GUIDING LIGHT

New York-based LEO VILLAREAL honed his high-tech skills in Silicon Valley before dazzling the art world with computerized light installations, becoming the star of new-media art. 

by JASON EDWARD KAUFMAN

Multiverse, 2008, transforms an underground concourse at the National Gallery of Art in Washington, DC.
San Francisco’s Oakland Bay Bridge was an underappreciated piece of infrastructure until Leo Villareal got his hands on it. In 2013, to mark the bridge’s 75th anniversary, the New York light artist strung the span with 25,000 white LED bulbs programmed to flicker in captivating sequences nightly. The glittering 1.8-mile-long installation, dubbed The Bay Lights, remains one of the largest and most visible public artworks ever made. A constant source of delight to pedestrians strolling the waterfront, the piece catapulted Villareal, now 49, to the forefront of ‘new-media’ art, landing him in museum shows and private collections around the world.

To meet growing demand, he leads a team of engineers who fabricate a range of sculptures featuring light configurations activated by custom-designed software. Wall-mounted light boxes emit colors that flow like high-end lava lamps; strings of bulbs dangle from the rafters pulsating like the aurora borealis; LED batons form cage-like spheres that resemble models of molecules; and expanses of tiny bulbs transform building facades and ceilings into celestial arrays of scintillating galaxies. An example at the National Gallery of Art in Washington, D.C., his popular 2008 installation Multiverse, takes visitors to an underground concourse and makes them feel like they have a window seat on the starship Enterprise.

Villareal was born in Albuquerque, New Mexico, in 1967, and grew up in El Paso, Texas, as well as his father’s native northern Mexico. He studied sculpture at Yale (a classmate was Matthew Barney), then, intrigued by the horizons opening up in computing, entered New York University’s Interactive Telecommunications Program. In the mid-1990s he was recruited to work at Microsoft co-founder Paul Allen’s Interval Research think tank in Palo Alto, California, where he spent three years exploring projects related to virtual reality. Yet, he never intended to be a computer engineer, but rather always planned to find a way to use his high-tech skills to make art. Today his large-scale commissions adorn the exteriors of the Albright-Knox Art Gallery in Buffalo, The Brooklyn Academy of Music, Cornell University in Ithaca, and the Arts Hotel in Denver, not to mention numerous corporate lobbies. Current projects include a multistory display on the façade of the Waterfront Theatre in Auckland, New Zealand, and a piece for the new headquarters of AmorePacific cosmetics in Seoul, Korea. With major pieces commanding upward of $1 million, he is among the few artists who have made a career using light as his medium.

The artist took a break from his busy schedule to speak with us about the trajectory of his remarkable career, his passion for the counter-cultural Burning Man festival, and the challenges and thrills of making futuristic art with computer code and blinking lights. >
You make art out of digitally programmed electric lights. Would you say you are a futuristic artist?

I like new things. I certainly have always been kind of a geek and into technology and ideas of the future. But I think somehow in my work I’ve managed to fuse things that are wholly new with things that are old, ideas about art and abstraction, and kept that heavily in the mix without being overwhelmed by all the tech stuff. I see it as sort of a hybrid. But I have found some new ways of using technology to make art, so, yeah, I’m pretty comfortable with the future.

What would you like your art to do that technology—or future technology—may make possible?

My interest has always been in experiences. Early on, when I first got into technology in grad school, like 25 years ago, I was working on virtual reality stuff. I kept wanting faster computers and devices to create these virtual worlds, and I realized that I could make the same thing through light sculpture. I made my first light piece and realized I could leave behind all the other stuff. It didn’t have to be head-mounted displays. You could do something similar with more simple means.

Tech gurus tout virtual or augmented reality as the future. Have you worn an Oculus Rift headset?

