SciArt in America

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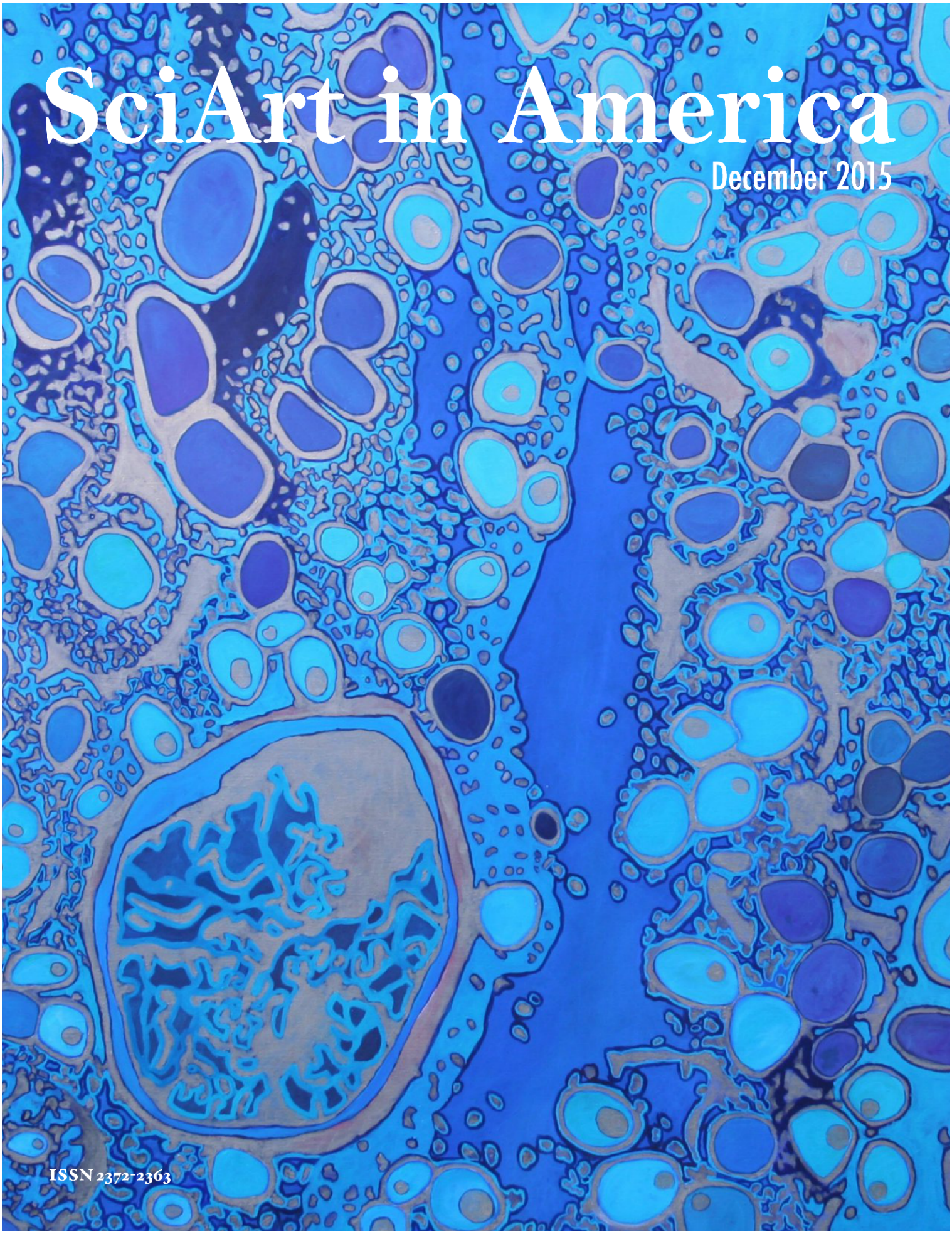

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STRAIGHT TALK

with Jody Rasch

Jody Rasch is a New York–based artist who explores the duality of nature through scientifically influenced abstractions. Exploring both the seen and unseen, his paintings are otherworldly and atmospheric, having one foot in the material and one in the complexly unreal. He has been exhibiting for over 25 years, and is affiliated with the Art & Science Collaborations, Inc. (ASCI) and The New York Academy of Sciences.

