

# Interview with Judy Natal

## The Machines Are Here and They Are Us

By Craig Reinbold

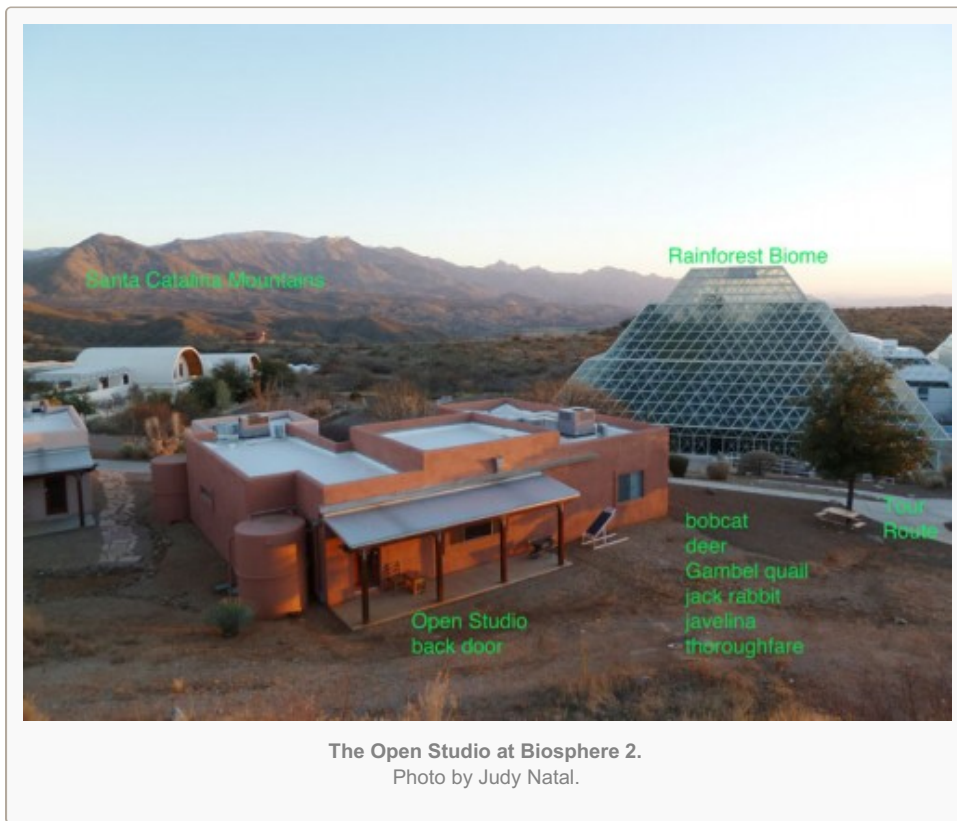
### Introduction and About Photographer Judy Natal

Photographer [Judy Natal](#) is the author of *EarthWords* (Light Work, 2004) and *Neon Boneyard Las Vegas A-Z* (Center for American Places, 2006). She recently wrapped up a multi-year project, *Future Perfect*, which took her from the deserts of Las Vegas to Biosphere 2 in Oracle, Arizona, to the geothermal sites of Iceland. For the last couple of years she's also been immersed in a photography and video project revolving around ideas of robotics, and human interactions with machines. In *Future Perfect* she asked what the landscapes of the future might look like, how we'll live, and where. With this new project, its working title *Robot City • Uncanny Valley*, she investigates what we might look like in the future, asking, "Where does the human end and machine begin?"

"I believe making art is an act of interpretation based on asking questions," she says—and the questions she asks never have easy answers.



Judy Natal.  
Photo courtesy [FLATStudio](#).



The Open Studio at Biosphere 2.  
Photo by Judy Natal.

Having joined the [Photography Department at Columbia College Chicago](#) in 1997, Natal is based in the city, but is also always on the move. We first met at [Biosphere 2](#), where she was an artist-in-residence (a position she helped create).

She had taken over an adjoining casita and every surface was covered with photography paraphernalia and books. She was only there for a couple of months, but there were easily a hundred titles, piled in no obvious order.