I’ve done a few demos and I’m definitely intrigued by it. It’s certainly an exciting time in thinking about how I could connect to that sort of world. The thing I love about what I do, and what I think is important about my digital works, is you just have to be present with them. They’re optically very potent and you can’t take a picture of the pieces. It doesn’t really translate, and videos don’t work either. It’s about being with the works, engaging with all the senses, and we just don’t have any device that can capture and represent these pieces.

How would you apply virtual reality to your work?

The Bay Lights is amazing, spectacular, and huge, but a lot of people can’t see it because they can’t go to San Francisco. So how do you capture that and let other people have that experience? Not everyone can own a piece, but if you could find a way to create something that more people could have, that’s very interesting to me as well. I’ve just started to think about ways of creating the equivalent of a drawing or a print through some of the new 4K cameras. Some of these displays are pretty amazing, and I think that we’re getting into a whole other territory of exciting possibilities, where you are looking at a monitor and it starts to become more of a window you’re seeing through, because it is so bright and so high-resolution. We’re starting to see little glimmers of that, and that could very much be where we end up.
Do super-high-resolution displays offer potential for artists?

I think that’s an important part of it so you get closer to making these portals. But I also love the simplicity of a small amount of information that does not resolve into an image. I find abstraction really refreshing. Also using materials in ways that they were not intended to be used. The LEDs that I use come from an advertising context, like Times Square or Las Vegas, but we’re taking that same technology and removing the logo and message from it. You still have the power and seductive quality of the lights, but they are being used in a different way. Maybe a similar thing could happen with all this virtual reality technology that’s around. Putting this stuff in the hands of artists; they’ll do something you never expected them to do with it. There’s a lot of exciting possibility. I guess I’ve got to get myself one of these Oculus Rifts.

Do you play video games?

Not a whole lot. I do with my son, but I wouldn’t call myself a big gamer. I like looking at the landscape in these games. In a car-racing game I’m more interested in the environment, how the mountains look, all the subtle qualities of the landscape—things probably a lot of people aren’t paying much attention to.

All your work is basically abstract. Do you think of yourself as an abstract artist?

I’m firmly committed to abstraction. It’s an exciting space to work in. Some pieces are colored, others are monochrome, but everything is stripped down a lot. I’m interested in communal experience and things that people can gather around. That idea really intrigues me.

What excites you about abstraction?

I see abstraction as on some level being about freedom and open-endedness, not specificity. It’s so different from a word or an image. And my work is all about time, so it’s different from abstract painting in that it’s unfolding. The other part is that it’s not linear. There’s no beginning, middle or end. It’s randomized. Using computers and software it’s pretty easy to randomize and create something that is never the same progression of sequences twice. That’s something I have settled on in my work.

Are you advancing the tradition of abstract art by using electric light?

The art that I loved growing up was by artists like Marcel Duchamp, Sol LeWitt, Peter Halley, and of course Dan Flavin, James Turrell, and the California Light and Space artists. Connecting to that history is important to me. I’m interested not only in adding the element of time but also in what you can do with light optically that would be very difficult to do with paint or with video. I find the way you can deal with perception using LEDs very potent. LEDs are Pop material. Their primary use is in entertainment environments where it’s pretty aggressive and directed. There’s a message. We want you to do this. I’m taking that same medium and instead presenting this abstract set of data that doesn’t resolve into any hard thing. You still have access to all the visual power of those materials, but in this context in which you have freedom to come to your own conclusions. It’s open-ended.

Will time-based work usurp static images in the future of visual art?

The temporal element is the thing that we’re moving more into. People continue to shoot still images, but even still images are now moving. Apple’s Live Photos takes a series of stills and you can pick one from the series. The way we can play with time-lapse and super-low-motion and very high-frame-rate cameras and Gopro and other things are changing the way we think about time. We have tools to manipulate and capture time that we never had before.

Light art can dazzle the eye and still lack substantive content. What about your work makes it more than just spectacle?

Light is like fire. It’s primal. It macromorphs people. I’m interested in communal experience and things that people can gather around. That idea really intrigues me.