By Danielle McCloskey
Contributor

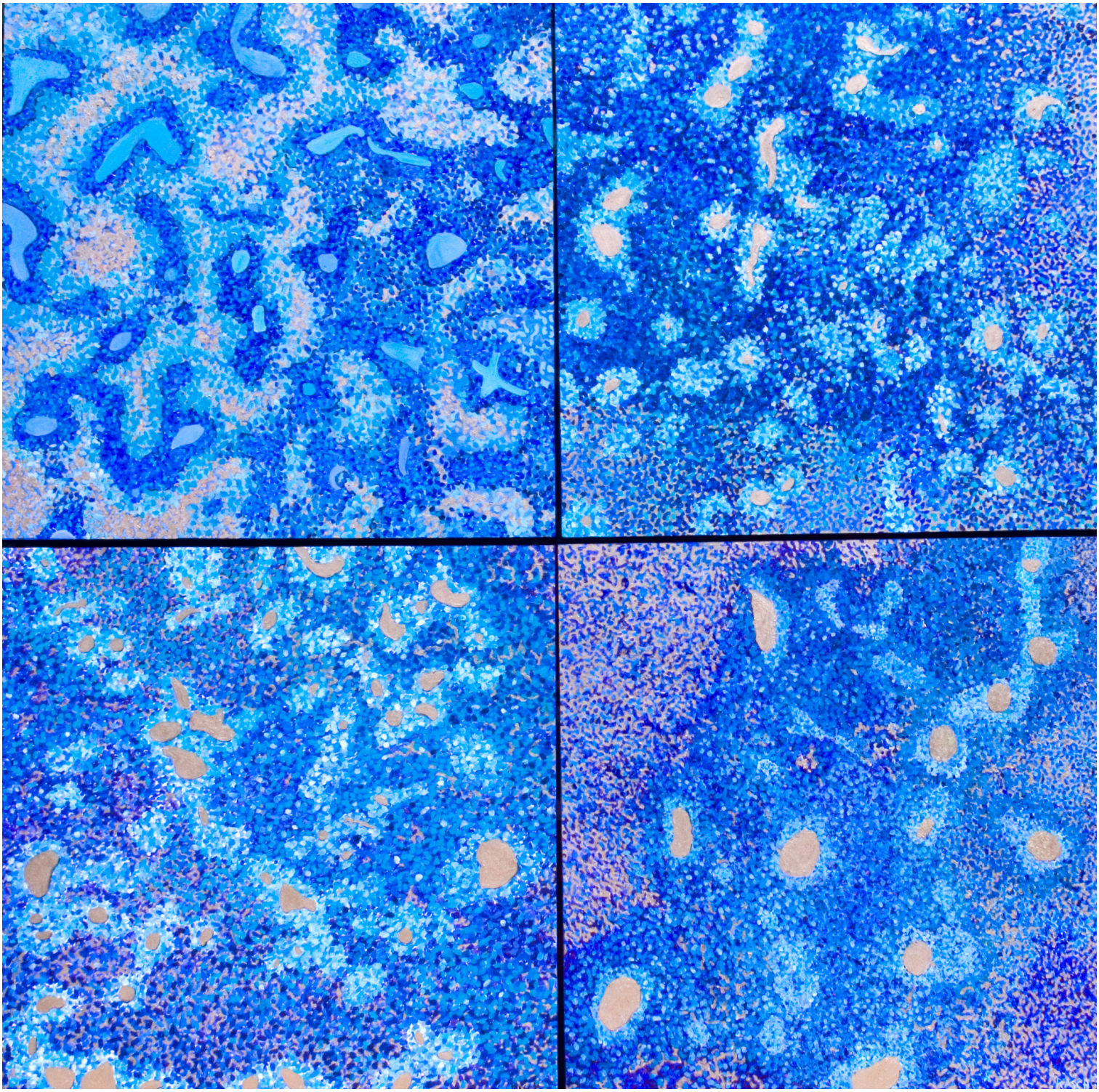
DM: *You have been creating artwork for over 25 years. What prompted you to start making science–based art?*

JR: When I first started painting I focused on developing my technique, learning about materials, and creating a feeling through my work. Initially I painted still lifes and landscapes. I was able to do a number of group shows and sell some of my work. I liked the feeling that I could express through the pieces but I felt something was lacking, the subject matter wasn't rich enough and was limited in terms of what could be communicated. As a result, after a while the subject matter stopped appealing to me—it was too literal. I was attracted to the abstract expressionists and the fact that they were trying to paint ideas. I also was getting more interested in painters such as Kandinsky who combined art and spirituality. Kandinsky also included science–based themes in his work. I had a difficult time with pure abstraction, as it didn't seem to have a strong foundation for me. This is where the combination of science and art appealed to me.