Natal's intellectual range is vast, and each of her projects begins with intensive research. This impulse to look outward before turning inward is key, as much of Natal's inspiration is drawn from the world itself, from nature, and from changed or changing landscapes, in particular those altered by scientists, engineers, designers, Utopians.

Through her photographs, she seeks to "contribute significant observations about mankind's ideas of nature, our effect on our landscapes, and what the future might hold for us." She presents an imagined future, so we might see the present anew.

## Interview

**Terrain.org:** Last spring, *Terrain.org* asked a handful of writers what the "apocalypse" means to them, how the idea of impending global disaster factors into their work, what weight the impending end-of-life-as-we-know-it adds to their daily lives. Their responses have appeared as part of our [Thoughts on the Apocalypse](#) series. To begin, what do you make of it all? How do these questions inspire your artistic practice?

**Judy Natal:** On his [blog](#), writer David J. Nix suggests, "When the thin veneer of civilization is stripped away, and all hope is lost, what remains is a true glimpse of humanity at its worst, and best, and the question 'what makes us human' leaps to the forefront of existence." *What makes us human?* This is a nagging question. It was one of the questions that prompted my project *Future Perfect*, in which I set out to imagine the future in order to illuminate the present, and the environmental choices we're making.

Photographed at three very disparate sites over seven years—Las Vegas, Biosphere 2, and the geothermal sites of Iceland—the project weaves together a visual science fiction that moves backwards in time from 2040 to the present. I wanted to highlight the “utopian” principles that we carry around in ourselves which come out in our relationships with other life forms.

**Terrain.org:** I like that you refer to this project as a “visual science fiction.” Your work asks a lot of the same questions that are raised in popular sci-fi literature and movies and TV, but it seems novel to include photography in the genre.

**Judy Natal:** Photography is uniquely suited to address the same questions as science fiction because of how we “read” images. Pictures are rich vessels of meaning that can contain complex narratives of space, time, and place. Over the course of my practice, I’ve played with how we read images. For example, in *EarthWords* I invert the standard practice of reading a text and seeing an image, asking the viewer to read the photograph and see the text.

While making *Future Perfect*, it was quite a trick to strip away the “who, what, where, when, why” roots of an image. It took a year in the field for me to understand visually how to do this—sometimes by not telling the whole story that was in front of the camera, and sometimes by simply seeking out extraordinary sites that are outside our normal experience, such as Biosphere 2 and the lunar landscapes of Iceland.

In order to strip away the specificity of a photograph, you have to invite the viewer into “not knowing.” I ask viewers to leap over the here and now, allowing themselves to be *displaced* instead of *placed*, so instead of responding to an image by saying, “I know where that is,” I invite viewers to imagine where else it could be. *When* else. *What* else. The goal is to lead viewers to wonder, “What will the landscapes of the future look like? What will the air smell like? What will the water taste like?” And I want them to question whether they could live in landscapes like that. I ask myself these same questions as I make the images.

**Terrain.org:** So as a photographer, what specific steps do you take to “displace” a viewer?

**Judy Natal:** To begin with, I need to make an intriguing enough image, to assist the viewer’s ability to suspend reality. I might be able to intuit that a site holds the possibility of allowing viewers to suspend their sense of reality, but actually being able to do so depends upon conditions of light, weather, air, and innumerable other intangibles that are beyond my control. This often forces me to go back and photograph a specific site again and again.

Between 2008 and 2012, I traveled to Iceland five times, seeking out different sites. This is where the earth really feels alive, split open, and breathing. The soles of my hiking boots melted while I walked through some of these areas and earplugs have come in handy while working around the power plants and boreholes where geothermal energy is being tapped. Its power pounds and reverberates in your chest. The ground shakes and the air stinks. The brass fittings on my large-format camera are now yellow, coated in sulfur.

