

# Q&A: Patricia Vader pivoted from astronomy to sculpture

She uses the same approach to problem-solving in her art as she did in her science.

By Toni Feder

**I** was passionate about science as long as I did it,” says Patricia Vader, who earned her PhD in mathematics and natural sciences in 1981 at the University of Amsterdam. Her astronomy career took her to Yale University, the Carnegie Observatories, and the Space Telescope Science

Institute. Among other highlights, she and a colleague discovered a quasar. Eventually, though, she felt that it was time to do something else to keep herself “amused and interested and excited.”

Since 2001, Vader has been a sculptor. Many of her works are large public sculptures with mov-

ing parts—on view in cities in California, Colorado, New York, Texas, and other states. (Photographs and more can be found on Vader’s website, <https://patriciaavader.com>.)

## **What drew you to science?**

As a teenager, I read Sigmund Freud and Carl Jung, and I thought I would become a psychiatrist. But I was turned off by the prospect of 13 years of studies. It’s a good thing because I don’t think I would have done well. One of my grandfathers was a mathematician who had wanted to become an astronomer. I still have his thesis, so maybe he was an inspiration. And my father, who was an engineer, pushed me to go into the physical sciences.

I ended up in astronomy because the classes, departments, and research groups in physics were so large. It was intimidating. Astronomy seemed more accessible and a field where it would be possible to have real connections with people. And astronomy is fascinating.

## **Describe your educational and career paths.**

From age eight, I went to school in France and for a time in Algeria. For college, I decided to return to the Netherlands, where I was born. The Netherlands had a better reputation in astronomy than France.

While I was working on my PhD, Jerry Ostriker from Princeton University and Beatrice Tinsley from Yale visited. I talked to them about my work, and they both encouraged me to visit. I spent about three months at Princeton, and then I visited Tinsley. She was a famous astronomer and the first



◀ Patricia Vader (Photo courtesy of Patricia Vader.)



▲ *Wheely Whirly Peacock* was Patricia Vader's first public artwork. It was commissioned by the City of Orinda in California and has stood outside the public library since 2009. (Photo courtesy of Patricia Vader.)

woman hired in astronomy at Yale. She invited me to stay with her, and we discussed all kinds of things, including music.

When I finished my PhD thesis, I spent another year in Amsterdam. I then got a job as an assistant professor at Yale. I moved to the US in 1982. Besides its excellence in science, Yale has a wonderful cultural environment, with theater and music. I was very happy there.

I started out as a theorist. But at Yale, I got involved in some observational work. I traveled to the

Cerro Tololo observatories in Chile; the observatories in Tucson, Arizona; and a few other places. After Yale, from 1991, I worked at the Carnegie Observatories in Pasadena and then the Space Telescope Science Institute, where I stayed until 1994.

#### ***What made you take the leap from science to art?***

While I was at Yale, I began to realize that I would rather be on the side of the performers than that of the audience. I also felt the academic

## AC Resistance Bridge

SRS SIM921 AC Resistance Bridge



**SIM921 ... \$2995** (U.S. List)

- Accurate millikelvin thermometry
- Microvolt/picoamp excitation
- 1 mΩ to 100 MΩ range
- 2 Hz to 60 Hz frequency range
- Linearized analog output

The SIM921 AC Resistance Bridge is a precision, low-noise instrument designed for cryogenic thermometry applications. With its ultra-low excitation power, the SIM921 can measure thermistors and other resistive samples at millikelvin temperatures with negligible self heating errors.



**SIM900 Mainframe loaded with a variety of SIM modules**



**Stanford Research Systems**  
Phone (408) 744-9040  
[www.thinkSRS.com](http://www.thinkSRS.com)

Patricia Vader's sculpture *Sunflower* was purchased by the City of Livermore in California in 2018. (Photo courtesy of Patricia Vader.)

workload was impacting my private life.

All that was in the back of my mind while I pursued my scientific career. I enjoyed working with students and going to observatories. Computers became too prominent for my taste and changed the way people worked. It became possible to observe remotely. I was not too happy about it.

Later, the Space Telescope Science Institute was not a positive experience for me. It felt more like a business than a university. When budget cuts demanded a reduction in staff and an attractive financial bonus was offered for voluntary leave, I took it.

#### ***Was it a difficult decision to go into art?***

It's odd to say, but it's true: My father died while I was at Yale, and I'm not sure I would have had the courage to tell him that I was leaving science. When your parents die, you don't have their constraints anymore. That kind of facilitated this step. And I was aware of that.

#### ***Did it feel financially risky?***

Yes, it was risky. But you know, Yale didn't pay much either. The first time I got any real money was at the Space Telescope Science Institute. I didn't do any of it for money—as long as I had enough to get by on, that was okay.

#### ***Have you missed science?***

No. I really felt that I had done everything in science that I wanted. I had explored the venues that I wanted to explore. And I had a good life doing it. It was a busy life. When I read now what I did, I don't know how I managed it all: the traveling, the meetings, the exchanges. I had done all that, and it was all wonderful. And I think



the prospect for me of doing the same thing for another 30 years was not appealing. I wanted to get out of it.

#### ***How did you go about shifting careers?***

Not having ever had any training in art, I wanted to enroll in an art school. I spent a few years taking various classes and building up the required portfolio. I was admitted to the California College of the Arts in San Francisco as a graduate student in painting. After a few months, I realized I was not learning much, and I lost interest

in the format. I had started doing some 3D work and decided I would learn more if I went into the sculpture program. I had to convince the school to let me. It meant an extra year of school, but I didn't mind. I found sculpture really exhilarating.

