Pratip’s lab trained a team of pathologists in cutting-edge immune cell analysis to fuel clinical research on COVID-19

Pratip Chattopadhyay adapted his sophisticated technology to study the immune system in COVID-19 patients

Pratip K. Chattopadhyay, PhD
Associate Professor, Department of Pathology, and Director, Precision Immunology Laboratory

How did your research focus change in response to the COVID-19 pandemic?

My lab studies immune responses in cancer patients on immunotherapy, and we realized early in the pandemic that our methods and tools were
also relevant to COVID-19 research. Now we are using cutting-edge technology to profile whole-blood samples from patients to characterize the cells involved in the immune response to COVID-19 infection. We are assessing whether the presence or activity of certain cells in blood predict COVID-19 disease severity. We are also evaluating whether those cells might respond to drugs used in cancer immunotherapy. If so, these drugs could perhaps be repurposed to treat COVID-19.

**What adjustments have you made in order to pursue this research?**

My lab remains essentially closed, so we are working with Christopher Park, MD, PhD, and a team of pathology residents and fellows to collect and process samples. These folks weren’t experienced with our instruments or techniques, so we gave them written protocols to study, held a virtual training session, and then did a dry run to iron out details via webcam. I wasn’t sure that it would work, because the technology is quite complex. But we’ve studied nine patients to date and the data are very high-quality, thanks to the team. They are incredibly fast learners and dedicated scientists.

**When you look back on this time, what will you be most proud of?**

In a challenging environment, at the epicenter of this pandemic, we are proud to contribute knowledge about this terrible disease, to share our data with bioinformaticians and other biologists, and to plug into the ecosystem of clinical research and trials for COVID-19 treatments and vaccines.