**Terrain.org:** Like many of us, you must spend a lot of time imagining not just *the* future, but the many potential futures:



**Future Perfect: Steam Portrait Emergency Worker.**  
Photo by Judy Natal.

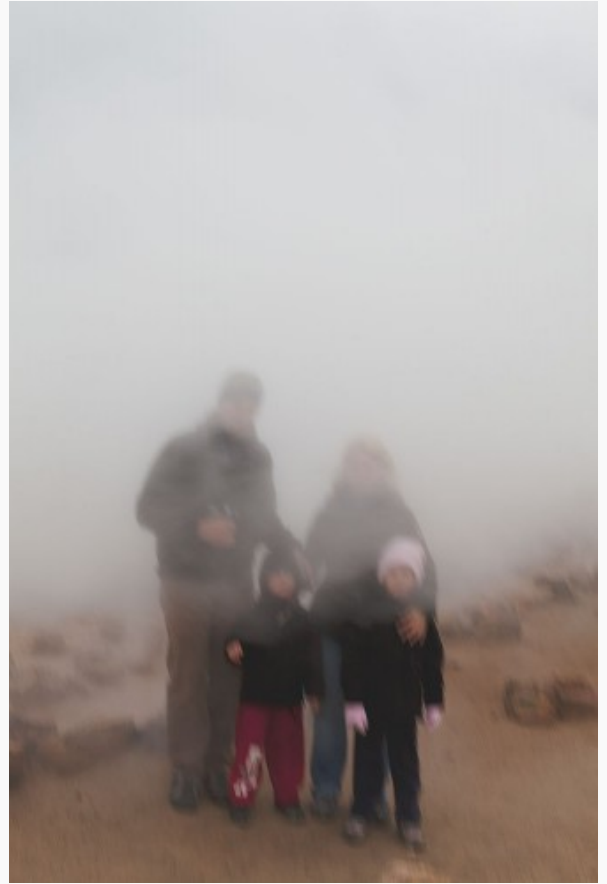
we might someday face. Is there a particular vision of the future in which you wouldn't want to live?

**Judy Natal:** Honestly, I'm arrested in answering this. Forget about the future for a moment. Man's present inhumanity towards all living things makes it difficult to live here and now. Don't we all carry a burden of grief, guilt, and anxiety about conditions that exist today? I know I do. The way I see it, the possibilities the future offers us are redemptive.

**Terrain.org:** A future not of inevitable decline, but rather opportunity to make things better? The Utopian ideal?

**Judy Natal:** Right. Going back to my project, *Future Perfect*—which moves backwards in time, from 2040 to 2010—I'd initially intended to begin in the present and have the images culminate in the future. I had the structure of the chapters—2010, 2020, 2030, 2040—in place. My working method was to hang each chapter's images on the wall so I could better visualize the flow, sequence, content, and context, not only page by page, but chapter to chapter, start to finish. But once I did this, I realized it was a very bleak future indeed, and I had a crisis of intent.

Did I really want to make a work of art that was so pessimistic about the future? No, I decided I didn't. I believe humanity, given a choice, will work towards change. Ultimately, I didn't believe presenting such a bleak future would endow viewers with the possibility of that change.



Future Perfect: Steam Portrait Family.  
Photo by Judy Natal.

**Terrain.org:** You wanted viewers to come away hopeful—rather than hopeless—facing the future?

**Judy Natal:** Yes, which is why I needed to rethink the structure of the book, and just like that I took all the photographs off the wall, reversed the chapters, and put 201 of them back up. I spent most of a day doing this, but it worked! Beginning in 2040 not only facilitated the "relinquishment" of the "who, what, where, when, why" of the images, helping to displace viewers, it also worked conceptually, because the future could be totally unrecognizable.

This reversed structure, this time travel backwards, also allowed me to utilize formal language to build an emotional response, moving from the strange to the familiar, the bleak to the warmer, brighter present, the monochromatic to the colorful, the frightening to the comforting, from isolation to human connection.

**Terrain.org:** Has this sort of determined hopefulness carried over into your more recent work?

**Judy Natal:** In *Future Perfect*, I, like a lot of our species, was optimistic about the environmental choices we were making. But after [Hurricane Sandy](#), my optimism began to diminish. Serendipitously, I was invited to New Orleans to spend a month giving visiting artist lectures in conjunction with an exhibition of *Future Perfect*. While there, I spent a lot of time simply wandering around the city and the Gulf Coast.