I had always been interested in science, particularly physics. I was reading books on relativity and particle physics. Much of what is contained in this subject seems fantastical (such as the relativity of space and time, the fact that light can act both as a particle and wave). Physics was trying to answer the big questions on the nature of the universe. I wanted to find a way to represent these concepts in my art. The first images I used were of bubble chambers, where atoms were broken down into sub–atomic particles, each with its own mass and charge, which make different paths in the bubble chamber. The patterns were beautiful, and if one didn't know what the subject matter was, it would appear to be an abstract pattern. This was the bridge for me between pure abstraction and landscapes and still life painting. In addition, particle physics is what everything is made of. Communicating this through my work is what appealed to me, more so than just painting another tree.

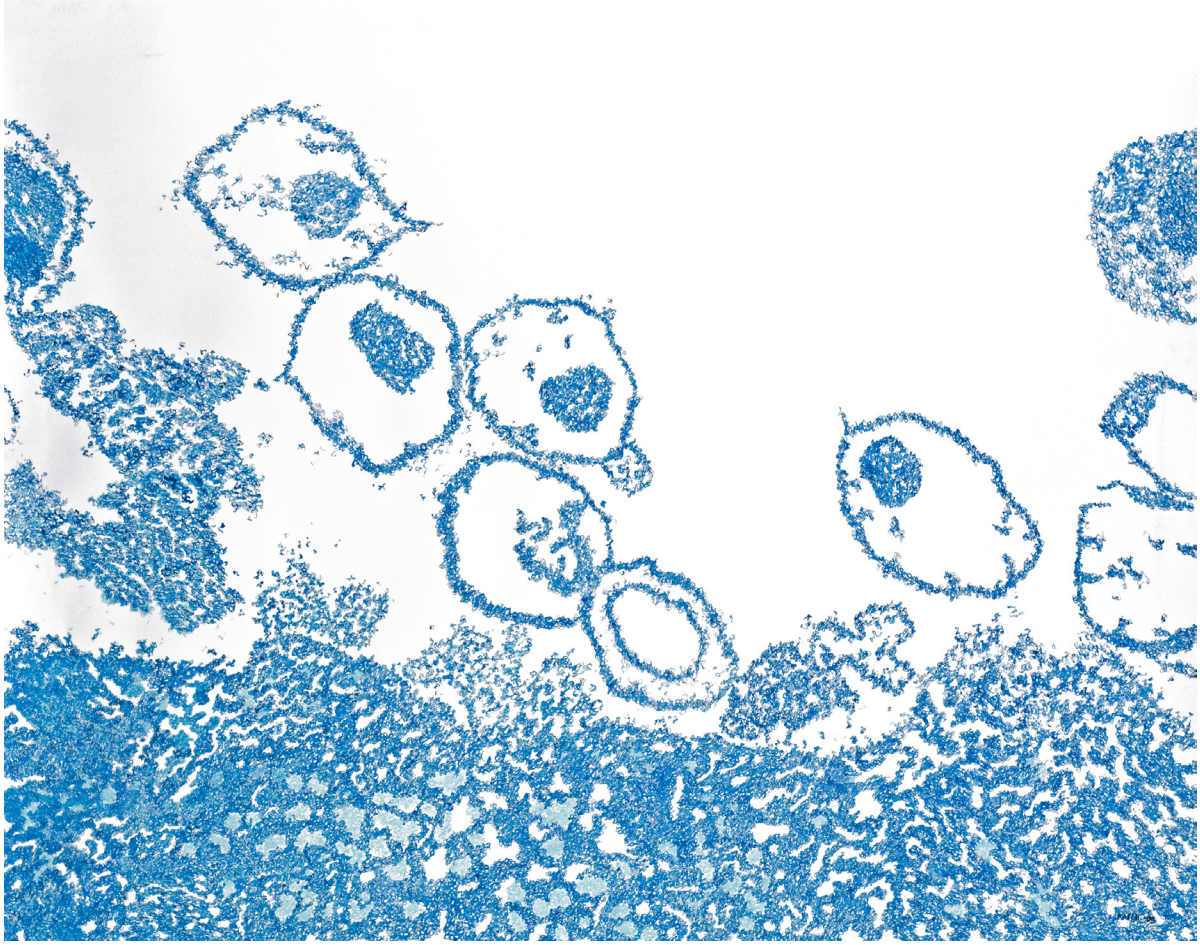
Gradually I moved from physics to capturing images from radio astronomy and finally to electron microscopic images from biology. The similarity among these disciplines was that I was painting patterns, from a cell pattern or the pattern from the non–visible radio frequencies of a neutron star. The images themselves seemed to be abstractions but were in fact representational. This is a key theme to my work: duality. Whether it's the duality of the abstract image actually being representative of real life, the duality of a beautiful cell image that represents a deadly virus or disease, or the like.

