October 10, 2019

Virtual Research Town Hall

Current state of research, strategies for ramping up

May 12, 2020 at 2pm

UC SANTA BARBARA
Office of Research

Welcome

ANDREA STITH, Research Development

Introduction of speakers, agenda review, Q&A

Town Hall Overview

- A reminder of available research services and information. We anticipate new federal guidance and funding opportunities in the coming months.
- An articulation of plans and procedures designed to keep our research community safe—a shared responsibility.
- An explanation of the emerging framework for the safe ramp up of campus research—when allowed.

Agenda

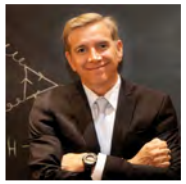
2:00 Welcome and Introduction of Speakers

2:05 Cora Diaz, Sponsored Projects

2:10 Barbara Walker, Research Development

2:15 Kirsten Deshler, Government Relations

2:20 Carolina Arias, Molecular Cellular and Developmental Biology



2:35 Joseph Incandela, Vice Chancellor for Research

3:00 Q&A

3:30 Town Hall Closes

Live Q&A

- Please use the chat function to alert us of any technical difficulties
- Attendees will be able to submit questions, via the Q&A feature throughout the presentation.
- If you would like to direct the question to a specific speaker, please include their name in your question.
- Questions will be visible to all attendees.
- You may "up-vote" questions that you would like to see answered.
- If we cannot answer all questions during the live session we will follow up afterwards via the Research Town Hall website (research.ucsb.edu/research-town-hall).
- Follow-up questions maybe submitted via the Research Town Hall website.

COVID-19 Information for Proposals and Awards

CORA DIAZ, Director, Sponsored Projects

SPO

- Sponsored Projects Office (SPO) is a unit within OR and has a staff of 13 (Team = Officer/Analyst assigned to set of Departments & 1 Outgoing Subaward Officer)
- SPO has delegated authority from UCOP to submit proposals and accept awards on behalf of University of California (aka Authorized Official)
- Review Proposals, Negotiate, and Execute awards that are to be funded by external sponsors for research, training, and public service.
- Assist Faculty and Professional Researchers by primarily working with Contract and Grant department Liaisons on your behalf.

Federal Grant Flexibility

- The Office of Management and Budget (OMB), which serves the President to help him meet his policy, budget and regulatory objectives, issued several important memos to the federal agencies. The guidance in OMB memorandum M-20-17 (March 19, 2020) sets the stage for temporary administrative relief to recipients and applicants of federal financial assistance (grants and cooperative agreements), during the Novel Coronavirus (COVID-19).

- Each federal agency has to implement the memos in accordance with their own mission. Interpretations may vary from agency to agency. For the most up-to-date information about the four main federal agencies that fund research at UCSB (NSF, NIH, DOE, and DoD), please visit our COVID-19 Guidance for Proposals and Awards website: https://www.research.ucsb.edu/covid-19-guidance-proposals-and-awards

Federal Grant Flexibility in Memo M-20-17

The following is a brief list of the types of flexibilities Memo M-20-17 **may allow**, depending on the specific federal agency:

- COVID-19-related expenses
- Flexibility with application deadlines
- No-cost Extensions for delays related to COVID-19
- Extension of reporting deadlines

Resources

We urge you to to visit BFS website at: https://www.bfs.ucsb.edu/administration/bfs-covid-19-status-updates "Under Extramural funds" for addtional resources and updates.

Visit the OR website at https://www.research.ucsb.edu/covid-19-guidance-proposals-and-awards. Information is available for NIH, NSF, DoE, DoD, and other funding agencies.

Sponsored Projects Office during COVID-19

The Sponsored Projects Office is working remotely and it's business as usual.

Please continue to submit proposals. We urge you to also contact the Research Development team to locate additional funding opportunities and help to develop proposals.

*Reminder when working with Research Development team – You still need to work with your Department Liaison and Sponsored Projects.

Continuity of Research

BARBARA WALKER, Director of Research Development

Strategies, resources, and opportunities for maintaining group engagement and momentum

A Call to Action! - Remaining engaged in proposal writing

- **New Funding Streams**
  - COVID-19 related opportunities
    - https://www.research.ucsb.edu/research-development/resources
    - supplements
    - new grants
    - seed grants
    - white papers
    - use of facilities
  - RAPID review opportunities have faster turnaround and less peer review
    - NSF
    - USDA
    - NIH Supplements
  - Anticipate new stimulus funds to federal agencies in the near future
- **Current Projects**
  - Communicate now with current funders
    - supplements may be available, even if not advertised

Research Development Can Help

https://www.research.ucsb.edu/research-development

- Proposal Review
- Proposal Resources
- Funding Search Tools
- Red Team Reviews
- Strategic Planning for Major Initiatives
- Faculty Consultations
- Collaboration Toolkit
- Sample Proposals
- Monthly Newsletters
- Workshops

Research Productivity Resources

https://www.research.ucsb.edu/research-development/resources

- **National Center for Faculty Development and Diversity (NCFDD)**
  - webinars on organization, productivity, and managing professional stress

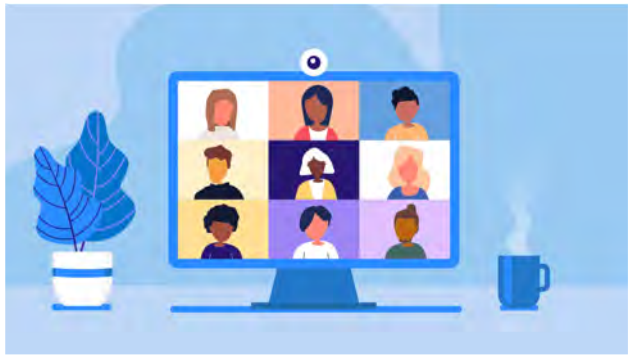
- **Write on Site (WOS) - writing accountability and productivity community**
  - https://www.research.ucsb.edu/wos