I'd heard recovery from [Katrina](#) was well underway. What I discovered was that a lot of human and environmental trauma remained just below the surface. In response, I began an ongoing project that conjoins New Orleans, post-Katrina, with the East Coast post-Sandy, becoming a premonition that imagines a decidedly darker vision of the future. It's full of ominous warnings and a steadily escalating sense of foreboding, of impending disaster, as environmental issues become more and more pressing, repetitive, and the need to act more immediate. The title of this project, *Another Storm is Coming*, was inspired by a piece of graffiti I photographed in the city, years after

Katrina.

**Terrain.org:** Your work is so interested in the future and the ways things are changing, and in getting your viewers to think about those changes. Have you ever been preoccupied by the past? With the ways the world has already changed, from, say, 5000 B.C. to now? Or do you see the future as fundamentally more valuable to think about?

**Judy Natal:** I believe the past is always present in the future. My early work, *Rock the Cradle: Photography in Ruins*, walked backwards through time to find the origins of Western beauty. This entailed a three-month journey through Greece, Turkey, and Sicily, photographing more than 60 archaeological sites. If I wasn't a photographer, I'm sure I'd be an archaeologist—or a landscape designer. Another early body of work, *Cabinets of Curiosities*, explored classifications of knowledge and took me traveling through Western Europe's large and small natural history and folk museums.

**Terrain.org:** In that sense, your work is truly 21st century, not only focused on modern concerns (those of the present and the near future), but your work is also made uniquely possible by the technologies of the 21st century—the ability to hop on a plane and fly around the country, or the world, to move so easily between Chicago, Las Vegas, Arizona, Iceland, New Orleans, Europe...

**Judy Natal:** Absolutely. I can't help but wonder if frontier-era photographers, those living during the "era of exploration," felt this incredible attraction to the unknown, as well. Particularly with this crazy new "box" they used, with a lens on it, called a camera, which allowed such an accurately detailed mapping of the landscape. In some ways, I feel space travel might be more the tool of the 21st century. I actually feel a little old fashioned because my feet are still on the ground.

**Terrain.org:** Would you give up the landscapes of the earth for the mysteries of space? Or would you want to visit and return?

**Judy Natal:** This makes me think of that great short film from 1977, *Powers of Ten* (I have it as a flip book!) by Charles and Ray Eames. It moves us in and out of space from macro to micro, from the outer limits of the universe to within our own bodies.

On that note, my answer to your question really depends on how one defines "landscape." I've begun to see almost everything as a landscape. In Spike Jonze's new film *Her*, the many close-ups transform Joaquin Phoenix's face into a fascinating landscape. The debris from [Marina Zurkow's Hydrocarbon dinner](#) became a landscape of fish bones, salt crust, and oyster shells. Often, I seek out places that mimic extraterrestrial landscapes. Two that come to mind are the lava fields in the cold desert in the middle of Iceland (a remarkable terrain that so closely resembles the moon the Apollo astronauts trained there), and the desert outside Tucson, which mimics what we know the red planet Mars looks like.



Future Perfect: Tyvek Suits.  
Photo by Judy Natal.

**Terrain.org:** I've been thinking a lot about the central question behind your current project, *Robot City • Uncanny Valley*: "Where does the human end and machine begin?" I suppose I'm not the only one thinking about this. It's all over our modern culture, right?

**Judy Natal:** Absolutely. And we're slowly being culturally acclimatized to the idea of robots in everyday life, through TV, advertisements, movies, video games, and even through the use of machines for cleaning, and industrial manufacturing. We're losing our fear of machines. One of our culture's biggest taboos is pairing robots with kids, so you can imagine my surprise when I saw a GEICO ad where robots are suddenly providing daycare ([Robot Daycare](#)). Or watch the real life robotic butler HERB, starring in a primetime Oreo commercial, separating our cookie from the cream ([Oreo Separator Machine](#)).

**Terrain.org:** The GEICO commercial seems to be playing on that taboo. Its humor depends on how obviously ridiculous it is. HERB, on the other hand, or rather HERB's creators at Carnegie Mellon, seem totally sincere. They're not poking fun at the idea that robots can do all of these human things; they're actually out to create robots that can do all of these human things.

When did our obsession with this human/machine dichotomy begin?

