

# *An Innovative Response*

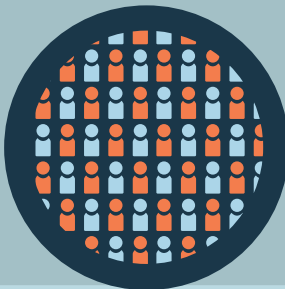
## Inside Cal Poly's Saliva-Based COVID Testing Program

Design by: Connor Mariott

Led by the College of Science and Mathematics, faculty, staff and students from across campus created a new lab to run in-house, saliva-based and wastewater COVID-19 surveillance tests. The lab helped the university keep the Cal Poly community safe by more effectively catching infections before they spread — all while providing students a valuable Learn by Doing experience.

## The Team

From students to faculty to technical, health, facilities and maintenance staff, the Cal Poly community came together to make the lab work.

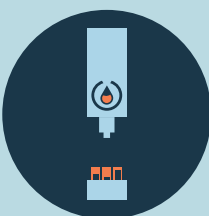


**25 STUDENTS**  
FROM  
**3 COLLEGES**

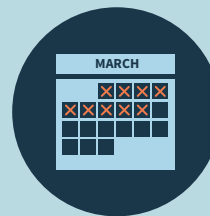


**FACULTY  
AND STAFF  
LEADERSHIP &  
SUPPORT**

FROM DEPARTMENTS  
ALL ACROSS CAMPUS



**8 OPENTRONS  
ROBOTS**  
TO MOVE LIQUID SAMPLES



**3 MONTHS**  
FROM GREEN LIGHT  
TO FIRST TESTS

*"It's cool to actually  
apply what you did in  
a lab class to real life."*

VINAY GOPAN,  
Microbiology Student

# Saliva Testing

Thanks to a quick turnaround time and high accuracy, the university could test all students coming to campus twice a week.

93%

97%

3

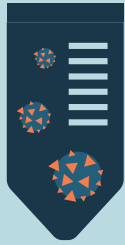
VIRUS PARTICLES/μL



SENSITIVITY  
RATE



SPECIFICITY  
RATE



LIMIT OF  
DETECTION

## Defining Terms

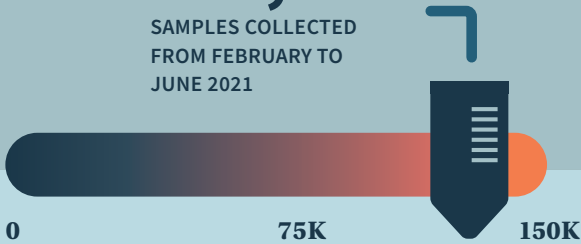
Sensitivity rate is in regard to accurately determining if someone is positive for COVID-19, while specificity rate is in regard to accurately determining if someone does not have COVID-19. Limit of detection is the lowest amount of pathogen that can be differentiated in a clinical sample.



**4,000**  
TESTS IN 8 HOURS

**149,592**

SAMPLES COLLECTED  
FROM FEBRUARY TO  
JUNE 2021



*"I'm really proud of our protocol — it is unique ... We are able to do it much more efficiently and much faster than other institutions."*

JEAN DAVIDSON  
Biology Professor

# Wastewater Testing

Wastewater testing monitored for potential outbreaks before they spread and allowed for more targeted saliva testing if necessary.



CAL POLY PULLED UP TO

**10 GALLONS**

OF WASTEWATER OUT OF FIVE MANHOLES TWICE A WEEK.

UP TO

**55 MILLION**

VIRUSES PER LITER WERE DETECTED