RESEARCH TOWN HALL

Sandra A. Brown
Vice Chancellor for Research
February 2, 2021
Welcome & Campus Update: Chancellor Pradeep Khosla

Vaccination Update: Patty Maysent, CEO, UC San Diego Health

Pandemic Update & Variant Strains: Dr. Natasha Martin

Campus Status: Dr. Angela Scioscia

Wastewater Testing: Dr. Rob Knight

Contact Tracing: Dean Cheryl Anderson

Research Updates: VC Sandra A. Brown

Q&A
Chancellor
Pradeep Khosla
Vaccine Update

UC San Diego Health CEO Patty Maysent
Vaccine Phases From CDPH

<table>
<thead>
<tr>
<th>Phase 1A</th>
<th>Phase 1B</th>
<th>Phase 1C</th>
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</thead>
<tbody>
<tr>
<td><strong>About 3 million people</strong></td>
<td><strong>1B Tier One:</strong></td>
<td><strong>Individuals 50-64 years of age</strong></td>
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<tr>
<td>• Healthcare workers</td>
<td>• Individuals 65 and older</td>
<td>• People 16-49 years of age who have an underlying health condition or disability which increases their risk of severe COVID-19</td>
</tr>
<tr>
<td>• Long-term care residents</td>
<td>• Those at risk of exposure at work in the following sectors:</td>
<td>• Those at risk of exposure at work in the following sectors:</td>
</tr>
<tr>
<td></td>
<td>o Education and childcare</td>
<td>o Water and wastewater</td>
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<tr>
<td></td>
<td>o Emergency services</td>
<td>o Defense</td>
</tr>
<tr>
<td></td>
<td>o Food and agriculture</td>
<td>o Energy</td>
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<td></td>
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<td>o Chemical and hazardous materials</td>
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<td></td>
<td></td>
<td>o Communications and IT</td>
</tr>
<tr>
<td></td>
<td></td>
<td>o Financial services</td>
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<td></td>
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<td>o Government operations / community-based essential functions</td>
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</tbody>
</table>
| **Approved Phase 1A for research – patient facing clinical researchers, CLIA labs, researchers working with live SARS-CoV-2 virus, veterinarian, animal husbandry**

County of San Diego has only approved Phase 1A And Seniors 65+
Vaccine Distribution

• We currently have approximately **2,925 doses for first doses** and 3,000 for second doses **coming this week.** (Petco vaccine distribution is from a separate tranche from the county)

• Goal is to complete second doses to **HCW** early this month

• UCSD Health is vaccinating **patients** over 65 following a risk stratification methodology

• We are now approved to vaccinate campus employees 65+ at a ratio of 2:1 (patients : employees)

• Vaccine supply continues to be constrained and inconsistent – **but it is coming!**

  • 1st – **65+ employees** (either on or off campus) 1300+
  • 2nd* – **Onsite campus employees** - Emergency Services, child care, education K-12, food & agriculture
  • 3rd* – **Onsite campus employees** – Transportation & Logistics, Industrial, commercial, residential and sheltering facilities and services, critical manufacturing
  • 4th* - **All other onsite campus employees**
  • 5th* - All employees whether on or off campus and students
Vaccine Distribution for Campus Employees — RIMAC

• Scheduled to open Monday, February 8
• Starting with those 65+
• List of those eligible will come from campus; Health will send out invites to schedule vaccination
• Still working through a few of the logistics
Pandemic Update

Dr. Natasha Martin
Cumulative Cases
Global: 103,377,424
US: 26,306,817
California: 3,333,324
San Diego Cty: 239,142

Cumulative Deaths
Global: 2,236,454
US: 443,100
California: 41,164
San Diego: 2,600
Novel Circulating “Spike Deletion” Mutant

- Increased binding affinity to ACE2
- May affect antibody binding
- Increases spike mediated infectivity by 2X
MODELING POTENTIAL IMPACT OF THE B.1.1.7 EXPANSION ON CASES IN SAN DIEGO

**Non-B.1.1.7 Strain Cases**

**B.1.1.7 Variant Cases**

**No vaccination, no reopening**

**Vaccination program and no reopening**

**Vaccination program + reopening (contact as in Nov)**

$R_t=0.9$ on Jan 24
SARS-CoV-2 501Y.V2 escapes neutralization by South African COVID-19 donor plasma