**Judy Natal:** Well, Mary Shelley's *Frankenstein* was a pivotal starting point. One forgets how poignantly tragic and human the monster is, being both intelligent and articulate, with hopes and feelings, despite his grotesqueness. *R.U.R. (Rossum's Universal Robots)* by Karel Capek, published in 1920, really popularized the word "robot," describing machines that do everything but lack creative thought—and the Utopian life the robots provided lacked meaning.

Both of these books reference an "Adam and Eve" theme. Frankenstein wants a wife that would be Eve to his Adam, and in *R.U.R.*, it's only when two robots fall in love that they can replicate.

**Terrain.org:** At what point did this really begin to interest you? Was it something you read? Something you saw?

**Judy Natal:** It wasn't any one thing. Rather, as I was finishing *Future Perfect* I figured the next logical step was to imagine what we would look like in the future.

I also explore our range of emotional responses—from aversion to love—as we increasingly interact with machines made in our own image. The resulting photographs/video/installations challenge and assuage our ideas about what it means to be human and the inevitability of our now shared evolutionary path. I want to portray the fragility, fears, and desires we share and project onto machines.

I'm especially interested in the complex quality of life issues that are raised, for both able-bodied and physically compromised humans. As the first artist-in-residence at the [Robotics Institute at Carnegie Mellon University](#) in Pittsburgh, I engaged with roboticists, theorists, researchers, animators, and leading designers in the field to explore

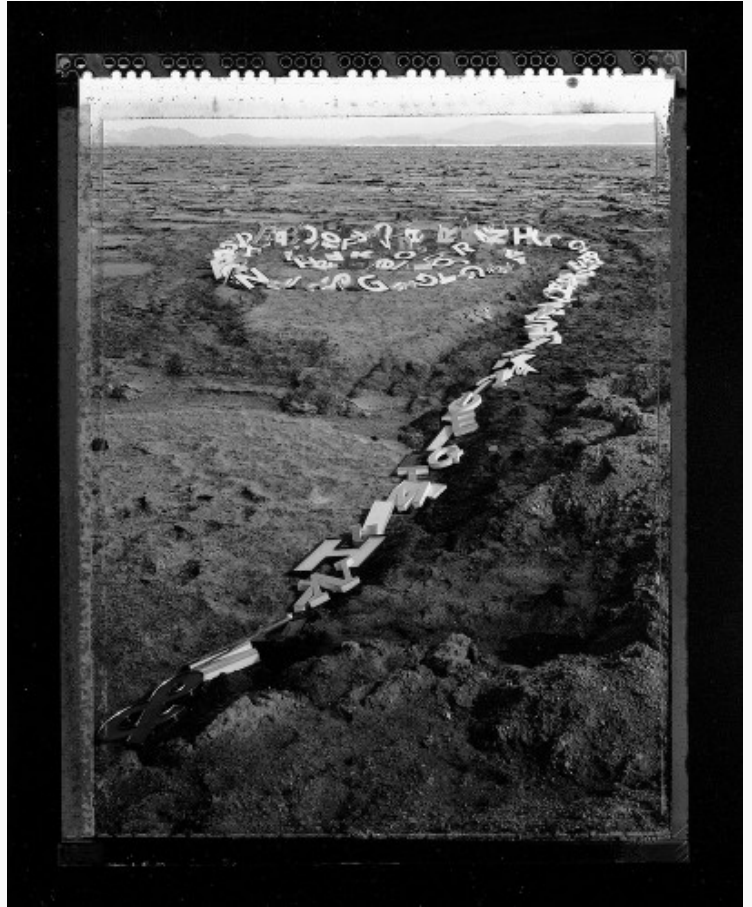


EarthWords: Diving into the Wreck (after Adrienne Rich).  
Photo by Judy Natal.

