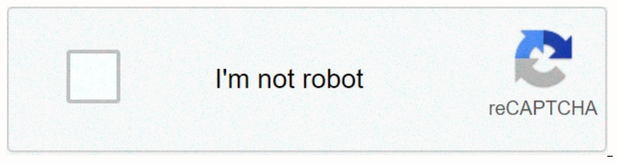

Continue

The science lane

The first choice for museums, universities and private collectors for more than 50 years We are specialists in museum model cabinets that preserve and preserve your valuable collections of natural history. Lane Science Museum pattern cabinets include geology cabinets, paleontology cabinets, herbal cabinets, botany cabinets, zoology cabinets, ornithological cabinets, and entomology cabinets for storing natural scientific samples such as plants, fossils, rocks, minerals, bones, insects, animal skins, and birds. -marinemammalogy.org Rating: 2.67 -jtinsider.com Rating: 2.67 -ionarts.org Rating: 2.67 -hawaiimedicaljournal.org Rating: 2.67 Hawai'i Journal of Medicine & Public Health, HJMPH, Hawaii Journal of Medicine & Public Health -diarioexpreso.com Rating: 2.67 Launch Lane Digital Health (fka Digital Health Accelerator or DHA) supports companies ready to transition from R&D to sales. The accelerator provides funding, collaborative workspace, professional mentorship, and an introduction to key healthcare stakeholders and investors in Greater Philadelphia. Participating companies accelerate the development of prototypes up to customer acquisition. Launch Lane curricula are appropriated for professionals with specific skills to help companies meet their individual milestones. What we're looking for for Launch Lane and Launch Lane Digital Health accelerators to look for technology or technology-based companies with a prototype ready to deploy in a commercial environment. These technologies may include both hardware and software solutions and services that are innovative with high commercial viability. Competition for the program is fierce, we accept only six to seven companies per class. A diverse selection team composed of serial entrepreneurs and representatives of hospitals, pharmaceutical industry, insurers/payers and investors selects six to seven companies per class. Editor's note: Since we published this story, remdesivir has been approved for emergency use against COVID-19. You can read the latest from Stanford Medicine here. At the end of February, Benjamin Pinski's commute became unmovable. He was preparing the Stanford Laboratory of Clinical Virology for testing for COVID-19, and every time he went between his home in San Francisco and Stanford, making so many urgent phone calls that he feared an accident, he repeatedly pulled off the highway to discuss solutions with his team and reference information on his laptop. Eventually, the associate professor of pathology gave up on the disc. For the first two weeks of March, as COVID-19 community transmissions increasingly made news in the United States and the World Health Organization debated whether to report a pandemic, he took a hotel room next to his lab. Pinsky has been at the forefront of extensive joint efforts since January to determine testing for COVID-19 Bay Area-based efforts parallel laboratories across the university are working on antibody testing, evaluating how these can provide immunity, developing treatments and solving many other problems with the virus. The race to respond to a pandemic can mark a turning point in how scientists mobilize and collaborate to face challenges, with science yore seeming as slow as lounge music by comparison. In the short term, the virus has already brought regulatory changes and an unprecedented volume of publications, not to mention stories of perseverance and teamwork that scientists will share in the coming years. Testing, Testing in determining how to respond to a pandemic, was the decisive first step in an accurate and rapid test for COVID-19 infection. Healthcare professionals must know who is infected in order to prevent the spread of the virus and to protect not only other patients, but also the hospital staff themselves. In the first weeks of 2020, as reports of the virus struggled to keep pace with its spread, Pinsky began ordering supplies to create the test. By February 4, he says, we actually started screening samples that were negative for other respiratory viruses to kind of keep an eye on what was happening in our area with the idea that if we were to identify positive patients, we would be able to ramp up testing fairly quickly. By February 29, the day the U.S. Food and Drug Administration eased requirements for clinical laboratory tests, Pinsky's team had identified patient samples that were positive for COVID-19. The following Monday, his lab notified the FDA that they had completed testing requirements. They sent an email back that afternoon, saying, 'You have permission from the FDA,' a recall-process that would typically take several months or more. We went live two days later, he says, in a wednesday-just timely response to the surge in community traffic in the Bay Area.Pinsky refers to this period-when his lab rushed to increase testing capacity for many hospitals in region-like beginnings. That was seven weeks ago. Since then, the lab has maintained the same pace, open 24 hours a day with three rotating shifts by dozens of scientists and assistants. Due to the high demand for equipment and supplies, the lab repeatedly validated the test using various reagent-chemicals used to perform the tests. There was a lack of reagents, says Pinsky. We didn't want to run out of one particular component of the tests, so there was constant work to make sure that we were able to continue to offer testing. Other Stanford labs also rallied with donations of single-stranded DNA primers and RNA extraction kits. Says Pinsky: There has been a large outpouring of support from all over the campus to deliver a variety of that we were having trouble getting. Responses to antibodiesOnly as testing for the virus became increasingly available, one of the other most pressing questions was how to develop accurate antibody screening. Since numerous infected individuals appear to be asymptomatic-up to 60 percent, according to some estimates-reliable antibody testing is critical to knowing not only which medical staff might have developed immunity and may most securely work with patients, but also how widespread the virus is, what its actual mortality is and how far the United States might be from developing herd immunity. Scott Boyd was fit for the challenge of developing a clinical trial for antibodies. A native of Winnipeg, Manitoba, he is taught in biochemists at the University of Manitoba before becoming a Rhodes Scholar and studying Renaissance literature at the University of Oxford—an experience he remembers as a great chance to really expand my education as I dove into medical academia, which included an MD at Harvard Medical School, a PhD at MIT and a postdoctoral scholarship at Stanford, where he is now an associate professor of pathology and an expert in Like many of their colleagues since the beginning of the pandemic, he and research scientist Katharina Roeltgen spent the day after a 