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Health Care Heroes 2020: Lifetime Achievement winner Dr. Ronald Weinstein pioneered telemedicine

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Dr. Ronald Weinstein, co-founder of the Arizona Telemedicine Program.

Dr. Ronald Weinstein — a pioneer in the field of telemedicine — introduced the word "telepathology" into the English language in 1986.

Inventing the word stemmed from his early work in electron microscopy, where he digitized entire tissue images of a pathology slide so it could be sent electronically to physicians. By 2004, he set a world record for digitizing an entire slide in less than a minute, driving the industry forward to what it is today.

This work has been instrumental in making these high-resolution images available to physicians around the world where there are no practicing pathologists.

Of the 50,000 pathologists around the world, about half practice in the U.S., Weinstein said.

Still working full-time as director of the Arizona Telemedicine Program that he founded in 1996, Weinstein, 82, is the 2020 Phoenix Business Journal Health Care Heroes Lifetime Achievement winner.

"I have no thoughts of retirement whatsoever," said Weinstein, who has received about \$60 million in federal grants for his research and expects to publish another dozen research papers this year.

Born in upstate New York, he received his first research grant from the [National Institutes of Health](#) at the age of 27 when he was still a resident training to become a pathologist. He got his degree at the Tufts University School of Medicine in Boston.

"My dream at the beginning of my career was to do something that would have an impact around the world," Weinstein said.

Telemedicine boosted by Covid-19

Early in his career — at the age of 36 — he became chairman of the department of pathology at Rush-Presbyterian-St. Luke's Medical Center in Chicago, where he was hired as a cancer scientist.

After 15 years, he was recruited to [University of Arizona](#) in Tucson in 1990 to become chairman of pathology. And when top leadership at UArizona heard about his reputation as the so-called "father of telepathology," they turned to him to set up the Arizona Telemedicine Program six years later.

While Weinstein has lived and breathed telemedicine over the past 24 years, it really didn't take off until the coronavirus pandemic forced people into quarantine.

He had expected to see 40 million telemedicine cases in the U.S. in 2020, up from 37 million cases in 2019. But with the effects of Covid-19, telemedicine cases skyrocketed in March.

"It will have gone from 37 million to 1 billion in a year," Weinstein said.

The biggest reason for growth stems from federal government waivers relieving legal processes and reimbursement issues for health care providers during the pandemic.

As Covid spread around the country, Medicare added more than 80 new billing codes for various telemedicine services, opening the floodgates.

"I think in large measure these will be permanent changes," Weinstein said. "I think that market forces will force these permanent changes because it's been so positively received by the population."

Childhood disease

Weinstein said he longed to become a physician after his many interactions with physicians who diagnosed him with congenital toxoplasmosis, which was passed down by his mother after she was scratched by a cat while pregnant with him. The gondii parasite, a common parasite, can cause severe complications during pregnancy, including stillbirth.

While he said he was lucky to survive, the disease impacted his retina, affecting his vision.

Because his vision was blurry, he was in remedial reading classes until the seventh grade.

"My parents were eager to work around the vision problem and give me every opportunity," he said.

His father, who was the co-inventor of a gyro-glider, engaged Weinstein at the age of 11 and his younger 9-year-old brother in testing the helicopter device.

"We used to pull them to the local airport and pull them down the runway and measure their lift as they went into the air," Weinstein said. "I would sit in the trunk of the car with a rope and watch it fly higher and higher like a kite."

Their father also put his sons to work painting 1,500 trivets and selling them door-to-door until they raised \$500 to buy a kit to make a speed boat.

"He was showing us how you get rewarded for doing entrepreneurial things," Weinstein said.

Budding entrepreneur

There's been extensive research that shows people who contract congenital toxoplasmosis are affected neurologically and are more likely to become entrepreneurs, Weinstein said.

While Weinstein's mother wanted him to become a doctor, his father wanted him to have many other experiences before going into medicine.

So during his college summers, Weinstein ran a tour boat business and won a job as a Congressional intern, where he got to become friends with [John F. Kennedy](#) and his family. One summer his father suggested he get a job in a national laboratory — one that was rich in Nobel laureates.

At 22, Weinstein got a job as a head chemist at a marine biology lab, where he frequently worked on an outdoor tank for sharks working to control the pH balance of the water.

Every summer for three years, Weinstein recalled an older man would stop by on a bicycle asking questions about what he was doing. They would talk about his project, but he never bothered to ask the man's name.

One year, the man appeared in room where Weinstein was leading a group of college students mixing solutions.

"One day he came in looking for my supervisor," Weinstein said. "He was dressed like a janitor. So I said would you mind taking the trash down the incinerator?"

The next thing he knew, his supervisor was asking him do you know who that was?

It was [Albert Szent-Gyorgyi](#), who received the 1937 Nobel Prize in Physiology or Medicine for his discovery of the chemical ascorbic acid and its relation to scurvy.

He quickly apologized and Szent-Gyorgyi shrugged it off and became his mentor, intent on turning Weinstein into a scientist.

"He took me under his wing and was my mentor for the next seven years," Weinstein said. "I didn't find him. He found me."



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