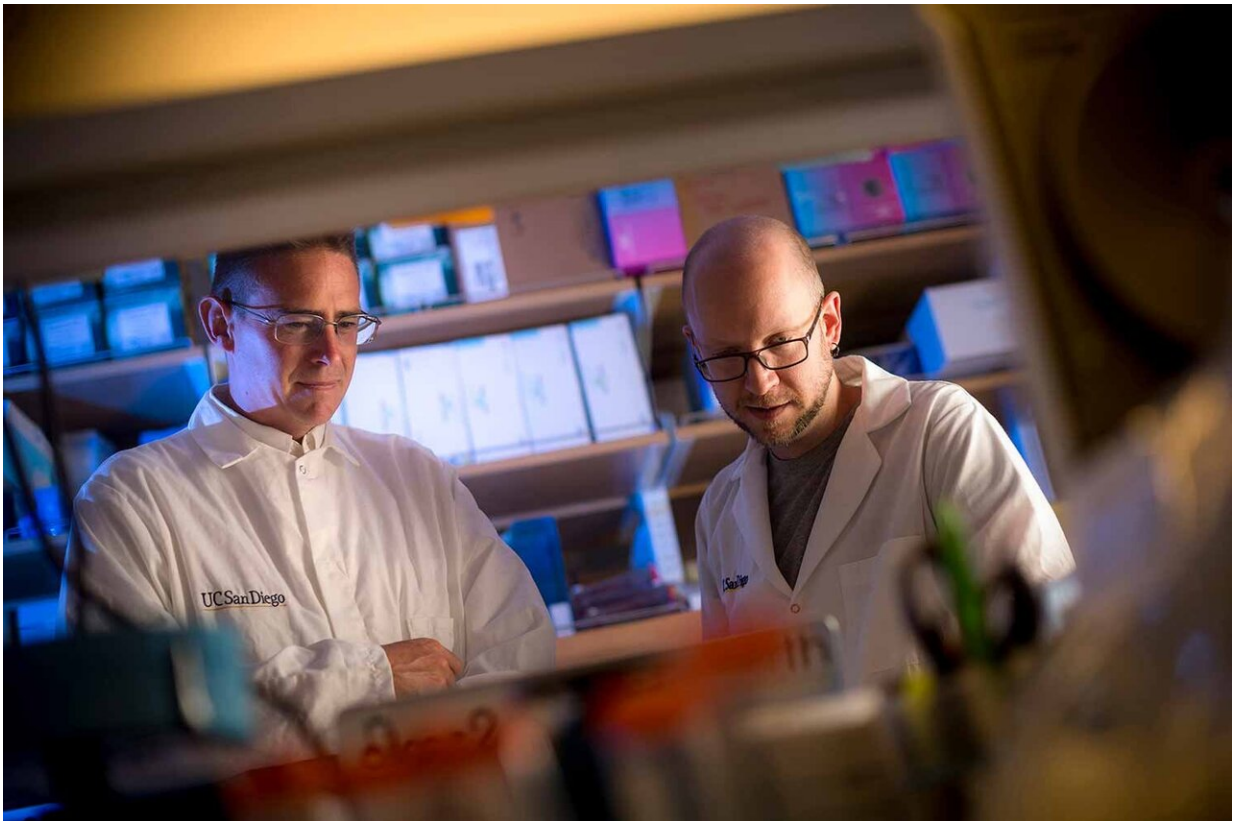


Call for citizen scientists to contribute to COVID-19 studies

April 10 2020



Rob Knight, director of the Center for Microbiome Innovation, and Daniel McDonald, scientific director of The Microsetta Initiative. Credit: Erik Jepsen/UC San Diego

[The Microsetta Initiative](#), a crowdsourced research effort based at the

University of California San Diego School of Medicine, has expanded its capabilities to now allow citizen-scientists around the world to help collect crucial information about SARS-CoV-2, the novel coronavirus causing a COVID-19 pandemic.