How did you become an artist?

It was a long process. It’s not something I knew I wanted to do since I was a kid. I was interested in designing video games and I didn’t want to take things apart and see how they work. At Yale my first installation-art class got me excited about being an artist. I was making sculptures with found objects, kind of dark in mood. I hadn’t realized you could make art that was abstract. Later on when I saw Turrell and Flavin I realized that I could strip it down to much less.

Technology came next. In the 1990s I ended up going to NYU in the Interactive Telecommunications Program. That was a very unique program in those days. There was no Web when I started and no industry. The only job you could get was making CD-ROMs for Voyager or something like that. Also the equipment was very expensive and out of range, so if you wanted to get your hands on this stuff you had to be in an academic environment. I got into programming and video and started working at the medial center at NYU doing laparoscopic surgery simulators. That’s how I got a Silicon Graphics workstation and started doing some virtual reality. I was modeling gall bladders, hooking sensors to 3-D worlds and talking with different people, even neurosurgeons who showed me some of the techniques they used. I had to jump through a bunch of hoops to get access to these tools, but I didn’t know what I was going to do with them.

Then Michael Naimark, an MIT artist obsessed with cameras and ways of capturing and representing space as immersive experiences, came to NYU to find people to help him at Interval Research. [Microsoft co-founder] Paul Allen’s think tank in Palo Alto, California. They invited me out and I was like, “Wow, I can go to Silicon Valley and spend the summer and get paid. How bad could it be?” I wanted to Interval in 1994 and spent a summer working with Michael Naimark extracting 3-D data from stereoscopic stills, and ended up a member of the research staff and stayed until 1997. It was a place with every toy you can imagine. We had access to those budgets and could buy anything and play with it and invent. It was great for me, but I still didn’t know how I was going to use this technology. I knew I wanted to use technology as an artist, but I still hadn’t crystallized around light. It was a – I had that gut feeling that light would become my primary material until 1997 when I made my first light piece, for Burning Man.

You are a longtime devotee of that annual festival in the Nevada desert. How did you get involved and what does Burning Man mean to you?

At Interval I had a friend from NYU who said, “We’re going to go out to the desert and burn this sculpture.” It sounded really weird and intriguing to me, and I ended up buying my first camping gear and going out to the playa. I was pretty blown away by the whole thing. It was like 500 people very small, but a lot of technology people were there. By my third year, I had gotten so lost in the previous years of...
that I wanted to create a beacon, so I made this light sculpture using 16 strobe lights. That was the first light sculpture that I made. I didn’t even think of it as a piece. I thought of it as just a navigational aid I needed to find my way home at night. I had to make something distinctive that had a real pattern to the lights. What surprised me was the amount of personality that the thing had. It felt like it was trying to communicate, that it was alive; things you wouldn’t think you could do with zeroes and ones. It opened up this world that combined space and light and information. It was this epiphany moment that set me going on light sculpture.

Flash-forward to now—I’ve been going out there every year for 22 years. I’m on the board of the Burning Man Project with the six founders who made it a nonprofit. I’ve been involved in figuring out what to do as a community and how to take this thing that’s grown from 1,500 to over 70,000 people, and become not just about a week in the desert but a worldwide movement, with regional events happening around the world. There are 10 principles—about leaving no trace, radical free expression, welcoming the stranger—pretty basic things, but a great set of rules. I go out there to get rewired. I love what I do and I love the art world, but it can become a bit of a hall of mirrors at times, and sometimes you need something that comes from a whole different place. That’s what Burning Man represents for me. It’s a nice place for me to go and think and clear my head, and get away from my own personal work and work more as a collective with the camp. The week in the desert requires a tremendous amount of planning and logistics. We have a significant budget, rent bio-diesel generators and thousand-gallon water tanks, put down a power grid, and distribute all this stuff in the kitchen. But it’s really about music and art and light and participation. I find it refreshing and exciting, and it somehow feeds me creatively. The next one is around Labor Day.
What came after your Burning Man beacon?

