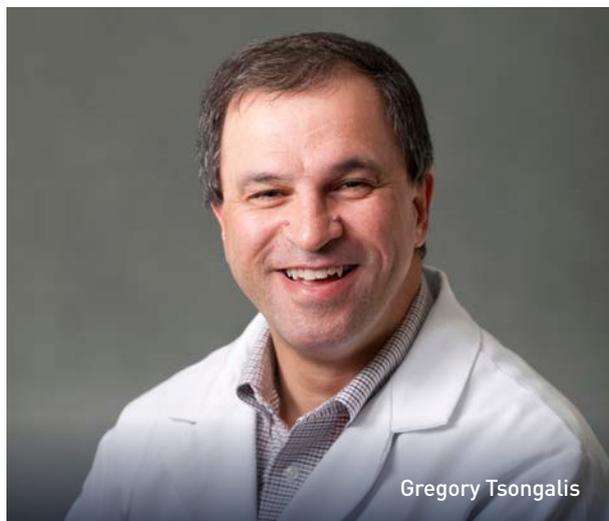


Photos by Mark Washburn



Gregory Tsongalis



Kimberly Rumrill, a genomic technologist, tests samples in the Pathology lab.

EARLY RESPONSE TO A NOVEL PANDEMIC: Q&A WITH GREGORY TSONGALIS

ON MARCH 18, DARTMOUTH-HITCHCOCK'S LABORATORY FOR CLINICAL GENOMICS AND ADVANCED TECHNOLOGY (CGAT) became one of the first labs in the country—outside of state health laboratories and the Centers for Disease Control (CDC)—to begin testing people for the novel coronavirus.

Gregory Tsongalis, PhD, a professor of pathology and laboratory medicine at Geisel, who directs the CGAT at Dartmouth-Hitchcock Medical Center (DHMC), talks about some of the keys to his lab's preparedness, as well as some of the challenges and early lessons learned in responding to the pandemic.

Q: WHAT WERE SOME OF THE FACTORS THAT ALLOWED YOUR LAB TO GET THE TEST UP AND RUNNING SO SOON AFTER THE FDA GRANTED AN EMERGENCY USE AUTHORIZATION TO HOSPITALS AND ACADEMIC MEDICAL CENTERS?

Tsongalis: We're fortunate to have a state-of-the-art clinical genomics lab in the Williamson Translational Research Building, and we have a really good staff. So, we didn't have to wait to bring in new equipment or train people. And the administration at DHMC gave us the green light to do what we thought we needed to do.

Coordinating our efforts with the New Hampshire State Lab, we were able to get the reagents we needed to verify testing here and bring things on board very quickly. And because the set-up is the same as we use for other viral testing, we're able to use our robotic instruments—which can process up to 1,000 samples every 24 hours.

Q: WHERE ARE YOU IN TERMS OF TESTING VOLUMES (AS OF MID-APRIL)?

Tsongalis: So far, we've processed about 2,000 tests, and we're currently running more tests per day than we did in our first week. We're still helping the state with any backlog they have each week, and we're now able to assist other facilities with testing. But with a surge still anticipated in this region, we're probably not close to the apex yet.

Q: WHAT HAVE BEEN SOME OF YOUR BIGGEST CHALLENGES IN TAKING ON TESTING FOR COVID-19?

Tsongalis: We're dealing with a lot of unknowns, such as its infectivity rate and how long the virus may survive in different settings. In the lab, we take precautions because of the contagious nature of things like HIV and Hepatitis C. This is a couple of levels above that—operating under a heightened level of PPE was something we've had to get used to.

We've had a number of operational and logistical things we've had to work through, like coming up with a streamlined workflow, almost like an assembly line, so that we're prepared for however many samples come through and are able to get results back to the clinicians in a timely fashion.

We're covering 20 hours a day in the lab, and we've shifted people's hours around and staggered the days so we're not all here at the same time, in case someone gets sick. Every day, I send an email saying, "Don't let your guard down, at work or at home."

Q: FROM YOUR PERSPECTIVE, WHAT'S THE BIGGEST LESSON LEARNED IN TRYING TO COPE WITH A PANDEMIC LIKE THIS?

Tsongalis: I think it's that we need a really robust national laboratory network that includes the federal labs, the state labs, and academic and hospital labs, so that we can coordinate these responses much better and faster.

Q: WHAT WILL YOU BE FOCUSED ON MOVING FORWARD?

Tsongalis: We're working on a few things that could help us speed up the testing process. We're also keeping our eye on any mutations that the virus may accumulate, to see how that may impact the severity of the disease and our testing capabilities.

While the uncertainty of what lies ahead can make us all feel a bit anxious, I think we're going to be ready to handle whatever comes our way.

The CGAT COVID-19 team members are: Dr. Joel Lefferts, Heather Steinmetz, Samantha Allen, Michael Johnston, Leanne Cook, Rachael Barney, Lucy Thompson, Donald Green, Kimberly Rumrill, Jenna Schofield, Justin Giffin, Jing Bao, Kelley Godwin, Brianna Houde, and Wahab Khan.

TIM DEAN