#### ***Tell me about your sculptures.***

After graduating in 2001, I moved to a large property that was formerly ranchland. I still look out at cows grazing in the field. The move changed the scale of things I made because I could work outside.

The first summers on this prop-



▲ *Sky Ride*, Patricia Vader's 2023 sculpture in Cass Park in Ithaca, New York, was commissioned by the local Community Arts Partnership. (Photo courtesy of Patricia Vader.)

erty were very windy, suggesting kinetics. With a bicycle wheel at hand and a tin full of thin stainless steel disks, I made my first windmill mounted on a rotating bicycle fork. It still spins and rotates and has never had to be re-greased. From there, I proceeded to larger kinetic sculptures, relying on an innate sense of balance and aesthetics.

A landscaping friend of mine, who saw my work and sat on the Orinda, California, Art in Public

Places Committee, asked if I would be willing to make a sculpture for her hometown.

I had dreamed of a sculpture with a large number of windmills for some time, a giant peacock. I made the peacock. In 2009, it was installed in front of the library in Orinda. It's still there. That was my first public artwork. It was gigantic

## Low-Noise DC Voltage Source



**SIM928 ... \$1995** (U.S. List)

- **±20 V isolated voltage source**
- **Ultra-low noise output**
- **Switchable batteries for continuous operation**
- **Output floats to ±40 V**

The SIM928 Isolated Voltage Source is ideal for applications where ultra-clean DC voltage is required. Voltage can be set between ±20 VDC with millivolt resolution, and the SIM928 delivers up to ±10 mA. The output circuit is optically isolated from all earth-referenced charging circuitry. As the output battery is depleted, the freshly charged standby battery is switched in to replace it. This provides a continuously uninterrupted isolated bias voltage source.



*SIM900 Mainframe loaded with a variety of SIM modules*



**Stanford Research Systems**  
Phone (408) 744-9040  
[www.thinkSRS.com](http://www.thinkSRS.com)

and well received. That set me on the course of public art.

There are all kinds of legal liability issues at stake with public art. Making big things is challenging. The artist is responsible if something fails or goes beyond budget. I used certified welders, engineers, and contractors for public art projects. I bought a pickup truck to transport the sculptures and took my large German shepherd for company and safety on many long trips across the country. I did public art for about 15 years, and I loved it.

I still deliver large sculptures on loan to cities.

#### ***What do you want people to take from your public art works?***

I create figurative work in a contemporary style that speaks of my passion for life. My art is tinged with elements of levity, whimsy, and humor. My objective in public art always is to lift people's spirits with an engaging surprise, which naturally flows out of my own desire and need to keep myself challenged, amused, and excited by what I do.

#### ***Have you been able to make a living as an artist?***

Not really. I had other support. I have sold roughly one big sculpture a year—either on loan or commissioned. That's pretty good.

#### ***Does your physics background feed into your work as a sculptor?***

It's the way of thinking and approaching problems. You use the same brain training in science and in art. At least I do. Basically, it's problem-solving. In art, you envision a sculpture and then figure out how to do it in all facets, practically and aesthetically and with the motion. It involves the same abilities as in science to think things through—for example, calculating wind load—and get a result.

PT

# **The arXiv server to require English version with submissions**

The availability of free translation software clinched the decision for the new policy. To some researchers, it's anathema.

By Toni Feder

**E**ffective 11 February, the arXiv preprint server is requiring authors to submit papers in English or with a full English translation. Within several weeks of publication, the November arXiv blog post announcing the change received more than 45 comments opposing the new rule. The administrators of the server say that is record pushback from the science community. "It was not a 100% comfortable decision," says Ralph Wijers, an astrophysicist at the University of Amsterdam and chair of the arXiv Editorial Advisory Council. Two issues, he says, held sway: Moderators can't judge the appropriateness of submissions in languages they can't read, and papers in English can reach a broader audience.

Researchers in physics, astronomy, quantitative biology, economics, and other fields use arXiv. The server hosts nearly 3 million preprints and receives, on average, roughly 24 000 submissions and tens of millions of downloads per month. (To read about the origins of the server, see the 2021 PT story "Joanne Cohn and the email list that led to arXiv.") The number of submissions per month is growing, in part because of AI-written papers. Non-English papers make up about 1% of the submissions, ac-

cording to arXiv administrators. A 2005 French-language algebraic geometry paper with, according to Google Scholar, 1212 citations is an example of an influential one.

Until now, authors had to include an English abstract, but their papers could be in any language. Under the new policy, authors can still submit in other languages, but they have to include an English translation of the full paper.

The arXiv editorial board had been talking for several years about requiring that papers be submitted in English, Wijers says. The triggers were the growth in submissions and the availability of free, adequate translation software, he says. "We want to be fair to moderators and give the papers the widest reach."

Although preprints published on arXiv are not peer reviewed, moderators look them over to make sure they are suitable. Some 300 experts around the world volunteer to make sure submissions are "not AI slop, not all false, and are in fact scientific papers," says Licia Verde, a Catalan Institution for Research and Advanced Studies professor of theoretical physics at the University of Barcelona and the chair of the arXiv Science Advisory Council. "It needs to be something that an editor of a journal would send to a referee."