

Otto Yang Story – Covid-19 Part Two

(As published in The Oak Ridger's Historically Speaking column the week of April 13, 2020)

On the day part one of this Otto Yang story published, Benita Albert received an email from him. He began by apologizing for taking so long to respond to her questions. She had been so absorbed in doing research on his life she had actually obtained adequate insight to produce the first part of this series without his responses to her questions.

She knew he had been quite busy with his personal involvement in research attacking the COVID-19 crisis. Wanting to share his story with you readers as quickly as possible, at my request, she prepared the story through research alone.

I think you will agree she did a marvelous job helping us appreciate what he has accomplished. Now, take a few minutes to enjoy the additional insights Benita as gleaned from her interaction with Otto Yang. You will appreciate him even more when you read his candid and complimentary memories of Oak Ridge. You will be even more impressed when you read his own words describing the valuable research in which he is engaged as he attacks the hidden enemy, COVID-19!

Otto Yang is a child of Oak Ridge, a town he describes as “A wonderful, idyllic place” during his time here in the 1960s to 1980s. He added, “There was such friendliness and kindness...when I was growing up. I remember being perhaps four- or five-years old, waiting for my mom at A&P (grocery store) ...standing by the gumball machine waiting for strangers to give me pennies and nickels.”

“My mom seemed to know everyone in town, and she was always greeting people and being greeted in return with smiles and friendly jokes. It was another era in Oak Ridge, when kids were free to roam without fear. In elementary school I spent hours unsupervised outside, riding my bike, skateboarding, climbing trees, and running around with friends.”

Otto says he has not been back to his hometown for any significant time since his parents moved away in 1992. But he adds, “I hope it hasn’t changed.”

Otto graduated from Oak Ridge High School in 1983. His collegiate years and medical training were spent in the northeast United States before his final move to the UCLA David Geffen Medical Center in 1999. Otto is the Associate Chief of Infectious Diseases, and he holds a joint appointment in the Department of Microbiology, Immunology, and Molecular Genetics.

He describes himself as a physician-scientist since his work also includes seeing patients in the hospital and training infectious disease physicians under his purview. Of his current, urgent assignment he says, “I am up to my eyeballs in the response of the UCLA Medical Center to COVID-19.”

Otto is the lead researcher with cohorts who are vigorously pursuing clinical trials studies. He added the following description of his current efforts: “I have been pulled completely away from my normal work, and I am currently a clinical trials researcher. This is a different field than my usual work with molecules and cells in the lab. It has been exciting and exhausting.”

Noting the anxieties and uncertainties, he continues: “Patients and doctors are desperate and scared, and clinical trials of new agents to treat this virus are the hope that they need so much now. It’s thrust me in the spotlight in a strange way.”

“Although I never was a specialist in running clinical trials, I was chosen for my blend of virology knowledge, scientific knowledge, and clinical knowledge to guide us through this morass of treatments that different drug companies and organizations are offering for us to test. There are so many, we have to prioritize and judge the ones to pursue among the many ideas pitched to us, ranging from crazy to reasonable. This is, I hope, a once in a lifetime situation (maybe second if you count AIDS).”

Much more on Otto’s medical resume’ is detailed in an April 9th *Oak Ridger* news article entitled “ORHS grad researching COVID-19.” This second installment of Otto’s story will step back in time to cover additional information on his Oak Ridge roots, will offer extended comments on his medical journey, and will ask his opinion on lessons to be learned from the COVID-19 crisis. My questions and his engaging answers follow.

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Q: Tell me about your family and their/your Oak Ridge background.

"My father, Wen-Kuang Yang, arrived in Oak Ridge in 1966, taking a position at ORNL as a postdoctoral scholar. He had graduated from the top medical school in Taiwan in 1963, an era where that was a guarantee of easy wealth as a practicing physician. However, his desire was to do biomedical research, so he went to Tulane for a PhD in biochemistry finishing in 1966...After his postdoc, he took a research scientist position at the Biology Division of ORNL, and we stayed settled in Oak Ridge. His whole life was (still is) research. He did basic research in the early days on transfer RNA, retro transposable elements (transposons), and cancer related research. In 1992, he and my mom moved to Taiwan when the government was spending large amounts of money to lure back Taiwanese scientists in the USA and counter 'the brain drain.' There he moved his research in clinical directions, working mostly on a cancer vaccine strategy. Dad is still living in Taiwan, still working on a company he started for cancer vaccine therapy."