I was experimenting. Around 1998 I made a piece called Red Life, which was an array of red light bulbs that displayed John Conway’s Game of Life program. It’s a simple set of rules—there are four simple rules to the program—and through randomization somehow these very complex patterns emerge. You’d swear it was a complicated organic system. How could you boil down these organic systems to something that you could describe in software in such an elegant and concise way? So I wrote the code and made a portrait of his rules.

I made the piece myself. Each bulb had to have its own relay, and I wrote the instructions that tell each one what to do at each moment. You wouldn’t believe the insides—breadboards and Radio Shack stuff super hacked together.

Your work has become far more intricate. How has the fabrication process changed since you first began?

It’s changed significantly. Some pieces I use off-the-shelf equipment, but I have the ability to make my own LED systems, which allows me to make these crazy things that I think up. I’m creating the hardware because I can get exactly what I want. It may help me support the pieces in the future if I know exactly how I made them and am not relying on some company. The studio itself has expanded in the last few years. We moved from Chelsea to Brooklyn, and the space now is 6,000 square feet. More people work with me here and fabricators are on projects all over the United States and on several international projects. So it’s really taken off and become more of a machine. It’s definitely very exciting.

What do your studio assistants do?

There are managers of all the nitty-gritty calendars, budgets, and schedules and those sorts of things. There’s a whole other group involved in production. There are gallery exhibitions I’m doing, shows with museums, and then there are large-scale architectural commissions. A lot of the pieces never even come to my studio because they’re too big to even fit in here. Public art is something I really feel deeply connected to. It’s exciting to push art out to places where you normally wouldn’t see it. So there’s a lot of coordination and things happening with teams.

Are you still doing the computer programming yourself?

At first I was writing my own code, then I was using some software that was made for lighting control. I got frustrated with that and wanted to be able to tweak it and see it in real time. Eventually I got beyond what I could do myself and I started finding programmers who would help me. For years now I’ve worked with a team of programmers to develop various tools. There might be programs that deal with particle systems, or a gradient pattern that you can adjust for speed and different parameters. It’s
The Bay Lights
You must have been thrilled when The Bay Lights were reilluminated. Can you talk about how that came about?

When it first went on in March 2013 the piece had a two-year permit from CalTrans, the state transportation agency. They had to take it down to do bridge maintenance, but people had fallen in love with it and really wanted it to come back. CalTrans agreed to take ownership and maintain the work, and we are getting the piece to the State of California. It was pretty remarkable that they had that level of confidence in the technology. The cost of buying and installing new equipment was $4 million, and a donor —Tad Taube, chairman of Taube Philanthropies—put up $2 million as a challenge and the rest pretty quickly fell into place. We had a lighting ceremony on January 30, 2016, tied into the Super Bowl so it was on live TV. I was a little apprehensive, but we pushed the button and fortunately it illuminated. It was a great moment. There is an agreement that they can’t decide to put advertisements on it. We were worried, but they get-it’s still my work and I won’t make any radical changes to it. They say they are going to keep it lit in perpetuity. We’ll see what happens in 10 years, but the super exciting part of all this is that it’s there.

What guided your programming of the lights?

I see the piece as literally a mirror of the activity around it. It’s showing different aspects of what’s happening around the bridge. In previous work I’d already been interested in organic systems and the movement of water and waves and particle systems. That’s part of the reason I was interested in that site, because there is so much kinetic activity around the bridge, both natural and manmade. So it seemed like there was a lot to respond to there.

Do you mean that literally? Did you try to make the lights shimmer like the surface of the water, fall like rain, twinkle like stars, and form clusters that glide like clouds or traffic? Some of the sequences on the bridge seem to allude to those phenomena.

