

The intersection of art and science: how a chance meeting between a cancer researcher and an abstract artist led to an unlikely friendship and a project to help children with cancer.

Andy Woods' daughter was diagnosed with an aggressive kidney cancer called anaplastic Wilms tumor when she was just 4 years old. "The experience was shocking, traumatic and life-changing for all of us", Woods says. "For me, the thought of losing our daughter threw me into super-Dad mode, I wanted to fight this as hard as we could and I wanted her to survive, no matter what we had to do." What Andy decided to *do* was a bit extraordinary. Told that even aggressive cancer treatments (chemotherapy, radiation and surgery) were unlikely to save his daughter, he set out to find "new and more-promising research" which he hoped might lead to improved therapeutic approaches that might be more-effective against his daughter's cancer. Feeling the pressure of time, he also wanted to push any research that he found into the clinic as fast as possible, "so that there might be an option-on-the-table if she were to relapse again". It was a lofty goal, there was very little time, and he had no idea how to do it. "I knew I had to start by learning, and I knew I had to learn fast. I would spend all my free time reading. I would wake up at 5 in morning and pour over research articles, trying to learn "the language of science and of cancer" and looking for research which might be promising for Wilms tumor". Ultimately, Andy's efforts paid off. He found some research which proposed a new drug which targeted the cancer stem cell for Wilms' tumor. He petitioned the Children's Oncology Group, the National Cancer Institute, and the pharmaceutical company to use the drug in a clinical trial for children with Wilms tumor. "Ultimately, she never needed the drug." Woods said. "She went through aggressive treatment, including a stem cell transplant, which drove her into remission where she has remained ever since." But Andy was hooked. He had become passionate about children with cancer, science, and cancer research. "I knew I wanted to keep helping children." He considered fundraising to support science devoted to childhood cancer, "but I'm a terrible fundraiser." he freely admits. Instead, he decided to make a mid-life career change and become a cancer researcher. "There's this problem in children's cancer," Andy says, "in that you have these very rare cancers which only effect a small handful of patients each year. Because there is no money to be gained from treating a few patients a year with a very expensive drug, no one is interested in funding research into these cancer types, leaving children with no good therapeutic options. I thought that if I were able to become a researcher, I would be able to find a way to study these rare pediatric cancer types in need of more-promising therapies."

Andy met local Bozeman artist Luke Avery as he was just starting his pursuit of a career as a pediatric cancer researcher. They had moved home from treatment and Andy was working to get the promising drug he had stumbled upon into clinical trials. Having no internet access at their cabin in the woods, Andy would go to the Café M coffee shop early in the mornings and "work on cancer". As it happened, Luke was a regular customer at the coffee shop as well. Coincidentally, Andy and his daughter were invited as guests of honor to a local fashion show and while they were there, Andy noticed that "that guy from the coffeeshop" was there as well. To his surprise, it turned out that Luke's paintings had been turned into the clothing being modeled at the fashion show. Andy loved the abstract designs, patterns, and colors of Luke's work, and it reminded him of some of the amazing microscope images of cancer cells he had been studying. "I'll have to meet that guy," Andy thought.

A letter from Luke Avery:

I met Andy at the Cafe M coffee shop on east main in Bozeman, Montana. This coffee shop, owned by my good friend Tom Gibson, has allowed me to display my abstract paintings for more than six years. It's a practice of mine to stop most mornings and get my 16-ounce mocha. Andy was often there on his laptop, usually pretty much keeping to himself. He approached me one morning and said, "I really like your artwork, come take a look at this." On his laptop were pictures of live cancer cells. I was amazed how perfect they were in their abstract form. So terrible in what they represent, but to me, beautiful. It was then Andy explained to me what he was

doing. "I get up early every morning and come down here to do cancer research before my day job. My oldest daughter was diagnosed with an aggressive kidney cancer when she was 4 years old. I've been researching and teaching myself about cancer ever since in an effort to get better treatment options for her and other kids like her. Just recently, I took a new job at a cancer research lab where I will be studying her type of cancer. When we take pictures of cancer cells under the microscope, this is what they look like." He pointed to the screen, "As much as I hate cancer, I am amazed at how beautiful these images are, and I think they kind of look like your artwork." Andy asked me if I would be interested in attempting to replicate cancer cells through abstract painting. He sent me some photos and so I began. I created 5 paintings to the best of my ability. Researching with different mediums, I found it very difficult to capture a visual comparison to the photos but eventually, I decided to move forward. In the end, these paintings were sold at auction with benefits going to Andy's research at the Children's Cancer Therapy Development Institute. This took place in 2017, and now, in 2021, we are working together once again. I'm so pleased.

Abstract #1308 (EZ-PZ): The Painting

Andy sent another cancer cell photo for a publication of his research and asked if I would be willing to paint it. To put it mildly, I was thrilled. Living through the 2020 pandemic has been very difficult for so many people and I have been no exception. I have been forced to take early retirement due to my own health issues, so when Andy reached out to me, it gave me something to focus on and I began.

My painting started with a flurry, I'd gotten the colors all but perfect, but something wasn't quite right. The image he had sent had an element of motion. The cells seemed to curve and wind. I needed to capture this motion but I wasn't seeing it so I stopped. I studied what I had done so far and came to realize that more research was needed. How do artists give the illusion of movement with paint? I envisioned long, sweeping brush strokes over long stretches of canvas, but that wasn't working. I mixed water, oil, resin, ink, clay... the end result was a mess. After weeks of studying artists past and present, photos, letters, etc.. I found what I was looking for. While observing the paintings of Vincent van Gogh, Paul Gauguin insisted that Vincent painted too fast, while Vincent argued Paul was *looking* too fast. It was then, through slow studies of van Gogh's work, I saw how he was able to give the viewer trees, grass, clouds. All with the illusion of movement. Hundreds of tiny brush strokes. Not only that, but the speed in which the brush strokes were applied.

This painting, "Abstract #1308 (EZ-PZ)" is my end result. It is not a replicate or a rendition, but simply, an interpretation from a human of an abstract object. The truth is, there's nothing abstract about this story at all. It's a collaboration between the arts and the sciences. It's about my friend Andy Woods doing everything he can to keep his daughter safe and help as many children as he can along the way. It's about my striving to interpret the meaning of cancer cells in an artistic manner. This amazing project has brought a mutual appreciation and admiration to both of our efforts.

Sincerely,
Luke P. Avery
4letter

Abstract #1308 (EZ-PZ) backstory:

Luke's painting is an abstract interpretation of a microscope image taken of tumor tissue from a young child with sclerosing epithelioid fibrosarcoma (SEF). SEF is an aggressive cancer when metastatic and is severely understudied due to its absolute rarity. Andy has been studying pediatric SEF in the lab, and his SEF case report was recently accepted for publication in the journal Cold Spring Harbor Molecular Case Studies. Excitingly, Luke's painting was chosen to be the cover art for the journals publication.