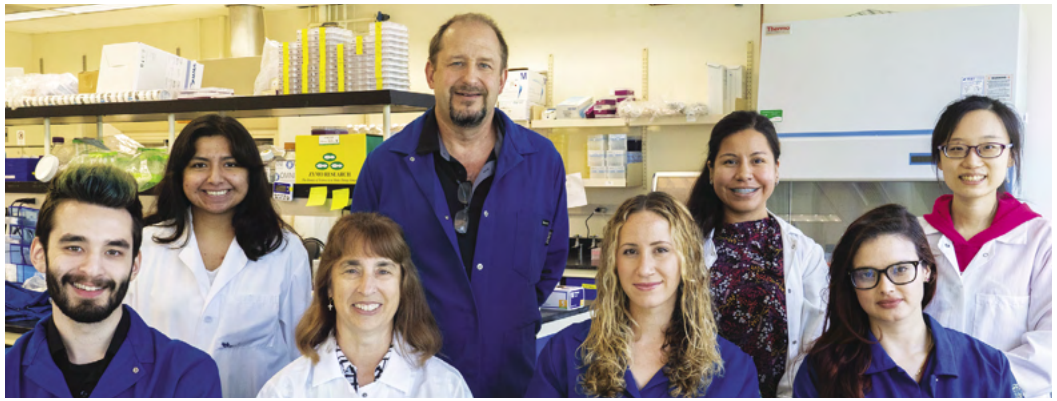
PENETRATING LONG COVID'S BRAIN FOG

Prof. Thomas Lane

While most people with COVID-19 get better within two to three weeks, it has become clear that a number experience lingering symptoms. The condition is known as "post-acute COVID-19 syndrome" or "long COVID," referring to issues that manifest more than four weeks after patients have recovered from their initial diagnosis. UCI researchers are investigating this emerging phenomenon, which can have neurological implications.

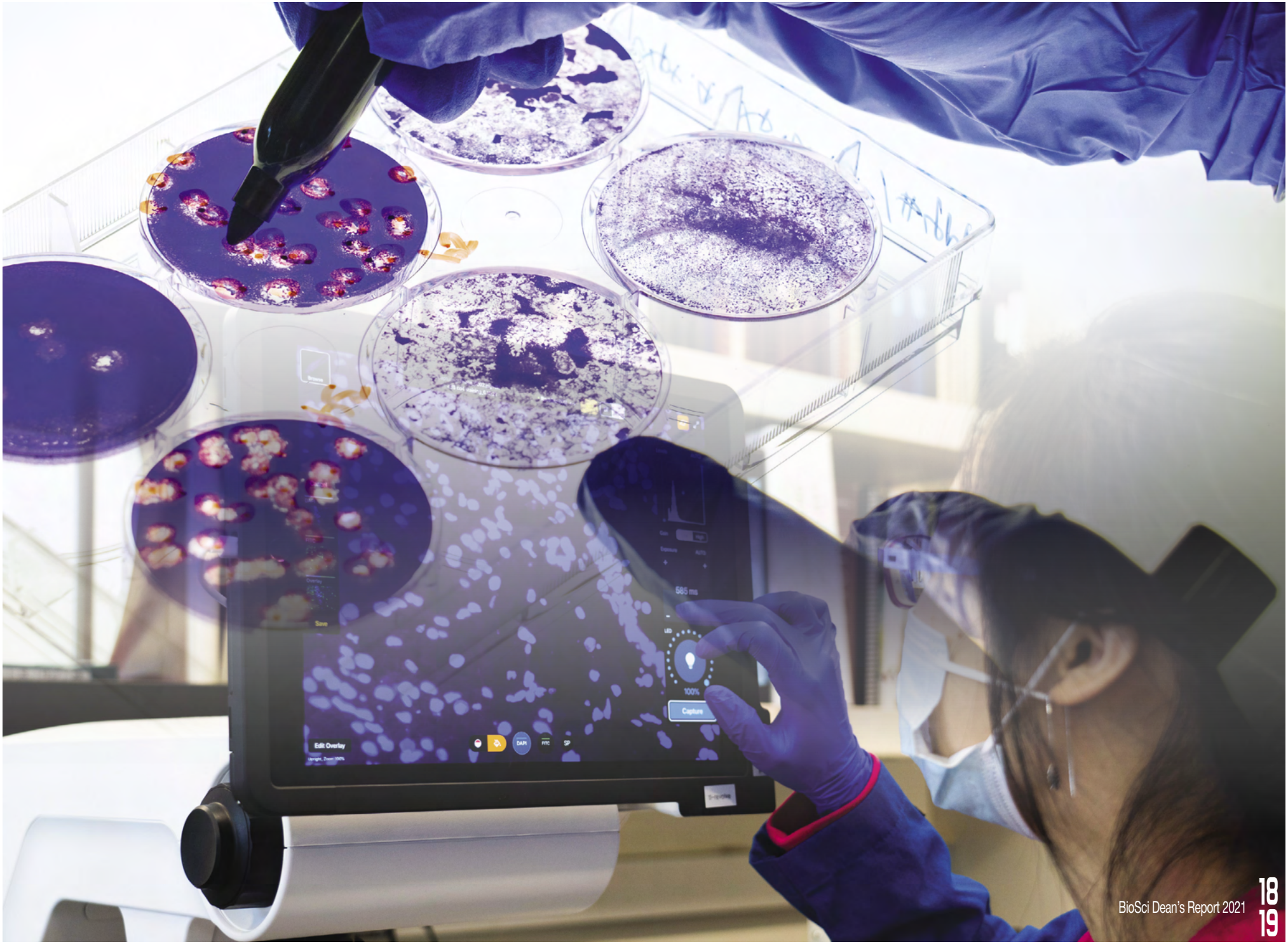
COVID-19, shorthand for coronavirus disease 2019, is caused by severe acute respiratory syndrome coronavirus 2, or SARS-CoV-2. When the virus infects people, it enters cells through a receptor called ACE2, short for angiotensin-converting enzyme 2. This receptor is prevalent throughout the body, which is likely why SARS-CoV-2 can trigger a diverse array of symptoms. Common ones are fever, cough, fatigue, loss of smell, nausea and diarrhea that appear within two to 14 days after infection.

Long COVID also produces various symptoms, and since the start of 2021, clinicians and scientists across the country have ramped up the number of studies conducted on the phenomenon. Initial studies on long COVID suggested that as many as 54% of mild COVID-19 patients have persistent symptoms two to four months following initial recovery. A separate survey of 100 patients found that 85% of those not hospitalized reported long-term neurologic effects. These symptoms include depression, anxiety and "brain fog," a term many use to describe sluggish thinking and trouble concentrating.



Faculty including Neurobiology and Behavior Chancellor's Professor Thomas Lane are working to uncover what causes this phenomenon. As a first step, he is teaming with other UCI faculty to develop mouse models of the disease. His lab has worked with mice for more than 20 years to study the effects of coronaviruses on neurological health, experience that is invaluable in tackling this issue.

The Lane lab's COVID-19 experiments are in the early stages, but preliminary data show the SARS-CoV-2 virus is capable of replicating in human neurons and possibly other cells of the central nervous system. Their research will determine how long the virus can persist in the brain and how the immune system responds to the infection.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