"My Mom, Den-Mei Hsu Yang, came to the US with my dad and studied math at Tulane. Those studies were interrupted by my birth in 1965. My mom was brilliant, in many ways smarter than my father, yet she sacrificed everything for me and my younger brother... She took care of everything, working full time to support dad's work, cooking, cleaning, and taking us to music lessons and other extracurricular activities. She had been studying math and would have been great at anything she chose to do, but she gave it all up for us. Tragically, she was killed in a car accident in Taiwan in 2010."

"My brother, Hugo, graduated from ORHS in 1989. He went to Boston University for a combined BS and MD. He is now a practicing internist in the Palo Alto area where he takes care of the rich and famous."

Q: What Oak Ridge Schools did you attend? Any special memories?

"I LOVED high school. It was the happiest time in my life. My favorite classes were AP Calculus and Calculus II (taught by Benita Albert) and junior English taught by Miss Ruth Cates Baird. Math is the foundation for how I think about everything, science in its purest form. English was the foundation for how I write and organize language, mostly in the form of scientific papers and grant applications. Miss Baird and Mrs. (Carol) Yoakley, senior year, taught a clarity of thought in organizing writing that is fresh in my mind today."

"Most amazing was being surrounded by smart and nice kids who respected me for being smart. We had such a wonderful social group, especially senior year when we had get-togethers once or twice every week. We'd just sit, talk, watch movies, and play board games most of the time. It was total culture shock when I got to college and found that being a 'nerd' or a 'geek' was ridiculed at other schools, and that smart kids were ostracized... It was also notable that no cohorts of kids I met in college were as smart, talented, or funny as my gang in high school."

"Jefferson Junior High was also great. A favorite teacher was Mr. Clifford Smith whose teaching of geometry and proofs were fundamental in laying my math background. Another favorite was Mrs. Pat Aramayo; teaching French, she not only had us learn the language, but (we gained) a deep appreciation for the culture and the context of the language. She also instilled a sense of discipline in learning, making us keep organized notebooks with our lessons. This was invaluable for my future career, and organizing my work. Coach (Dan) DiGregorio brought the world of science into the classroom and inspired his students with a mixture of humor and slight intimidation."

"Other teachers of special note: Edgar Meyer (Linden and ORHS), who really instilled a love of music and built a competent orchestra from a ragtag group of us. At Linden, Ms. Bedford showed such kindness for all her students. Another memory was of my doing poorly in elementary school. The principal told my parents that my language skills were poor and that I had a learning disability because we didn't speak English at home."

Q: What inspired your beyond-Oak Ridge educational and career choices?

"From elementary school I wanted to be a physician-scientist (not just a scientist like my dad, who never did clinical training). A big part in my choice comes from my friend, Cindy Loh, whose parents were friends of my parents. I saw her a lot when our parents got together, and then we started at Linden together in first grade."

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"I was still awkward, unused to American food and utensils. Cindy literally held my hand and introduced me to navigating the cafeteria, eating weird stuff like chili, and talking to other kids (I was super shy). In first grade she got leukemia, was hospitalized, and received chemotherapy."

"When her parents knew she would die, they honored her last request to be able to go back to school. She sat next to me, very pale, very weak, missing her hair. When she died, I knew I wanted to become a physician-scientist, working with science to benefit medicine."

"Tragically, her dad died of cancer a year later, and her mother and brother moved away. About a year ago, after almost fifty years, I managed to find her mother and to share memories of Cindy. The mother was surprised that I retained such memory and caring about her daughter whom she said she still misses very much."

Q: Tell me more about your medical career and professional journey.

(After seven years at Brown University completing a combined college/medical program,) "I chose a residency in internal medicine at as hands-on a place as imaginable: NYU Bellevue Hospital. At this busy hospital we had to do everything, tasks like drawing blood, placing IVs, administering medication, and shooting X-ray films."