In addition to changing subject matter, I also started experimenting more with technique. I use a variety of techniques and media for relating my message, including oils, acrylic paint and ink, colored pencil, and pastels. Many of the works used my own variation of pointillism in their construction. Large paintings may use tiny brush strokes and many of the large drawings use small lines to build them up. In these works, the observer's eye blends the colors and positive and negative shapes together.



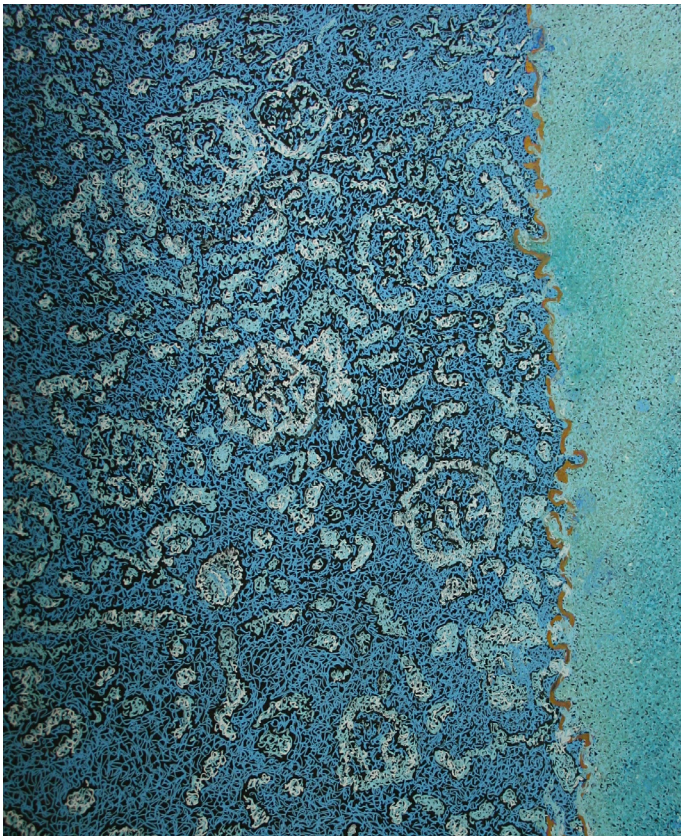
Four Seasons of Dark Matter *(2014). 30" x 30" each. Oil on board. Image courtesy of the artist.*

Uncertainty *(2012). 50" x 50". Acyrlic on canvas. Image courtesy of the artist.*



HIV/Deficiency *(2013). 55" x 69". Colored pencil on paper. Image courtesy of the artist.*

Particle Shower 1/Observer *(1993). 54" x 66". Acrylic on canvas. Image courtesy of the artist.*



Renal Cortex/Filter *(2003). 48" x 60". Acyrlic on canvas. Image courtesy of the artist.*

DM: *In your statement, you explain that your work further explores the phenomenon of duality in nature, and your driving force to make the unseen seen. Tying mysticism in with science is an immense undertaking. What have you discovered in this exploration, and what have you gotten out of your own work?*

JR: There are multiple dimensions that I am trying to communicate in my work, but mostly I want the observer to begin to question what he/she believes. For me, the exploration of the concepts behind the work is the most interesting. It allows me to question my beliefs, to think about the true nature of things, and I challenge myself to look past what is in front of me. This is what I mean by 'unseen/seen'. As I translate the science concepts onto paper or canvas or board, I get a greater appreciation for the beauty of the things we cannot see and how mysterious our universe really is. That is what I want to explore and communicate to the observer: look beyond what you see and discover a richer more interesting universe.

DM: *You separate your paintings and works on paper into three sections: Astronomy, Physics, and Biology. Are these an ongoing series? What is the current status with them so far?*

JR: All the series are ongoing. One thing I find interesting about working in these themes is the similarities of the imagery, particularly between biology and radio astronomy. The former is microscopic and enlarged and the latter is made many times smaller. Still, one can see similar patterns when looking at a cell or the patterns in the cosmic background radiation. Unfortunately, the physics series is winding down. It was the first series I used when I switched to science as a theme, and I am most drawn to it because of its philosophical nature. But the current way of capturing data from particle accelerators is computerized. While the information is far more accurate and useful, the organic imagery of the bubble chamber is lost.

