human movement through the space, programmed by Diaz, to create the mesmerizing graphic elements on the wall, programmed by Lautamo.

The artist painstakingly experimented with the coding, wanting the visualizations to become a way to represent the dichotomy of digitally created avatars versus the nuanced and fluid movement of corporeal facsimiles. One might see a digital rendering mirror one's movement through the space, but that occurs amidst the quick, erratic movement of elements that are controlled by artificial intelligence (i.e. programmed). These multiple sets of "beings" mingle and mix, creating constantly changing patterns and designs.

The difference in the speed of motion between what is transmitted from human movement, which enters and exits the screen area, and what is programmed movement, which remains in the frame, is a metaphor for the relationship we have to our virtual selves, which is not fixed and changes over time. Our relationship to speed in this way is similar: we don't want to speed up our existence, but we use speed to amplify our existence and connection within the world. The entanglements between speed and humanity, virtual and "real," are the underpinnings of what Lautamo is mapping through designing processing code to communicate with human presence, and vice versa.

arc, 2019; computer, processing software, camera, projection; dimensions variable



How do we connect to the natural world in a digital age?



Summer Ventis

Partner engineer:
Rustin Vogt

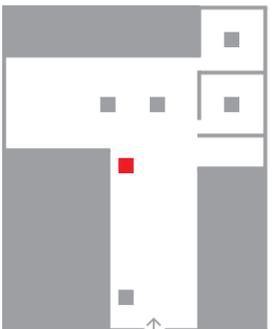
Artist and printmaker **Summer Ventis** pushes the boundaries of the medium to create poetic installations that probe the relationship between people and environment. Paired with fellow Sacramento State professor and engineer, **Rustin Vogt**, the two began discussing their connection to a shared landscape: the college campus, and, more specifically, the arboretum.

Utilizing the theme of **Revealing the Invisible**, the artist began to consider the often-not-seen systems that control or organize our environments, and how habitats might respond to their imposed regulations. Ventis focused specifically on the now-outdated practice of placing metal tags on trees to keep track of them and display their reference numbers (the process is now done digitally). Over time, the bark of the trunk has started to grow over and around the small metal placards, rendering them not only useless, but now an engrained part of the tree itself.

The artist worked with Vogt to create a replica of one of these tags and the engineer carved its likeness into a piece of a tree that had recently been removed from campus by the power company. The artist then used the wooden surface to print its likeness on paper, presented here with the fabricated tag and CNC routed limb. The artist makes visible two systems: that of the classification of organic beings and that of the artistic process. The revealing of both of these systems is a way of connecting human activity to what might be perceived as natural or organic. Our relationship to what is fabricated and what is not can be fraught, finding moments in which to connect to what is real and to the moments that help us bolster our perception of our relationships to each other and the world around us.

Counting Trees I, 2019; CNC-carved tree, print on paper, stainless steel tag; dimensions variable

Counting Trees II, 2019; toner transfer on Rives BFK; 8 x 10 in.



In what ways can we map disparate communities?



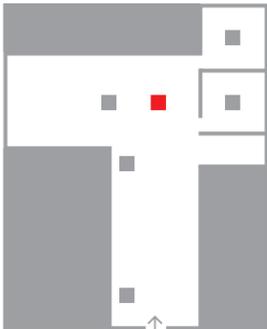
Aida Lizalde
Partner engineer:
Megan Carter

For this project, interdisciplinary artist **Aida Lizalde** sourced her subject matter directly from **Megan Carter**, her partner engineer who works for the city of Sacramento on transportation initiatives. Facets of urban geography that inform Carter's profession also influenced the artist's work: the movement of people, cars, bikes; how roads are made, moved or altered; the implementation of signage as a tool to direct/inform citizens.

Focusing on the form of the map, the artist became a cartographer, creating a series of five maps based on a trove of existing materials that categorizes information from the past and present, of waterways and streets, demographics and natural resources. Presented in layers that mesh time and place, one is always seeing each of the maps in relation to each other; sometimes they even appear overlapped.

Symbolizing the theme of **The Future of Together**, Lizalde's work connects areas of Sacramento that may not ever exist together on a real map. There is a unity in her presentation of factual and imaginary information, of buried train track lines and future sites of development. It all comprises what Sacramento is, which is both more than the sum of its (mapped) parts and more than just what is present or seen. Lizalde presents the city as a living ecosystem whose boundaries don't define its potential, but that where it's been is just as important when considering where it's going, and where we find ourselves within it.

Untitled, 2019; five gouache and ink on paper drawings, acrylic; 18 x 24 x 16 in.



How do we project a future that recognizes our past?



