

Michael Letko '11

The Joseph C. Palamountain Award for Young Alumni Achievement

Michael Letko is a molecular virologist who spent the last five years developing a platform to identify viruses that can transmit from animals to humans. Scientists have stored sequenced genes of viruses in a public database for years, but it went largely unused until Michael noted similarities among coronaviruses — and developed a tool to synthesize the data. After completing a doctorate in microbiology from the Icahn School of Medicine at Mount Sinai, he pursued postdoctoral research at the National Institute of Allergy and Infectious Diseases lab in Montana. There, he became fascinated by how coronaviruses — known for their spikey outer layer and tied to the outbreaks of SARS and MERS — attach themselves to human hosts.

Michael's groundbreaking tool allows scientists to quickly compare the features of new variants with those of strains known to infect humans. The platform can be used to reliably and rapidly predict which strains are likely to become major threats to public health.

"The whole goal of this is having a little bit less of a scramble when new sequences come out," he told Wired magazine last year. "We can already have some kind of preliminary functional data on it."

His discovery came just in time.

By summer 2019, Michael was running his own lab at Washington State University, where administrators offered to invest in his work. In early 2020, news of a mysterious illness spreading among the residents of Wuhan, China, circled the globe. That summer, Chinese scientists sequenced the genome of what would become known as COVID-19. A desperate race began to understand and develop vaccines to thwart this novel coronavirus. Michael and his research team, who quickly confirmed that it shared a receptor with SARS, were suddenly on the forefront of a worldwide effort to stop a pandemic. His platform was distributed to 20 research groups around the world developing vaccines.

Meanwhile, Michael was fielding a flood of requests from media outlets, government agencies, pharmaceutical executives and the public. Like most scientists, he was unaccustomed to media attention. "Starting a new lab under that level of scrutiny, in the middle of a pandemic — it was, well, big."

It's been quite a journey for the native Texan, who arrived at Skidmore planning to study theater. As a freshman, he and a friend auditioned for several student improv groups; "we made callbacks but not the final cut. I guess that was that," he says with a wry smile.

At the same time, he was taking a neuroscience course with Professor Jennifer Bonner, who one day mentioned "needing to feed the fish." Intrigued, Michael started a conversation that would eventually lead to a paid summer internship working in her lab.

"It was one of the key, defining moments in my scientific career," Michael recalls. "Before then, I wasn't even sure I wanted to pursue science." He declared a microbiology major the following fall. Encouraged by Bonner, he applied and was accepted into a summer undergraduate research program at Mount Sinai, laying the foundation for his subsequent graduate study there. A junior-year virology course inspired Michael to focus on that area of the discipline.

But he wasn't all science all the time. A talented pianist, he often spent pleasant evenings playing at Filene, Zankel and "the beat-up old piano in Falstaff's" until the wee hours of the morning.

"Skidmore was a place that nurtured my interests, scientific and otherwise." He has stayed in touch with Professor Bonner and has consulted her on important professional decisions.

"I am very proud of my recent work with coronaviruses and being able to help contribute to our early knowledge of SARS-CoV-2. As scientists, we are often trained to 'sell our work,' but in this case, the work kind of sold itself; the question and answer were both clear and very timely."