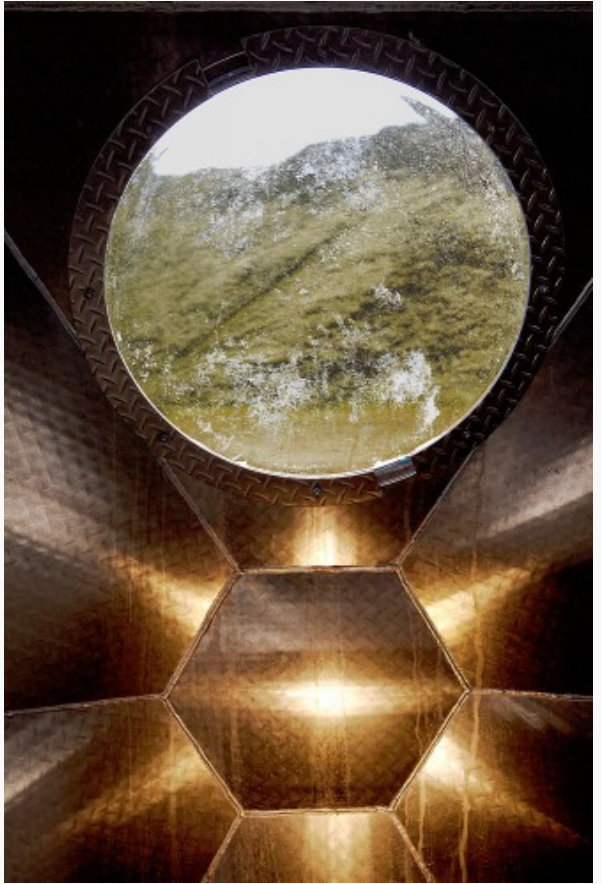
the moral and ethical territory surrounding the creation and use of humanoid robots.

Ultimately, I believe we will come to view humanoid robots as intelligent, social, and moral beings, allowing us to develop substantial and meaningful relationships with them as we progress along an ever-entwined evolutionary timeline.

**Terrain.org:** I've read [accounts of people](#) implanting small magnets in their fingers. This trend of body modification (maybe it's not yet widespread enough to be a *trend*, per se) suggests a fascination with the idea that melding with technology can help us overcome our basic physical limitations.

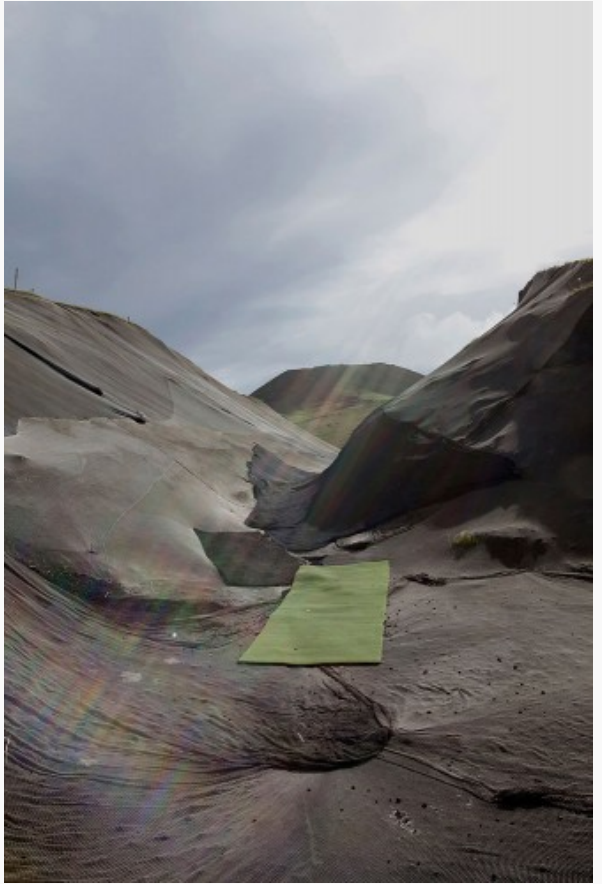


EarthWords: The Language of Smithson.  
Photo by Judy Natal.



**Future Perfect: Through the Window.**  
Photo by Judy Natal.





**Future Perfect: Astro Turf.**  
Photo by Judy Natal.



**Future Perfect: Steam Portrait Couple Touching.**  
Photo by Judy Natal.



Another Storm is Coming: Yelp.  
Photo by Judy Natal.



Future Perfect: Solar Panel and Steam Portrait Traveller.  
Photos by Judy Natal

And yet this “body modification” is still viewed very much as *outsider*, or *fringe*. And obviously embedding a magnet in

one's finger is different than implanting a pacemaker, for example, but *how* exactly is it different? Is either making us less human? Is either making us something more than human? Why isn't having a pacemaker implanted referred to colloquially as "body hacking?" Is there a difference between augmenting one's physical self with technology for purely medical or purely creative or purely aesthetic reasons?