Constantinos Kurt Wibmer, Frances Ayres, Tandile Hermanus, Mashudu Madzivhandila, Prudence Kgagudi, Bronwen E. Lambson, Marion Vermeulen, Karin van den Berg, Theresa Rossouw, Michael Boswell, Veronica Ueckermann, Susan Meiring, Anne von Gottberg, Cheryl Cohen, Lynn Morris, Jinal N. Bhiman, Penny L. Moore

bioRxiv preprint doi: https://doi.org/10.1101/2021.01.18.427166
Clinical Implications of Variants of Concern

- Initial variants (B1.1.7, aka “British” spike deletion mutant)
  - SARS CoV-2 is evolving to maximize its transmissibility within the human population
  - More rapidly replicating variants are associated with mortality rates of up to 30% greater than currently circulating strains
- New variants in Brazil and South Africa add immune evasion to the evolutionary strategy
  - These variants reduce the impact of both monoclonal antibodies and currently available vaccines
  - The raise the risk of earlier reinfection with more severe outcomes
Campus Update: Viral Detection and Followup

Dr. Angela Scioscia, Dr. Rob Knight, and Dean Cheryl Anderson
• Early detection
  • DAILY SCREENING!!
  • Access to symptomatic testing
    • Same day
    • Testing at multiple sites throughout San Diego and Price Center on campus (extended hours Tuesday)
    • Results 24-36 hrs
  • Asymptomatic testing
    • Weekly
    • Multiple sites including Price Center and Athena
    • Self-administered testing – vending machines!!
  • Actively looking for virus in wastewater samples
Vending Machines

- Self administered testing
- Kit includes instructions, swab and testing vial
  - Sample is identified through a barcode captured through the UCSD app with your AD logon
  - Results return 24-36 hours later
  - Eleven locations on campus with last guaranteed pick up at 2 pm
  - Expanding with another 9 locations later in January
- One kit per student or employee per week unless there is an indication – wastewater signal, exposure or new mild symptoms
14-day rolling percentage of positive cases among tests by date reported

- Students 0.3% positivity
- Employees 0.4% positivity

Total cases last 7 Days

12 students residing on campus
19 students residing off campus in SD area
11 campus employees

Total number of student tests since March 1st, 2020: 150,235
Total number of campus employee tests since March 1st, 2020: 43,363

Average test result time
Includes student and campus employee tests
16.6 hours 7 Day Average
Cumulative Cases since Winter 2021 instructional term start (January 4, 2021)

Students diagnosed at UC San Diego: 352
- 145 living on campus
- 207 living off campus in SD area

Additional students reported to UC San Diego: 18
- 4 living on campus
- 14 living off campus in SD area

Campus employees diagnosed at UC San Diego: 98
- 318 total since March 1, 2020

Additional campus employees reported to UC San Diego: 12
- 52 total since October 1, 2020

Why did this number change?

882 total since March 1, 2020
50 total since October 1, 2020
Autosamplers on UCSD campus – Dr. Rob Knight

Image courtesy: Erik Jepsen, UCSD
**Life of a sewage sample**

Magnetic bead based viral concentration  
Input: 10 ml of raw sewage  
(no pre-filter step)

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**Viral RNA concentration and isolation**

KingFisher Flex viral RNA concentration  
~1h for 48 samples (hands free)

KingFisher Flex viral RNA extraction  
~45 min for 96 samples  
(hands free)

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**SARS-CoV-2 RT-qPCR**

Plate set-up on EpMotion  
~30 minutes  
(96 samples)

384-well RT-qPCR  
1h 40min

3 SARS-CoV targets + Internal standard for wastewater

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https://www.protocols.io/view/automated-high-throughput-viral-concentration-from-bptemnje
UC San Diego Buildings

Potential Source of COVID-19 wastewater signal?