"This was also in the middle of the AIDS epidemic, before lifesaving treatments. About half of my patients had HIV, and I watched helplessly as they died in droves. My original plan to do oncology switched to infectious diseases, both because of this pandemic, and also because this was a field where science could move rapidly to the bedside, while cancer research was still vastly removed from medical practice (which has changed dramatically this last decade)."

"A fellowship in infectious diseases followed at Massachusetts General Hospital in Boston. I did a highly research-focused training program, essentially doing PhD training (without getting the degree). I developed a research interest in studying how the immune system fights HIV, how the virus reacts to immunity, and why the immune system loses to the virus. I stayed on as junior faculty there, appointed through Harvard Medical School where I launched my own laboratory research program."

Note: In 1999, Otto moved to the UCLA David Geffen Medical Center where his important work continues with his research now highly focused on solutions to the COVID-19 crisis.

Q: I cannot imagine the stress you faced while treating so many AIDS patients during a time of high mortality. How did you cope?

"It was tough. Memories of faces of patients, long dead, are still burned in my memory. As with any physician who deals with so much suffering, I learned to compartmentalize myself. I developed a style of being very calm and deliberate and sometimes humorous, because I found that patients and families draw reassurance and strength from that attitude even in the face of hopelessness. I was surprised at how often a patient facing certain death could still laugh at a joke."

"I'll give you one anecdote. I had a patient who had late-stage AIDS and had gone blind from cytomegalovirus retinitis (a viral infection of the retinas). I took care of him, he recovered from an illness, and he was about to leave the hospital. I asked what he would do, and he said if he got well enough, he wanted to take a trip to China."

"I said that I had actually gone once. He asked how I managed the language barrier. I mentioned that I spoke a smattering of conversational Chinese. "What? How did a German guy learn Chinese?", he asked. He knew me by my first name and assumed I was German. I mentioned my ethnicity, and he said he was shocked. From my voice and my hands, he assumed I was a tall blonde guy with blue eyes. We both had a hearty laugh for quite a while, me, along with this AIDS patient who probably had only months to live."

Q: What do you do to relax? Do you have any hobbies or special outside of work interests?

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"My family, wife Cindy and our 18-month old daughter Charlotte. ...I'm late to the dad game (as compared to my peers). Cindy is an acupuncturist, and Charlotte is still deciding her career."

"My major hobby over the years has been collecting antique fountain pens. The other practical hobby is cooking. I cook most of our meals at home. I find it very zen to work with my hands creatively after being in my office all day at the computer, looking at data, and writing manuscripts and data applications."

Q: I couldn't be prouder of all you have accomplished and continue to do. As your former teacher I am especially impressed with your relatability and your gift for teaching as evidenced both in these answers, and in the many interviews which are now available via online archives. So, this last question, sincerely posed, asks you to speak to the lessons we should learn from the COVID-19 crisis.

"This is an interesting question. I think that what we have learned is that it is critical for society to think long term, for government to invest in science and science-supported infrastructure such as the CDC (Center for Disease Control). We were woefully unprepared for this pandemic which the history of other diseases such as the 1918 Spanish Flu, SARS, MERS, Ebola, and AIDS showed us would be coming."