Each of the themes I use has a special meaning. For example, what attracted me to the physics theme was how it was like philosophy: in physics, nothing is certain. Elements can be everywhere at once and can be both waves or particles, depending on how we observe them. The astronomy images are drawn from radio telescopes, which create images based on differentiating light of varying wavelengths. The images relate to understanding the nature of space and time. Images I use show cosmic background radiation, the residual heat signature of the Big Bang, and how space–time is distorted by massive objects. A newer theme is painting dark matter. Dark matter is what makes up most of the known matter in the universe (while dark energy makes up most of the mass of the universe). Dark matter interacts so weakly with visible matter that it cannot be detected,

and astronomers do not yet know what it is made of. It does, however have a gravitational effect, so it can be mapped by its distorting effect on visible light. The idea of creating art based on a form of matter that we can't see was appealing to me and fit in well with the concept of duality.

One of my more recent works is four images based on data from a ground–based telescope in Hawaii that imaged dark matter as the Earth rotated around the sun over the course of a year. The work is called *Four Seasons of Dark Matter*.

The biological images explore our relationship with nature and the duality of our existence. Many of the images I use are of deadly viruses and infections such as Ebola or HIV that, while beautiful to look at, belie their destructive qualities. Not all the biological images represent diseases. For example, one of the drawings shows the symbiotic relationships between plants and bacteria. There are also works that show the basic structures of our body such as neurons and the rods and cones of the eye. I am just beginning a series on the mechanisms the body uses to heal itself. I think I was getting tired of showing death and destruction and am ready to represent healing.

DM: *After you get the initial image(s) for your piece, how do you develop the imagery in your paintings?*

JR: I want the core of the painting to be representative of what I am painting. I am not trying to be perfectly accurate, but a person who works in the area should be able to recognize what the image represents. I feel if I am using science as the basis of my work, then abstracting the image too much would defeat the purpose of what I'm attempting to do. I will edit the image and change colors and background as the colors in the original images typically are artificial, either coming from stains in biology or from an astronomer's decision in how to show light from the spectrum beyond what is visible. Mostly I try to find patterns in the image and work with the color and design to accentuate these features. Also, I incorporate gold in many of the works. This is drawn from medieval paintings that would give gold halos to religious figures. In my work the gold symbolizes science taking over from religion as the explanation as to why things are the way they are.

DM: *Out of all of your pieces, your physics paintings seem to have one element the others don't: words. Why the inclusion of phrases in these paintings rather than others?*

JR: There are a couple of reasons for this. First is composition. The physics images are simpler than the others so the addition of the words and formulas are more balanced. With the other images the words would compete with the image. Second, as I said above, to me physics is almost like philosophy—the concepts that underlie it seem impossible, but are true. The image alone wouldn't communicate this philosophy so I incorporate the concepts or formulae of particle physics into the painting and the image and words together tell the whole story.

In my physics works I combine bubble chamber images with words or formulas such as 'User Created Reality' or Heisenberg's uncertainty principle to communicate the true nature of reality and how it differs from what we observe in the macro world.

DM: *Furthermore,* Uncertainty (50x50) *has a formulaic equation that stands out from the blackness. Could you talk about this piece a little?*

JR: Uncertainty represents an atom being broken down into smaller component pieces. At this level, quantum mechanics is the dominant force in the universe and at that small level weird reactions take place (known as quantum weirdness). The formula at the bottom is one of the aspects of quantum weirdness—it is Heisenberg's uncertainty principle. This principle states that you can never know two facts about an object simultaneously with certainty: if you know its position with 100% accuracy you cannot know its velocity, and vice versa. This holds true with many other properties of particles. The concept of never being able to know something with certainty not only applies to physics but to the macro world as well. The painting is asking the viewers to question what they know and not assume they know anything with certainty. The choice of black and white for that image was to make it look like an image and formula that would be put on a blackboard in a classroom. This idea is important as it symbolizes the need to learn and, as part of the learning process, to question and not assume we understand how things are.

DM: *Do you have any projects or shows coming up in the near future?*

JR: I am trying to put together a show in the late winter or early spring. It would be a solo show and also be used as a fundraiser for a dance company that I am on the board of, Battery Dance. The company has a program called Dancing to Connect where dance is used as a tool for teenage empowerment. They work with high school-age kids throughout the world, many in the developing world. They have just returned from Vietnam where, among other things, they worked with blind kids and had them work with sighted kids in a dance program. You can find out more about them at *www.batterydance.org*. I have a strong desire to use my art to help others and the project with Battery Dance fits in with that concept. I would like to find a gallery that shares my vision of how art and science can be used to reach people and help them look beyond what they see in their daily life: see the unseen.