- Yes
- No

Building Monitoring Status

Monitored Status

- Currently Monitored
- Not Currently Monitored

Filter for possible sources of COVID-19 wastewater signal

Filter for currently monitored buildings

Buildings: Revelle Apartments - Keeling 3

<table>
<thead>
<tr>
<th>Name</th>
<th>Currently Monitored?</th>
<th>Potential Source of COVID-19 wastewater signal</th>
</tr>
</thead>
<tbody>
<tr>
<td>Revelle Apartments - Keeling 3</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Revelle Residence Hall - M...</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Residence Hall - G...</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Residence Hall - A...</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Apartments - Keeling 3</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Residence Hall - D...</td>
<td>No</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Residence Hall - B...</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Residence Hall - C...</td>
<td>No</td>
<td>Yes</td>
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<tr>
<td>Revelle Apartments - Keeling 3</td>
<td>Yes</td>
<td>Yes</td>
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<tr>
<td>Revelle Residence Hall - A...</td>
<td>Yes</td>
<td>Yes</td>
</tr>
<tr>
<td>Revelle Residence Hall - Bl...</td>
<td>Yes</td>
<td>Yes</td>
</tr>
</tbody>
</table>
WASTEWATER FAQ

• If my building is associated with a positive wastewater signal, does it mean there is definitely someone infected inside? Because multiple buildings can feed wastewater into a single sampler, a positive signal in a building does not necessarily mean there is someone infected inside your building. Further, in some cases individuals who have recovered from their SARS-CoV-2 infection can continue to shed virus into the wastewater for several weeks after they have recovered. These individuals who are no longer infectious can, in some circumstances, contribute to a positive wastewater signal.

• If there is a positive signal in my building what should I do? If you used the restroom in a building associated with a positive wastewater signal on that day, out of an abundance of caution, you should get tested promptly. Additionally, we encourage you to remain vigilant about masking and social distancing. **You do not need to quarantine or isolate until you receive your results.**

• Will you tell us if you find an infected individual in my building? Information on the location of detected cases at UC San Diego can be found on the [COVID-19 Daily Dashboard](https://returntolearn.ucsd.edu/about/faqs/index.html#wastewater-faq).

The answers to these and more questions can be found on the Wastewater FAQ website:

[https://returntolearn.ucsd.edu/about/faqs/index.html#wastewater-faq](https://returntolearn.ucsd.edu/about/faqs/index.html#wastewater-faq)
Early Detection and Interruption of Transmission of SARS-CoV-2

Interview + video instructions
Symptoms review
Testing needs
Notice from SD Health Dept
Follow up over 14 days

24-hours

Identify close contacts:
(within 6 feet of an infected person for a cumulative total of 15 minutes or more over a 24-hour period)

Notice from SD Health Dept
Follow up over 14 days
Research Update

Vice Chancellor Sandra A. Brown
### NSF National Higher Education Research & Development Rankings

<table>
<thead>
<tr>
<th>Institution</th>
<th>Rank</th>
<th>All R&amp;D expenditures</th>
</tr>
</thead>
<tbody>
<tr>
<td>All institutions</td>
<td>-</td>
<td>83,496,348</td>
</tr>
<tr>
<td>Johns Hopkins U.(^a)</td>
<td>1</td>
<td>2,917,436</td>
</tr>
<tr>
<td>U. Michigan, Ann Arbor</td>
<td>2</td>
<td>1,675,805</td>
</tr>
<tr>
<td>U. California, San Francisco</td>
<td>3</td>
<td>1,595,098</td>
</tr>
<tr>
<td>U. Pennsylvania</td>
<td>4</td>
<td>1,506,285</td>
</tr>
<tr>
<td>U. Washington, Seattle</td>
<td>5</td>
<td>1,425,601</td>
</tr>
<tr>
<td><strong>U. California, San Diego</strong></td>
<td>6</td>
<td><strong>1,353,763</strong></td>
</tr>
<tr>
<td>U. California, Los Angeles</td>
<td>7</td>
<td>1,306,376</td>
</tr>
<tr>
<td>U. Wisconsin-Madison</td>
<td>8</td>
<td>1,297,331</td>
</tr>
<tr>
<td>Harvard U.</td>
<td>9</td>
<td>1,239,736</td>
</tr>
<tr>
<td>Duke U.</td>
<td>10</td>
<td>1,226,517</td>
</tr>
</tbody>
</table>

\(^a\) Franchise

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Geophysical Sciences
Psychology
Life Sciences
Physical Sciences
Engineering
Computer Sciences
Current on-site research, 1/25/21

