

## Chiu: from Electrical Engineering to Viral Discovery

Charles Chiu, although majoring in electrical engineering and computer science, was eager to broaden his horizons during his first year of college—taking linguistics, music, philosophy, and ballroom dancing along with an engineering course. He also had a knack for history. “In college I was seriously considering majoring in history, and my history professor encouraged me to pursue a doctorate in history,” he recalls.

By the end of his second year, however, Chiu decided on an entirely different career path. “I realized that perhaps an M.D./Ph.D. was the way to go—to take my skills in computer science and engineering and apply them to help patients through clinically relevant research,” he says, adding: “The long, arduous path to the dual degree was the right one for me.”

Today, after having earned both those degrees, Chiu, 39, is an assistant professor in laboratory medicine and infectious diseases medicine at the University of California, San Francisco (UCSF) and a board-certified practicing infectious diseases physician. He also directs the UCSF-Abbott Viral Diagnostics and Discovery Center (VDDC) at China Basin, and is associate director of the UCSF clinical microbiology laboratory. “I feel that my career is still at a very early stage at this point,” he says, “but I hope to make discoveries that will improve public health and clinical care.”

Abbott funds the VDDC, a viral discovery center at UCSF supporting diagnostic research and focusing on samples provided by

the company and academic collaborators. The center is also open to scientists from other laboratories, institutions, and non-profit organizations. “The goal of the research is to apply microarray and deep sequencing methods to detect unidentified or novel viruses in clinical samples,” Chiu says. “In this respect, the facility work is very similar to my own research program.”

In his UCSF research, Chiu also focuses on microarrays and deep sequencing methods, adapting them for use in diagnosing viral infections and identifying novel viruses. “Even in today’s modern era, we still routinely fail to diagnose 25% of respiratory infections, 50% of diarrheal infections, and more than 70% of cases of encephalitis,” he says. “A large proportion of these unknown cases may be caused by new viruses.” In using state-of-the-art technologies to identify these viruses, he continues, “We will be able to find better ways of diagnosing and treating these infectious diseases. You can’t treat a patient if you don’t know what you’re treating.”

Chiu was born in Columbia, Mo., but spent his early childhood in Plattsburgh, a town in upstate New York, near the Canadian border and Lake Champlain. When he was nine, his family moved to Los Angeles, where they lived in the San Fernando Valley until he enrolled at the University of California (UC), Berkeley, as an undergraduate.

His parents came to the United States from Taiwan to pursue advanced graduate studies in ac-

counting. “My father is Hakka Taiwanese, and my grandfather brought my mom—and five aunts and one uncle—to Taiwan in 1949.”



Although raised in the United States, he and his brother learned to speak Mandarin, and “I am relatively fluent in the language,” he says. Chiu earned his bachelor’s degree in electrical engineering and computer science from UC Berkeley in 1993, and a combined MD/PhD degree from UC Los Angeles in 2001. Following his doctoral studies, he completed a residency in internal medicine, followed by a clinical fellowship and postdoctoral training in infectious diseases at UCSF.

Chiu and his wife, who is a tax accountant, have two sons, ages two and four. Additionally, his mother is an accountant, his father an accounting professor, and his brother an MBA who works for the corporate development group of a major health-care company. In his spare time, Chiu enjoys playing poker, saying that “it stimulates the mind; there’s a lot of mathematics and psychology to it.” He also likes dancing—ballroom and Latin—swimming, basketball, and skiing. He plays the piano, and especially loves to play Mozart.

### Marlene Cimonis

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