Tavarus Blackmon
Partner engineer:
Vik Singh

Tavarus Blackmon frequently culls imagery for his work from popular culture and art history. For this project, working with the theme of **Portraits of Engineers**, the artist concentrated his focus on the under-recognized industrial designer Charles Harrison, who anonymously reengineered the View-Master to be produced faster and cheaper, and thus more widely available. Blackmon has created one large-scale print portrait of Harrison taking a selfie in front of the Sacramento skyline, and two digital works inspired by the plastic stereoscope itself. All three pieces celebrate Harrison's achievements in a contemporary fashion, but also contemplate the challenges of working as an African-American designer in the Civil Rights era.

Partnered with local Verizon engineer **Vik Singh**, who works on implementing 5G in the city, Blackmon was moved to further think not just about the possibilities of higher network speeds but of the people who work behind the scenes to make new technologies possible and available.

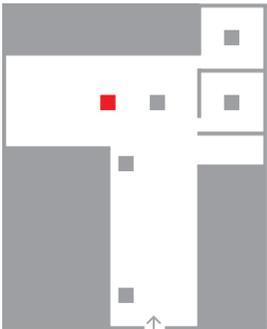
In this way, the artist also addresses the theme of **Revealing the Invisible**, the concept emphasized in his second print featuring a psychedelic rendering of a human form whose features are mostly abstracted except for its pronounced eyes, sending cones of vision out toward the viewer. This accompaniment to the Harrison-related pieces offers a chance to revel in the relationship between the View-Master's revolutionizing new ways of seeing in one's own home and the potential that 5G innovations will have in a similar fashion, conjuring both the past and future with an emphasis on the role of visibility.

Portrait of Charles Harrison, 2019; archival pigment monoprint on vinyl; 80 x 80 in.

Hindsight, 2019; archival pigment monoprint on vinyl; 80 x 80 in.

Untitled, 2019; graphic interchange format; continuous loop

Master, 2019; digital video with sound; 1:58



What lies beneath the surface of innovation?



David Stone

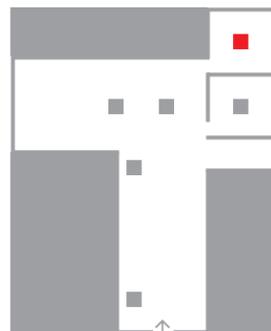
Partner engineer:
Jordan Duval

Artist **David Stone** often plays the role of engineer in his work, using complex codes and programs to create immersive, interactive environments through projection mapping. Collaborating with engineer **Jordan Duval**, the pair utilizes a Kinect sensor to track body movement in the room to feed body data through programming language and design software to create a real time output of visualizations that do more than just mimic movement in the room. Instead, the artist intends what is seen to feel more like digital apparitions that defy their interactive nature, as if they may have always existed.

The haunting presence of the installation is the result of hours and hours of work, and layers of code going on in the background. Bringing to the surface what is normally quietly happening behind the scenes taps into the theme **Revealing the Invisible**. What is behind the messages on the surface? Stone and Duval provoke curiosity and intrigue, and highlight what is behind technology, behind innovation: lots of time, experimenting, failure, multiple languages, and intricate conversations between the tangible components of computer hardware.

Viewers, or perhaps users, participate in this process through the variations of bodily presence. One is both participating and immersed in the experience, connected to the work. Yet neither is exactly a result of the other. There is a feeling of meaningful coincidence. This synchronicity Stone and Duval have instituted might just reveal a parallel of the impact (and potential) of technology in our everyday lives.

CQ, 2019; maple composite, rear projection film, projector, computer, kinect cameras; dimensions variable



How do we make sure the future reflects us?



Bryan Valenzuela

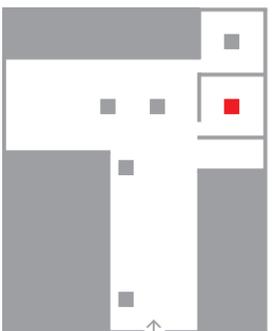
Partner engineer:
Kaleb Clark

Bryan Valenzuela, known for creating large-scale intricate painted murals, pushed the limits of his artistic practice for this project by experimenting with new materials in collaboration with his partner engineer, **Kaleb Clark**. The core of the work is a shiny black box that invites the viewer to peer inside, upon which one finds layered images, etched and drawn onto pieces of overlapping acrylic and illuminated by glowing light. The viewer sees a pair of hands atop repeating letters and numbers weaving around each other in loops, appearing to emanate from the unfurling fingers.

The artist extracted the fragments of text from a treatise on the origin of consciousness by Douglas R. Hofstadter. The numbers are also excerpted from the text, as well as human dna sequences, translated into hexadecimal and binary code. For Valenzuela, the box acts as a metaphor for horizon, that beyond what we can see, yet, when one looks into the work, a mirror reflects our likeness within it. Further, the metaphor of "the black box" beckons associations with the unknown, the mysterious abyss.