6300 Approved On-site Personnel

- Undergraduate, 657, 10%
- Graduate Student, 1848, 29%
- Postdoctoral Scholar, 896, 14%
- PI, 900, 14%
- Other Academic, 546, 9%
- Non-Academic Staff, 1425, 22%
- Other, 121, 2%

Buildings by Approved Personnel

- ACTRI
- BRF II
- SME Bldg
- Pacific Hall
- Atkinson Consortium
- Leichtag
- Jacobs Hall
- Biomedical Sciences
- Moores Cancer Center
- Urey Hall
- Powell-Focht
- Hubbs
- Skaggs Pharm
- Bonner
- CMM East
- Engineering II
- Biology Building

50 100 150 200 250 300 350 400 450

50 100 150 200 250 300 350 400 450 500 550 600 650 700 750 800 850 900 950 1000

UC San Diego
Research Affairs
Planning for the Future

Density of on-site activity is dependent on County PH and RtL.

Work from home if possible + get vaccinated when available

• PIs should assess essential needs now
  • Plan for addressing interruptions (e.g., campus outbreak)

• Plan for advance to next Phase (if situation improves)
  • Ensure those needing access are “yellow phase” on Ramp Up plan

Compliance with safety and personnel density requirements is critical even as vaccinations progress

Research Continuity Task Force planning for scale up
UC San Diego Research Noncompliance Policy

1\textsuperscript{st} instance:
- warning to individuals
- notification to supervisor and Dept Chair
- EHS assessment of need for facility cleaning (1-2 days)

2\textsuperscript{nd} instance:
- notification of supervisor and Chair
- notification of Dean (or equivalent)
- potential closure of facility for up to 14 days to ensure no viral transmission among facility personnel

3\textsuperscript{rd} instance:
- Potential closure for up to 30 days
- Follow standard progressive engagement for faculty, staff, or students
Spring Break Experience
To encourage students not to travel during Spring Break, VCSA Alysson Satterludn’s team working to plan Spring Break Programs

- Academic Enrichment Track
- Adventure Track
- Career/Internship Track
- Health & Well-being Track
- Leadership Track
- Performances and Art Track
- Research Track
- Service Track
Spring Break Research Opportunities

While maintaining safety, if possible, enable undergraduates to experience your research:

• **Introductions and Tours** of programs, projects, or facilities
• **Demonstrations/trainings of procedures or instrumentation** (could be recommended prerequisite for upcoming course or placement)
• **Shadowing postdocs or grad students** for those planning to do a 199, volunteer in lab after pandemic, etc.
• **Engagement in project activities** (ongoing, or short-term projects set up for this period)
• **Announce on REAL:** [https://real.ucsd.edu/](https://real.ucsd.edu/)
Proposal Submission Timelines (14/5/2)

- Research activity continues to grow
  - Proposal increased 38% over last 4 years
  - Award amount has increased 22%

- Research is increasingly regulated: risks of noncompliance = rejected proposal, fines and negative headlines

- Proposal Submission Timelines (14/5/2) was launched to ensure completion of new requirements
  - 14 days = notify depart/unit admin
  - 5 days = admin file to CG office – DAY Before project body

30 departments have improved timeliness of submissions since July!

20 departments have 50% or better rates of timely submission
Q&A

On the call to answer questions today:

**Continuity of Research Task Force Chairs:** Miroslav Krstic and Jim McKerrow
**Campus Status, Epidemiology:** Dr. Angela Scioscia, Dean Cheryl Anderson
**Variants and Pandemic Trends:** Dr. Natasha Martin
**Vaccines:** Dr. Francesca Torriani
**International Students and Scholars:** Roark Miller, Dulce Dorado
**Graduate School:** Dean James Antony

**EH&S:** Lance Scott
**ESR/Oracle:** Deston Halvorson, Wella Garcia
**Contracts and Grants:** Ross Dammann
**Human Resources:** Terri Winbush

**IRB/Human Subjects Research:** Kip Kantelo, Eric Mah
**Postdoctoral & Research Scholar Affairs:** Jennifer Bourque
**Research Compliance & Integrity:** Angie McMahl
**Research Ramp Up Platform:** Faith Hawkins, Ayla Nejad