DARTMOUTH RESEARCHERS RAMP UP EFFORTS AGAINST COVID-19

As communities across the country and world struggle to cope with the devastating effects of the COVID-19 pandemic, researchers at Dartmouth's Geisel School of Medicine are collaborating with their scientific and clinical colleagues on a myriad of projects in an effort to enhance understanding of the disease and develop potential life-saving treatments. On March 18, the Laboratory for Clinical Genomics and Advanced Technology at Dartmouth-Hitchcock Medical Center (DHMC), under the direction of **Gregory Tsongalis, PhD,** professor of pathology and laboratory medicine, 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 coronavirus. Early preparation and testing of new protocols for COVID-19 allowed the lab to get up and running quickly when the FDA granted an emergency use authorization to hospitals and academic medical centers. The lab has the surge capacity to process 1,000 samples in 24 hours, has helped the State of New Hampshire reduce its backlog of tests, and is investigating new methods for more rapid testing. (See *Tsongalis Q&A,* pg. 5)

IN A COLLABORATIVE EFFORT INVOLVING

Peter Wright, MD, professor of pediatrics at Geisel, colleagues from biotech firm Adimab and the University of Texas - Austin, **Margaret Ackerman, PhD,** professor of microbiology and immunology at Geisel and professor of engineering at the Thayer School of Engineering, and **Jiwon Lee, PhD,** assistant professor of engineering at Thayer, are studying the breadth of antibody responses developing in patients who have recovered from COVID-19, as well as those who have not had the disease but have been exposed to other types of coronaviruses. The groups are working on profiling and isolating the most effective of these antibodies for use as therapeutics and to inform potential vaccine efforts.

DAVID LEIB, PHD, chair and professor of microbiology and immunology at Geisel and adjunct professor of biology at Dartmouth, and **Joel Lefferts, PhD,** associate professor of pathology and laboratory medicine at Geisel and assistant director of the Laboratory for Clinical Genomics and Advanced Technology, have teamed up to validate and adapt for clinical use a new rapid-method COVID-19 diagnostic test developed by Atila Biosystems. The Atila assay can produce results in less than one hour and received emergency use authorization from the FDA in April. DHMC is expected to be the first medical center to deploy the test. (See *Fast Tracking story,* pg. 6)

JUDY REES, MD, PHD, an associate professor of epidemiology at Geisel, has partnered with colleagues in her department and the University of New Hampshire Survey Center to develop a COVID-19 community survey to identify symptoms over a two-month period in New Hampshire in an effort to track the progress of the outbreak and factors associated with transmission. The on-line study, which includes a brief daily symptom diary and longer survey questionnaires, is being sent to a cohort of nearly 3,400 New Hampshire residents that were randomly selected and have agreed to participate in ongoing statewide research.

PAUL GUYRE, PHD, an active emeritus professor of microbiology and immunology at Geisel and member of the Immunology and Cancer Immunotherapy Research Program at Norris Cotton Cancer Center, and his lab team have received funding from the National Cancer Institute to study the increased prevalence of severe disease in COVID-19 patients over age 60. They are looking at how antibodies acquired from lifetime exposure to other coronaviruses may cross-react with SARS-CoV-2 in a way that actually worsens infection and lung inflammation and have begun to investigate the potential for human plasma to neutralize SARS-CoV-2 infection.

LED BY RESEARCHERS Jonathan Skinner, PhD, and Elliott Fisher, MD, MPH, both professors of The Dartmouth Institute for Health Policy and Clinical Practice (TDI) at Geisel, **Sukdith (Sukie) Punjasthitkul, MS,** infrastructure analyst in the Data Analytic Core (DAC) at TDI, and **Stephanie Tomlin, MS, MPA,** director of the DAC, the Dartmouth Atlas Project is drawing on its legacy of measuring geographic variation in the U.S. to document the geography of the COVID-19 pandemic. The research, which has generated considerable media coverage, includes collaborating with Microsoft Research to document regions with the greatest fraction of vulnerable people, interactive heat mapping to assess the spread and growth of diagnosed cases using Hospital Referral Regions, and real-time incidence and outcomes of hospitalized COVID-19 patients from about 250 hospitals nationwide.

IN A RECENT JAMA PAPER, Glyn Elwyn, MD, PhD, a professor of TDI, and his colleagues at TDI and Harvard Law School, document some of the most significant telehealth regulatory changes in response to COVID-19—including those involving payment, privacy, and licensing. They also summarize the views of key opinion leaders in telehealth, and outline the opportunities and challenges facing the healthcare system as it works to successfully harness the expanded role recently given to telehealth in the U.S.

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