People name the sequences all the time. They say, “Oh I saw the fish;” or they saw all kinds of things. There are no fish! It’s not a direct mapping, but there’s a particle system that has a certain type of behavior that you might interpret as being fish or being like fish, so I can see how people make those associations. That’s just the way that our brains work. We can’t help but identify patterns and make meaning from things. That’s the fun part, too. You’re playing with people’s compulsions to pattern recognize, but they’re not getting all the information, and by the time you start to identify something it’s shifted and become something else. So it’s a constantly unfolding process. People want to know what it means. They want letters and numbers and to be able to decode it. But I don’t want something that’s kind of mysterious. We live in this world where everything is very programmed and every message is carefully conveyed. It’s very intense. In my work you’re dealing with that vocabulary in a way that’s much more subjective and nondirected. I think that is refreshing compared with all the intense experiences we become something else. So it’s a constantly unfolding time you start to identify something it’s shifted and become something else. So it’s a constantly unfolding process. People want to know what it means. They want letters and numbers and to be able to decode it. But I don’t want something that’s kind of mysterious. We live in this world where everything is very programmed and every message is carefully conveyed. It’s very intense. In my work you’re dealing with that vocabulary in a way that’s much more subjective and nondirected. I think that is refreshing compared with all the intense experiences we have around us with media.

Why are the lights all white? Did you think about using color?

From the beginning it seemed points of colored light have the potential to go off track. I love monochrome. The first piece I ever made was using white light, and somehow having it more stripped down it’s more about the sequencing. It just felt more appropriate.

How has the project impacted your career?

The Bay Lights project was really key. I’m fighting to find space where I can think about ideas and art and what comes next.

What is the price range for new work?

It depends. There are smaller-scale pieces, which are tens of thousands of dollars, but the huge bridge was an $8 million piece! It depends on how complex it is. For me, the exciting part of it all is that I get to spend some of the income on research and developing new LED technology. It’s almost like a little research lab that I’m now able to fund. I think of it as an investment.

Do you mean a few private collectors who own your work?

Sharon Rockefeller, a Washington, DC, trustee of the National Gallery of Art, Martin Margulies in Miami, Roberta and Michael Joseph in Buffalo, and Lisa and Richard A. Blaker, who gave a piece to MoMA. A lot are in New York, but through my gallery in Spain I’ve connected with many more European galleries and collectors in Turkey, Peru, all over. The art world is so international, and now with things getting even more global and larger-scale it opens up the world even more.

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How does the project impact your career?

It’s generated so much press—over a billion media impressions—that people far and wide have heard about
Are all your pieces unique or are some multiples?

The larger ones are unique. Then there are wall pieces that are editions of three or five, and smaller pieces could be editions of 10 or 25. I’ve learned that it’s better to make the editions all at once. The production is very involved, and several years down the line remembering exactly how you did it and finding the parts can be pretty challenging.

What do collectors get when they buy a piece?

A combination of these lighting mechanisms and arrays of light in certain configurations; plus the proprietary software that is the code and numbers actually displaying on the lights. It’s a whole system: this particular set of data, or would they have to come back to you?

Do you provide collectors and museums with all of that information and conservation data, or would they have to come back to you?

There’s a lot of documentation of how everything is made. We preserve the software and take great pictures and video so we have a way to know what the piece was at the beginning and how to reconstruct it as needed. The only way this stuff is going to keep going is by documenting it with the best cameras we possibly can. For conservation purposes we try to keep as fastidious notes as we possibly can on what the original lights were and their exact color.

With LEDs there’s lumen depreciation, so over time it’s not just going to fail. It will change. It won’t be as bright, but there’s also a shift of color. What color was it? How do you know? If I want my work to be around in the future, the only way will be if I keep a very thorough archive so someone in the future can reference it.

Do you have many institutional collectors. One work was recently acquired by NorthPark in Dallas, the luxury shopping center created by the great sculpture collector Ray Nasher.