This ethos is paralleled in the room surrounding the box, replete with a sound component and painted canvases on the walls whose imagery echoes that of the acrylic drawings. Valenzuela's work finds multiple intersections with the theme of **Revealing the Invisible**. Namely, the manifesting of ourselves within what is typically imperceptible: the future -- that thing that is so awe-inspiring, the origin of creative endeavors, and what we often strive to uncover.

Black Box Cathedral, 2019; acrylic sheets, wood, mirror, acrylic marker, latex paint, canvas, LED lights, faux fur rug, speakers; dimensions variable



Artist bios

Aida Lizalde is a multimedia artist living in Sacramento. Her work consists in researching issues of citizenship, power, heritage, nationality and other personal and political experiences. She has been in recent exhibitions at the Museum of Northern California of Chico, the Marin Museum of Contemporary Art, Beacon Project Sacramento, SOMArts Cultural Center, The Latino Center of Art and Culture, and Axis Gallery. She received her BA from UC Davis.

Recent artistic projects include a series of ongoing outdoor installations creating physical-yet-arbitrary geographical borders that deals with idea of frontiers and belonging and the process of assimilation, ownership, and identity, inspired by the artist's own personal journey. Her sculptural practice includes objects that are the result or records of physical process, referencing corporeal existence. They become almost performative, referencing tactile, immersive, and ritual movements related to the body. Aida has also produced multiple collaborative and interactive artistic installations that draw upon various themes and are designed to engage with multiple publics.

Bryan Valenzuela lives and works in Sacramento. For over a decade he's been aiming to perfect a unique drawing technique involving the atomization of the figure by carving out shape and light with handwritten text. Though virtually unnoticeable from afar, once the viewer steps closer to each work they are engulfed in a barrage of words intermingled with other mixed media elements such as needle and thread, acrylic paint, and collage. His subject matters explore connections between perceived opposites (microcosm vs macrocosm, order vs chaos) and aims to weave disparate elements into a whole. He frequently employs symbols that meld together interests in psychological states, the natural world, physics, mathematics, and astronomy to name a few.

Bryan has created numerous large-scale public murals both in Sacramento and elsewhere, and has been featured in many exhibitions in the area. He also completed a large-scale installation in the Golden 1 Center, titled *Multitudes Converge* (2016).

David Stone is a creative code and technology, projection, mixed and new media artist that uses various tools to facilitate the creation of his work, including microcontrollers, ICs, depth cameras, Processing, C++, Max/MSP, TouchDesigner and Pure Data. David creates visualizations that take the form of video, sound, and installations (often combining all three) that frequently involves performance or participation from viewers. He has created multiple collaborative and solo installations in the Sacramento area.

Mikko Lautamo is a Sacramento-based artist whose work takes the form of software installations, projections and interactive screen pieces. His practice focuses on the methods and movements of complex systems such as biological, environmental, social, economic, and political. Blending these systems within a context of AI (artificial intelligence) results in his generative abstract animations. Lautamo's work has been featured in exhibitions in Germany and the Sacramento area. Lautamo teaches New Media at Sacramento State, where he also studied.

Summer Ventis is a printmaking professor at Sacramento State and an established artist. Her work deals with internal and external landscapes and their intersections. She uses the printmaking process to experiment with and create two-dimensional prints, books, sculptures, and installations. Her recent work engages the reciprocal relationship between inner and outer space, between people and our environments, in the landscapes of the Western and Midwestern United States. *ceding clouds* explores this relationship through the lens of fire—the imprints left by wildfire, on the part of the landscape, and prescribed burns, on the part of people. *defensible space* and *a belly full of water against the future drought* use cactus imagery to interrogate issues surrounding borders and scarcity. *Lagoons and Fringe Landscapes* emerge from the beauties and horrors of modern agriculture.

Ventis' work has been shown in exhibitions nationally and internationally, and is featured in numerous institutional collections. She received her MFA from the University of Colorado and her BA from Grinnell College in Iowa.

Tavarus Blackmon is an artist who was born and raised in Sacramento, where he still resides. He is a recent graduate of the MFA program at The University of California, Davis. His work has been in exhibitions at Shy Rabbit Gallery, Pagosa Springs, CO; The Midway, San Francisco, CA; American Steel Studios, Oakland, CA, The Center for Digital Art, Los Angeles, CA, FE Gallery, Sacramento, CA, BrickHouse Gallery, Sacramento, CA and the Blue Banana Video Art Festival in Berlin, Germany. He also received an MA and BA from Cal State University, Sacramento, and is a current artist-in-residence at Headlands Center for the Arts.