**Judy Natal:** It's complicated, certainly. While in residence at the Robotics Institute, I sought out ethicists to tease apart these very distinctions. It's easy to get wrapped up in the sci-fi aspect of machines and forget that a central reason for these technological advances is simply that they can and do provide services that some humans can no longer perform, from a relatively simple machine regulating one's heartbeat, to HERB—the personal butler robot from the Oreo commercial—who can open jars, cans, cabinets, and refrigerators for a human who has lost the ability to do so.

For the mentally and physically disabled, humanoid robots and other intelligent machines might eventually be a real lifeline, helping them achieve independence, and raising their quality of life.

It's worth watching the recent [TED talk by Hugh Herr](#), who heads the [Biomechatronics research group at the MIT Media Lab](#), and who is a double amputee himself. He talks about revolutionizing what's possible with prostheses, and how technology and bionic integration can bridge the gap between disability and ability. This is what makes robotics so compelling for me.

After spending time with those involved, I do believe roboticists in general are interested in the common good. They're working to improve our quality of life. That said, it's easy to forget that the robotic arm you designed and built is replacing thousands of factory jobs, and that employing the service of sexbots to fill the void of isolation might exacerbate our collective inability to connect with other human beings. It's notable that for \$7,000 you can have a sexbot built to your own specifications of hair color, eye color, skin color, etc. And they are selling like hotcakes.

**Terrain.org:** Still, how is using a sexbot to satisfy one's need for physical interaction different than, say, a person born deaf getting a cochlear implant so they can hear? In both cases technology is melding with the specifically "human" in order to make lives better. Or are you suggesting that "employing the service" of a sexbot doesn't actually increase one's quality of life?

**Judy Natal:** Well, since I have not engaged, romantically or otherwise, with a sexbot, my answer is pure speculation. Plenty of individuals who *have* argue their quality of life has in fact been enhanced. But it does seem to me that a distinction can and should be made between sexbots and, say, the prosthetic legs that allow, for example, Boston Marathon amputee [Adrienne Haslet-Davis](#) to walk and dance during Herr's TED talk.

**Terrain.org:** Maybe this is all related to the "What makes us human?" question you mentioned earlier. So what exactly is the "essence of humanity" you're trying to depict through this project? Or through your art in general?

**Judy Natal:** Sigh. I wish I knew how to answer that. A place to begin, in terms of this project, is to suggest that maybe



what makes us human is that which a machine can't replicate. Compassion, creation, beauty, ugliness, love, death, understanding of the cosmos, black holes, the life and death of stars and planets, why Democrats and Republicans can't work together, I could go on and on, but I fear I'd sound ridiculous.

**Terrain.org:** This leads back to the question, "Where does the human end and machine begin?" With this project, are you attempting to answer this question? Or just get viewers to ask it?

**Judy Natal:** With my work, I hope to encourage people—viewers, the audience—to contemplate their own existence, and in doing so, to reflect upon the choices they make today, and acknowledge that these choices will have a tremendous impact on tomorrow. Often these are specifically ecological choices, but obviously here they also extend to accepting or not accepting certain technological advances.

Many people today, myself included, are living examples of human-meets-machine. [Amy Purdy](#), the Paralympian who competes on *Dancing with the Stars* with two next-gen artificial legs, is a weekly example of a bionic woman. It's clear that the machines are here and they are us.

Robotic technology is so pervasive and yet so often overlooked, hiding in plain sight. With this so-called 2nd Industrial Revolution, our attitudes towards machines have evolved from resistance to resignation, and ultimately towards acceptance.

**Terrain.org:** Working on *Future Perfect*, you had a real game plan, knowing up front (or at least partway through) how the way you chose to display your photos would add to the meaning of the project. Do you have a similar plan for *Robot City Uncanny Valley*?