I work with Sandra Gering Gallery here in New York, with Leigh Conner in Washington, DC, and Javier Lopez in Madrid. Making art that you have to plug in is something different. It’s a commitment. It’s not like you sell something and you’re done and walk away. It’s a little more of a relationship. You have to know that at some point the works will have to be revisited. It also requires a special kind of collector, a client who understands those complexities and is willing to deal with them, and a dealer willing to stand behind the work and support it moving into the future. It’s more complicated than a painting, certainly.

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did a site-specific commission at MIT, a three-dimensional array hanging in the entrance of the Sloan School. And a 71-foot wall piece for the Chemical and Biomolecular Engineering and Chemistry Building at Ohio State.

Many contemporary artists are partnering with companies on designed products. You designed a handbag that is a work of art. Can you talk about that? I did that project with Lisa Perry, a fashion designer. I like pushing the boundaries of where art can go. Lisa and her husband Richard have several of my pieces—a piece in their home and a piece in Richard’s office. She’d collaborated with Jeff Koons, so she approached me about doing a handbag. It’s an evening bag clutch, basically a metal box made of mirrored stainless steel, and on one side of it is a grid of white LEDs that are sequenced. Now I have ladies carrying around my work to all sorts of galas and events.

A purpose of fashion is to attract attention. You can’t do any better than sporting a handbag with sequenced lights… It’s pretty cool. It’s an edition, so you can put it on your shelf and there it is. But you can also take it out with you. Unfortunately, you have to think ahead and make sure that your handbag is charged. Sorry to add yet another thing to charge and take care of.

Your wife, Yvonne Force, is a well-known art impresario. When did you meet, and what do you do in your spare time? I met Yvonne in New York around 1997, and we’re both deeply involved in public art. I spend time with my kids, Cuatro—that’s our nickname for Leopoldo IV—and Lux. If I’m not traveling or making art I am hanging out with them.

What was your own childhood like growing up in Texas? I’m the eldest of five. I lived in Albuquerque when I was very young, and moved to El Paso in the mid-1970s. That’s where I grew up, then in Juarez right on the border. It’s a unique part of the world. It was very suburban. We were city slickers compared to my cousins who lived on a ranch in Marfa, Texas. My great-great-grandfather settled out there in west Texas in the 1890s and established a ranch. Luke Brite was his name and it’s the Brite Ranch. That’s my mom’s side. The government established a fort at Marfa to help protect the ranchers from Pancho Villa, and later it became an Army base that Donald Judd and the Dia Art Foundation bought as the site for the Chinati Foundation museum. My dad’s side of the family is from Chihuahua and the north of Mexico. My dad did real estate in Mexico and built industrial parks in Juarez.

When I was 16 I left Texas and spent three years in boarding school in Rhode Island. That’s when I first started visiting museums. I ended up going to Yale because it was close to New York. I was very interested in New York so I went to NYU. That’s the first time I actually lived in the city, in 1992, and when I went to work at interval I was living in San Francisco and teaching at NYU. Now I live and work mainly in the city, but we just bought the family home in Marfa last year that we’re in the process of restoring. It’s a big project, and we’re planning on spending more time there. It’s another nice place to go and kind of get out of the city, a place you can think and work.

THE DALI DREAMSTONE GENRE
AND IT’S MODERN MASTERS
PRESENTED BY TK ASIAN ANTIQUITIES AND THE INTERNATIONAL DALI DREAMSTONE ASSOCIATION

“THE RIVER THAT DOES NOT HAVE STONE WILL NOT BE CLEAR, THE GARDEN THAT DOES NOT HAVE STONE WILL NOT BE BEAUTIFUL, THE ROOM THAT DOES NOT HAVE STONE WILL NOT BE ELEGANT AND THE PERSON WHO DOES NOT HAVE STONE WILL NOT BE EMINENT.”

-ANCIENT CHINESE SAYING