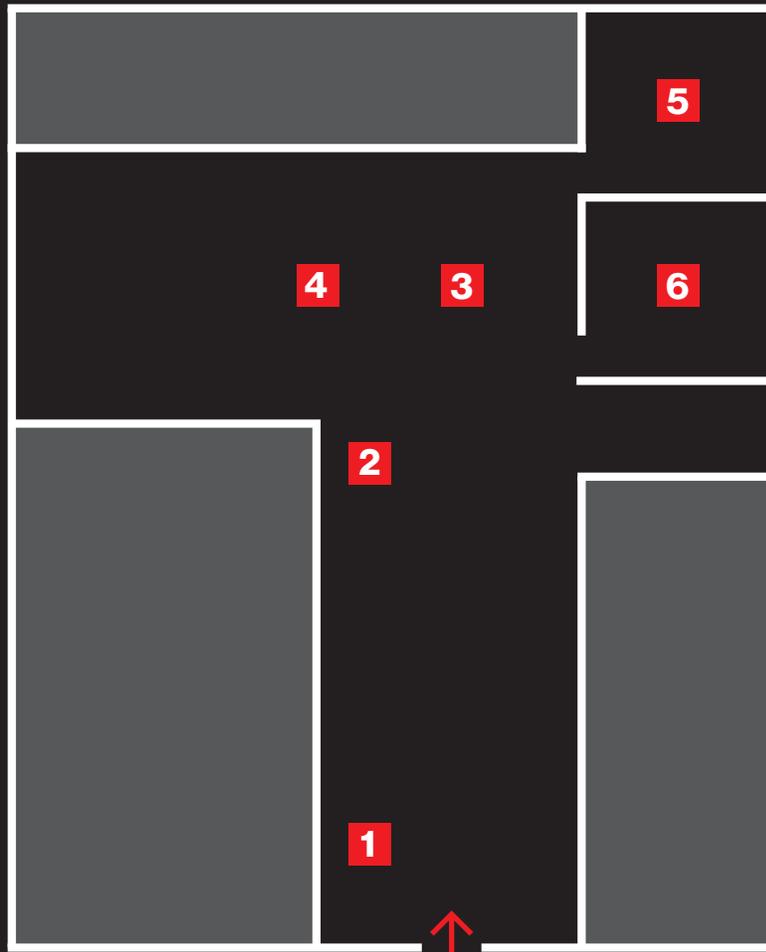
Blackmon's practice comprises of painting bold canvases that are full of cultural, societal, and personal references, particularly surrounding his identity and domestic life. He also works digitally, creating videos, web-based projects, and digital collages. His work often references art history and culture, particularly the Funk Art movement, which was a prominent artistic style in Northern California in the '60s and '70s.

We'd like to thank the participants in Engineers & Artists for their time, energy, and brilliance.

We'd also like to offer our appreciation to the many individuals and institutions who partnered with us. Without you, this exhibition would not be possible.

Interested in learning more about Verizon's Engineers & Artists initiative? Visit: www.hikercompany.com/verizon

Share which Engineers & Artists piece inspired you by tagging [@verizonnews](https://www.instagram.com/verizonnews) and hashtagging [#inspiredby5G](https://www.instagram.com/inspiredby5G) on Instagram.



1. Mikko Lautamo, with partner engineer Daniel Diaz

Speed and Humanity

arc, 2019; computer, processing software, camera, projection; dimensions variable

2. Summer Ventis, with partner engineer Rustin Vogt

Revealing the Invisible

Counting Trees I, 2019; CNC-carved tree, print on paper, stainless steel tag; dimensions variable

Counting Trees II, 2019; toner transfer on Rives BFK; 8 x 10 in.

3. Aida Lizalde, with partner engineer Megan Carter

The Future of Together

Untitled, 2019; five gouache and ink on paper drawings, acrylic; 18 x 24 x 16 in.

4. Tavarus Blackmon, with partner engineer Vik Singh

Portraits of Engineers, Revealing the Invisible

Portrait of Charles Harrison, 2019; archival pigment monoprint on vinyl; 80 x 80 in.

Hindsight, 2019; archival pigment monoprint on vinyl; 80 x 80 in.

Untitled, 2019; graphic interchange format; continuous loop

Master, 2019; digital video with sound; 1:58

5. David Stone, with partner engineer Jordan Duval

Revealing the Invisible

CQ, 2019; maple composite, rear projection film, projector, computer, kinect cameras; dimensions variable

6. Bryan Valenzuela, with partner engineer Kaleb Clark

Revealing the Invisible

Black Box Cathedral, 2019; acrylic sheets, wood, mirror, acrylic marker, latex paint, canvas, LED lights, faux fur rug, speakers; dimensions variable