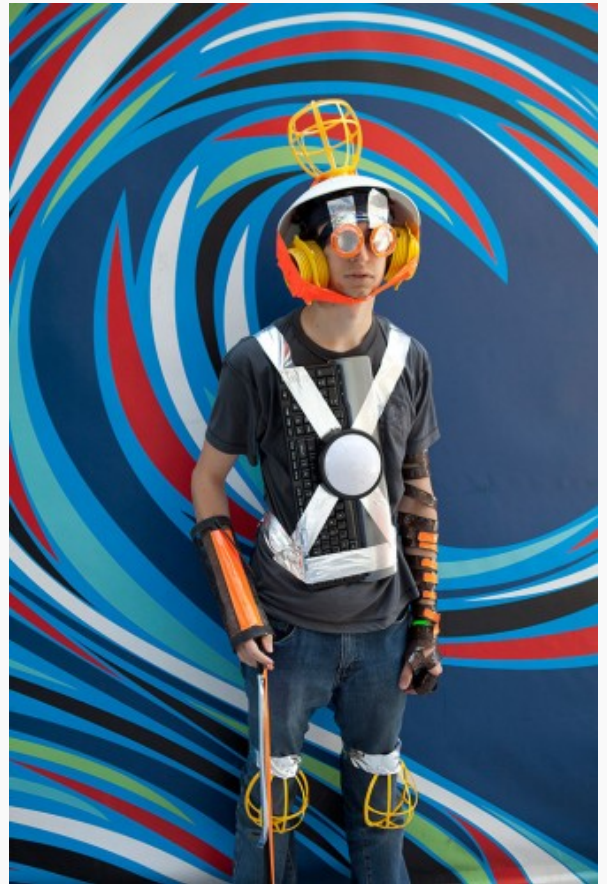
**Judy Natal:** Well, it took me five years to figure out the "game plan" for *Future Perfect*. When we met at Biosphere 2, I was only then proofing, printing, and sequencing those five years of work into a book. I was building the connective tissue between the three disparate sites I'd photographed, and it was very gratifying, to say the least, that I ultimately succeeded in weaving a compelling narrative. But until that point, all I had was a stubborn belief that it would all, eventually, fit together.

*Robot City • Uncanny Valley* is ongoing—I'm only two years in. And the complexity of this project makes it especially difficult to navigate. Gaining access has become an obstacle. Roboticists are notoriously secretive, as are corporations I'm interested in looking into, like Google, Intel, and Disney, all of which have offices in Pittsburgh, where I've been fortunate to partner with the Robotics Institute.

*Another Storm is Coming*, which began in post-Katrina New Orleans in January 2013—and which I originally envisioned encompassing post-Sandy New York/New Jersey—might expand to include a much larger portion of the Gulf Coast, from Louisiana over to Houston, since I'm now negotiating a commission for this project. It would also take on the petrochemical industry permeating the spaces between these sites.

**Terrain.org:** Always a lot going on.

**Judy Natal:** Definitely. And now I'm off to Houston to participate in a lecture series at the Cultures of Energy Spring



Robot City • Uncanny Valley: Blind Robot.  
Photo by Judy Natal.

Symposium, hosted by the [Center for Energy & Environmental Research in the Human Sciences](#) at Rice University. I returned to Iceland this summer. And I'll be visiting Canada this fall to deliver a series of lectures to coincide with the opening of *Future Perfect* at the [Circuit Gallery](#) in Toronto. The *Future Perfect* archive was recently exhibited at the Center for Art + Environment at the [Nevada Museum of Art](#).

For many years I worked in a very monolithic way. These days, the complexity of my schedule encourages a multifaceted approach. I really enjoy the delicate act of balancing several projects at once. It keeps everything fresh and lively.

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Header photo: Future Perfect: Self Portrait with Sphere.

**Craig Reinbold's** work appears in recent issues of the *Gettysburg Review*, *Gulf Coast*, *Guernica*, *Brevity*, *The Rumpus*, *Ruminate*, *Mud Season Review*, and a number of other more or less literary places. He is an assistant editor at *Terrain.org* and helps manage the [Essay Daily](#), a blog-cum-conversation about all things essay.



Robot City • Uncanny Valley: Herb 2 in the Kitchen.  
Photo by Judy Natal.



Robot City • Uncanny Valley: Exoskeleton Prototype.  
Photo by Judy Natal.