"We are now positioned to collect data that will help drive [epidemiological studies](#) of where the virus is and isn't, and help researchers determine who is at greatest risk, who is already immune, how the virus is transmitted and how it spreads through a population," said Rob Knight, professor and director of the Center for Microbiome Innovation and co-founder of The Microsetta Initiative, which is run by his research lab at UC San Diego School of Medicine under Scientific Director Daniel McDonald.

NOTE: The Microsetta Initiative and its subsidiaries, including the American Gut Project, are research enterprises, and do not provide clinical diagnostic information or medical advice to participants.

The Microsetta Initiative's original goal is to improve our understanding of human microbiomes—which types of bacteria live where in our bodies, how many of each and how they are influenced by diet, lifestyle and disease. To do this, citizen-scientists around the world contribute \$99 to receive a kit to collect fecal, nasal, oral or skin swabs and instructions to mail them back.



Assembling new sample collection kits for citizen scientists to contribute to studies of SARS-CoV-2. Pictured at center is Daniel McDonald, scientific director of The Microsetta Initiative at UC San Diego School of Medicine. Credit: University of California - San Diego

Once Knight and McDonald's team processes the sample, participants receive a report that details what is living in their guts (based on a fecal specimen) or other body sites they sampled. The anonymized data contributed by participants drive hundreds of research studies around the world on the many ways bacteria and other microbes are influenced by our environments, health, diet and habits, and how those microbes in turn influence our health.

In order to now collect valuable research data on SARS-CoV-2, the team has tweaked the Microsetta kits in two key ways:

(1) Preserving viral RNA: Instead of including dry swabs appropriate for collecting microbial DNA, the kits mailed out to participants will now

include 95 percent ethanol, which preserves viral RNA, the genetic material used by SARS-CoV-2. (Live viruses cannot survive in ethanol.) This information will help researchers better understand how the virus spreads and the environmental and lifestyle factors that might increase a person's risk for contracting and transmitting the virus.

Microsetta's ability to pivot to RNA collection was driven by collaboration with several other UC San Diego School of Medicine faculty members, including Karsten Zengler, Jack Gilbert, Gene Yeo, and Dr. Victor Nizet. Rapid collaboration among labs, departments and neighboring institutions has been enabled by a new group and Slack channel created by Yeo called San Diego COVID Research Enterprise Network (SCREEN), which now includes more than 800 San Diego researchers.



A sample Microsetta Initiative kit. Credit: University of California - San Diego

(2) Collecting [blood samples](#): The kits will also include lancets—small devices that allow for easy blood sample collection by finger-stick, similar to at-home glucose tests used routinely by persons with diabetes. Only a couple of drops of blood will be drawn. The team will store the donated blood samples for future studies. For example, the samples may be used to determine who has already been exposed to SARS-CoV-2 and has developed immunity in the form of antibodies. Many research groups around the world are currently developing ways to detect these antibodies (serological tests).

When the team realized they would need a lot of lancets in order to be able to collect blood for serological studies, they turned to Anne O'Donnell, UC San Diego's senior executive director for Corporate Relations, for help. She reached out to her many contacts in the San Diego and global biopharma industry. Within hours, BD (Becton, Dickinson and Company), a global medical technology company with a large presence in San Diego, offered 20,000 lancets.

Ranjeet Banerjee, worldwide president of Medication Management Solutions at BD, said the lancet offer was inspired by BD's commitment to public/private partnership that address critical community needs, both scientific and global.

"Adding lancets to collect blood samples was an idea we had late in the afternoon of Saturday, March 21," said Mohit Jain, an associate professor of pharmacology at UC San Diego School of Medicine, who is working with Knight and team. "By the very next afternoon, BD was delivering caseloads to my lab. The collaboration, speed and efficiency of everyone involved, the willingness to cut through red tape, is

unprecedented and moving."

Thanks to procurement and logistical support from Netherlands-based DaklaPack and FedEx, the Microsetta team now has kits with ethanol and lancets available for order. Any unused lancets will be donated to UC San Diego Health or other local health providers, if needed to support patient care.

More information: To participate, go to microsetta.ucsd.edu

Provided by University of California - San Diego

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