

BIO5 RESEARCH TEAMS

TACKLING THE COVID-19 PANDEMIC



Margaret Kimball illustrations



Note: The researchers listed here may have multiple professional titles and academic credentials at the University of Arizona. For additional information about titles, visit Arizona.edu.

EVOLUTION OF THE VIRUS

This team will investigate the evolution of the novel coronavirus and how the evolutionary adaptation of a key viral structure may have enabled it to cause rapid worldwide disease.

Samuel Campos, associate professor, College of Medicine – Tucson
 Scott Boitano, professor, College of Medicine – Tucson
 Ken Knox, professor, College of Medicine – Tucson

IMAGE-BASED SCREENING

This team will use image-based screening techniques to identify compounds that may interfere with the ability of the virus to infect and cause long-lasting infections.

Curtis Thorne, assistant professor, College of Medicine – Tucson
 Koenraad Van Doorslaer, assistant professor, College of Agriculture and Life Sciences

PREVENTING INFECTION

This team will investigate the use of copper compounds in preventing infection.

Koenraad Van Doorslaer, assistant professor, College of Agriculture and Life Sciences
 Michael Johnson, assistant professor, College of Medicine – Tucson

POTENTIAL DRUG TREATMENTS

Two anti-malarial drugs, chloroquine and hydroxychloroquine, are currently being investigated as COVID-19 treatments, though their utility and safety is uncertain. This team will aim to improve delivery, enhance efficacy and minimize toxicity of these drugs.

Jianqin Lu, assistant professor, College of Pharmacy
 Xinxin Ding, professor, College of Pharmacy

IMMUNE SYSTEM ACTIVATION

This team will investigate whether immune system activation can treat COVID-19 patients.

Jianqin Lu, assistant professor, College of Pharmacy
 Yin Chen, associate professor, College of Pharmacy

NOVEL INHIBITORS

This team will test novel inhibitors of the viral life cycle in treating existing infections.

Wei Wang, professor, College of Pharmacy
 Steffan Nawrocki, associate professor, College of Medicine – Tucson
 Jennifer Carew, associate professor, College of Medicine – Tucson

COVID-19 DATABASE

This team will use patient data from Banner – University Medical Center Tucson and area family medicine clinics to create a local COVID-19 database.

Karen Lutrick, assistant professor, College of Medicine – Tucson
 Dean Billheimer, professor, Mel and Enid Zuckerman College of Public Health
 Brian Erstad, professor, College of Pharmacy

PATIENT INTERVIEWS

This team will gather patient interviews and create a database cataloging risk factors and patient symptoms that can be used by all Arizona investigators addressing COVID-19.

Kristen Pogreba-Brown, assistant professor, Mel and Enid Zuckerman College of Public Health
 Kate Ellingson, assistant professor, Mel and Enid Zuckerman College of Public Health
 Elizabeth Jacobs, professor, Mel and Enid Zuckerman College of Public Health
 Kacey Ernst, associate professor, Mel and Enid Zuckerman College of Public Health
 Pamela Garcia-Filion, associate research professor, College of Medicine – Phoenix

THE GENETICS OF VIRUSES

This team will lead an epidemiological study to understand the genetics of viruses that have infected southern Arizona patients. Through these efforts, researchers will seek to understand the relationship of the Arizona outbreak to the national epidemic.

Michael Worobey, professor, College of Science
 David Baltrus, associate professor, College of Agriculture and Life Sciences

DISEASE CHARACTERISTICS

This team will compile characteristics of hospitalized COVID-19 patients in Arizona.

Vignesh Subbian, assistant professor, College of Engineering
 Jarrod Mosier, associate professor, College of Medicine – Tucson

PREEXISTING HEALTH CONDITIONS

Researchers will address public health concerns by exploring relationships between COVID-19, preexisting health conditions and the environment. Older adults and those with existing critical health conditions seem to be at greater risk for COVID-19. This team will work to find out why.

Janko Nikolich-Zugich, professor, College of Medicine – Tucson
 Deeptha Bhattacharya, associate professor, College of Medicine – Tucson
 Craig Weinkauff, assistant professor, College of Medicine – Tucson

AIRBORNE VIRUS

The virus has been shown to be present in the feces of infected individuals, and these live viruses can become airborne in wastewater treatment plants. This team, working with the Water and Energy Sustainable Technology Center, will study the risk of the airborne virus to facility workers' health.

Luisa Ikner, assistant research professor, College of Science
 Walter Betancourt, assistant research professor, College of Science
 Kelly Reynolds, professor, Mel and Enid Zuckerman College of Public Health
 Ian Pepper, professor, College of Science
 Jeff Prevatt, deputy director of the Pima County Regional Wastewater Reclamation Department

MENTAL HEALTH AND SOCIAL ISOLATION

The pandemic affects more than just physical health; social isolation can increase anxiety and negatively impact mental health. This team will address the behavioral health consequences of the pandemic through a guided imagery app.

Judith Gordon, professor, College of Nursing
 Chris Gniady, associate professor, College of Science