16-hour day in the lab. They aim to develop an antibody test that would offer greater accuracy than many care site testing kits and homes on the market. There's pretty Wild West testing going on right now, says Boyd. Most tests really don't seem to have much documented evidence of how well they work. Although the FDA relaxed the rules governing the sale of these tests to make them quickly available, a lot of money was wasted on shoal products. At the end of March, for example, the British Government purchased 3.5 million tests, which then failed to provide reliable results. Boyd's team delivered the Test on June 6. As it progressed, they were still focused on maintaining standards - going through all the same steps and seeing how each version of the test performs - but doing more experiments every day. It's not that the methodology or approach has changed, he says. It's just that we had to do it faster than would be comfortable usually. Adding to the discomfort, Boyd recalls his unease when he and Roeltgen, during one of their busiest, most exhausting periods, eased into social distancing to have food delivered to the lab. In conjunction with Pinsky and other collaborators, Boyd is now turning his attention to determining whether antibodies provide immunity. Because working directly with COVID-19 is risky, the less dangerous virus will be genetically engineered to express the tip of COVID-19: a prominent surface protein that binds with receptors to human cells for injection of viral genetic into them. You can put that on another virus, says Pinsky. It's called pseudotyping, and then you use it in experiments to see if antibodies from patients block the virus from getting into the cell. Treatment studies As well as research in diagnosis is accelerating, so is efforts to find effective pharmaceutical treatment for patients with COVID-19. Clinical professor of medicine Neera Ahuja, head of hospital medicine and medical director of general hospital medicine, is the lead investigator of the study to treat severe cases of COVID-19 with remdesivir, an antiviral drug first used during the West African Ebola epidemic between 2013 and 2016. Remdesivir works by interrupting the genetic replication of viruses, and although it has shown promise to stop COVID-19 infections in a study sponsored by the drugmaker Gilead Sciences and conducted at Stanford and other universities, more data is needed to show its effect on severely ill patients whose lungs are destroyed by the extreme response of their immune system. The new study, launched March 30 and sponsored by the National Institutes of Health, will enroll more than 1,000 severely ill patients at Stanford and 63 other locations around the world. Time zones don't matter when you're trying to find a drug that affects the world, says Ahuja. What's great, says co-principal investigator and professor of medicine and pediatrics Kari Nadeau, is how quickly the NIH was on its feet and how quickly the FDA was addressing the problem of this crisis. It usually takes six months for experiments to be activated. This test was activated in six days. Illustration: Malte Mueller/Getty Images With the same speed, many Stanford scientists turned from their usual fields of study to focus on COVID-19, with up to 50 researchers at a time on video calls briefing one another about the virus. The COVID crisis has motivated people to collaborate from many different areas, says Nadeau, who directs the Sean N. Parker Center for Allergy and Asthma Research at Stanford and is best known for developing treatments for severe food allergies. While our special areas may not be working normally with each other, the most important thing is that our tools and our approaches are similar. Just as the virus demanded cooperation and flexibility among investigators, it required brisk mobilization and training of various hospital staff-a process that typically takes three months, and that Ahuja and her team achieved in three days so that the process could proceed immediately. Insuspecting infection control measures was paramount. We've been thinking about how to limit exposure to this virus in the face of still needing an interface with the patient, addressing their concerns and monitoring them, says Ahuja. could work with IT to give telemedicine consent, electronic consent, DocuSign and similar things. So it's still just as effective and effective, but also limited exposure to providers and retained [personal protective equipment] if possible. Preprint PreicamentMes among the significant changes in the pace of science that influenced both diagnosis and therapy was an increase in preprint-academic documents published online before I was reviewed. In the short time since the onset of COVID-19 disease, when the world economy creaks and world leaders fear solutions, scientists have already responded with 24,000 documents in order to share information and work at an unprecedented rate. When the dust settles, says Nadeau, there probably will be some documents that contradict each other, but I really believe that as long as science has been done strictly, we need to give people the benefit of the doubt that they did everything they could to get their data there quickly. But we need to be careful to make sure that we don't read too much into a study that was done on several patients, or it was done without checking or was done with substandard tools. A recent New York Times article, Coronavirus Tests Science's Need for Speed Limits, examines the impact of shoal studies in overprinting (one example, prompted a conspiracy theory that the virus was designed by the Chinese government to control the population). And yet overprinting served a key role. Boyd relied on early overprinting from a lab at Mount Sinai Hospital in New York City to develop antibody testing. Of course, we all had to look at the overprint with extra scrutiny, says Boyd, almost as if you were a reviewer of the paper while reading it ourselves. Stories of frantic work, sharing, collaboration and cross-disciplinary efforts are far more numerous than several mentioned here. Consider, for example, how Stephen Quake, '91, MS '91, professor of bioindenology and applied physics, loaded diagnostic equipment into his car at Chan Zuckerberg BioHub, where he is co-president, and drove him to the Pinski lab. Or as David Camarillo, MS'03, PhD '08, associate professor of bioinjihary, shifted his research from concussion prevention to designing fan-needed for severely ill COVID-19 patients—for quick assembly from fewer parts. Taken together, these efforts suggest that, among the mixed legacy of the deadly and devastating virus, the scientific community may be headed for agility, rapid communication and interdisciplinary innovation. In the meantime, as Nadeau points out, none of these labs are still sleeping. Deni Ellis Béchard is a senior writer at Stanford. Write to him on dbechard@stanford.edu on dbechard@stanford.edu