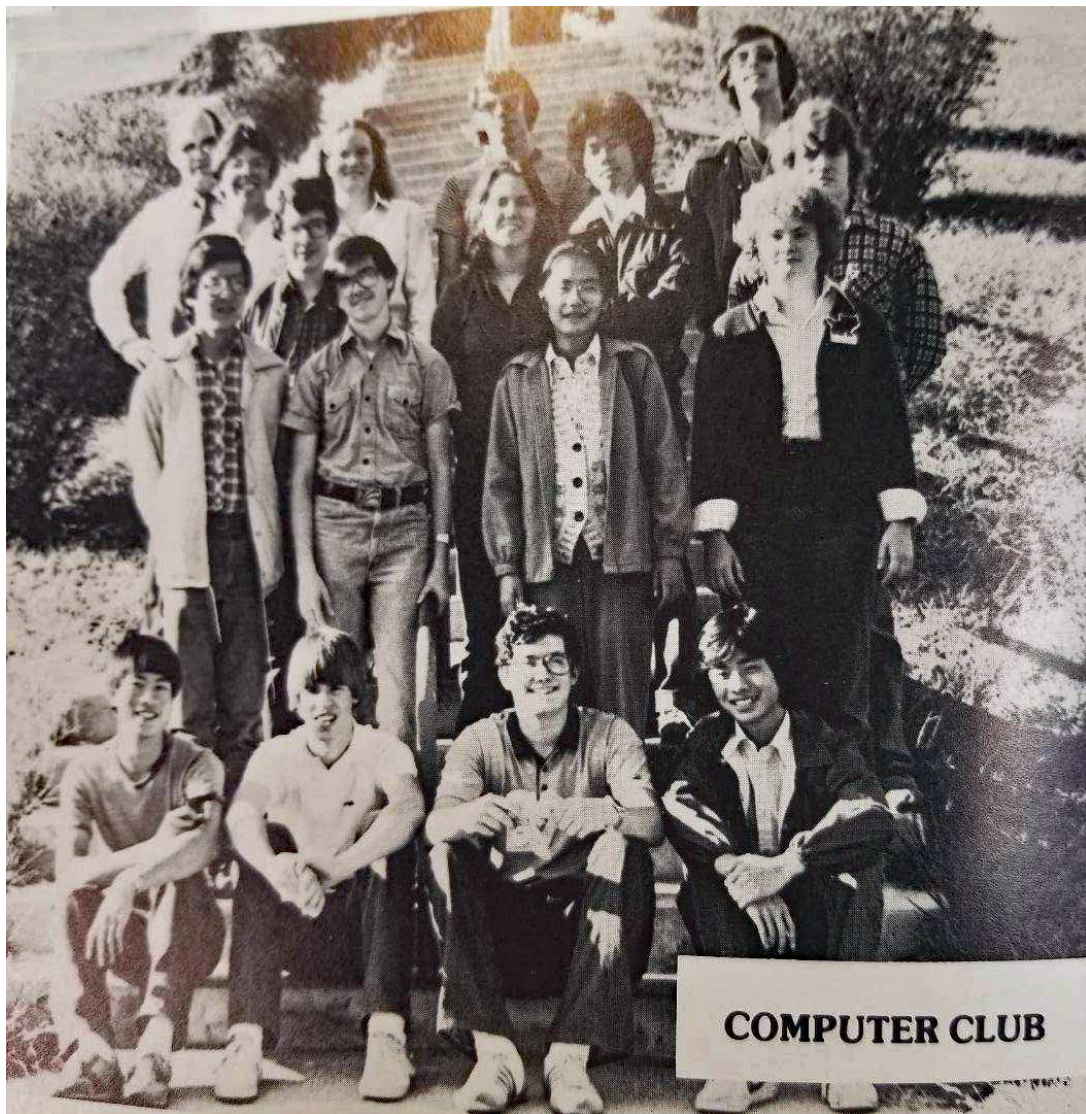
"Our CDC, which was a crown jewel for the world, and which used to rush to aid in fighting epidemics across the world, was allowed to crumble to its current state. To a critical point where it could not produce proper test kits in the quantity needed, and it has remained largely absent from guiding us through this crisis. When our politicians ask 'Who could possibly have predicted this?', the answer is that many of us were predicting this and were ignored."

What a valuable insight Benita has provided for us! Otto Yang's story is one of many she has brought us about graduates of Oak Ridge schools. Yet, his story is one of such magnitude because of the COVID-19 crisis and his personal involvement in the research. Thank you, Benita, for bringing this story to us.

We, the nation, the world, would do well to pay attention to such professional opinions as those of Dr. Otto Yang! As he correctly notes, preparedness must be planned ahead. COVID-19 will not be the last pandemic. Let's hope that what is learned from this awful experience results in a future where preparedness is planned in advance and when the time to fight the next pandemic comes, we, as a nation, can be even better able to respond quickly and effectively, not only for our nation, but able to provide assistance to the areas in the entire world where help is needed.

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Otto Yang is in the lower left of this photo made in his Junior year at Oak Ridge High School.

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Otto Yang <https://bioscience.ucla.edu/faculty/otto-yang>