- **Recorded Workshop: Managing Remote Teams: Insights from Organizational Research**
  - https://drive.google.com/file/d/1AafMMuRkFpO5F8-_RUMxaMKR7M67Q3Am/view

- **Career Strategic Planning Resources**
  - best practices for keeping your career on track
  - professional goals and milestones worksheets

Upcoming RD Events

https://www.research.ucsb.edu/workshops-events



- **NIH Virtual Grant Writing Workshop Series**
  - Focus on writing R01 and R21 proposals
  - May 15, 22, 29, June 5
  - 10 am - 12 noon
- **PI Academy: Data Management and the DMPTool**
  - Wednesday, May 20th
  - 12 noon - 1:30 pm
- **PI Academy: Engaging and Working with Program Officers**
  - Wednesday, June 30
  - 12 noon - 1 pm

Communicate with Us

- **Tell us about your:**
  - New Grants
  - Research Results
  - Publications

- OR is fielding requests for information about COVID and Other Exciting UCSB Research Projects from funders, UCOP, the Chancellor's office, etc.

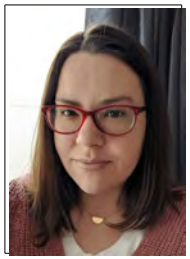
- **What Else Can Research Development Provide?**
  - Workshops
  - Agency Information
  - Collaborators

Barbara Walker

Andrea Stith

Maria Napoli

Danielle Chandler



Kelly Pillsbury

UCSB Governmental Relations

KIRSTEN Z. DESHLER, Director
MONICA SOLORZANO, Assistant Director

Issues impacting UCSB at the local, state and federal levels

UCSB Government Relations

Kirsten Z. Deshler

Director

Monica J. Solorzano

Assistant Director

Works at the local, state and federal level to educate and advocate on behalf of the university

Cultivates relationships between the university and public policy officials

Works closely with the UC Office of the President in Sacramento and DC; higher education associations and advocacy groups to promote the university

COVID-19 Activities

Local and State

Evolving State and Local Reopening Processes and the Impact on the Campus

- Understanding Governor's Roadmap
- Resilience Indicators
- Sector Planning
- Role of County Public Health

State Fiscal Outlook

- Projected Deficit - $53.4B (37% of General Fund)
- Western State Governors $1T Federal Funds request

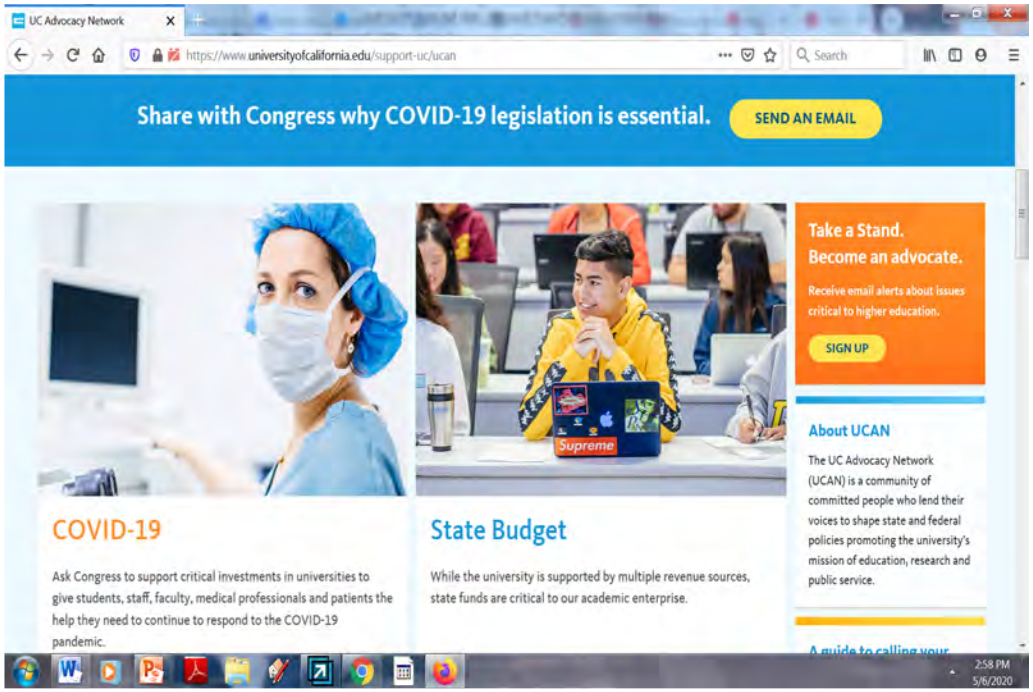
Federal Funding Focus

Advocacy
- Federal Agencies
- Congress

CARES Act and Phase 4 Stimulus
- Heroes Act

Research Costs & Infrastructure

Immigration Executive Order



UC Advocacy Network (UCAN)

https://www.universityofcalifornia.edu/support-uc/ucan

More Info & Resources:

UC State Governmental Relations https://ucop.edu/state-governmental-relations/index.html
UC Federal Governmental Relations https://ucop.edu/federal-governmental-relations/index.html

Thank you!

Kirsten - kirsten.deshler@ucsb.edu
Monica - monica.solorzano@ucsb.edu

Distance, Test and Track

CAROLINA ARIAS, Assistant Professor, MCDB

The science behind the steps to re-open

Rationale

- The phasing out of sheltering measures and the re-opening of the economy, and our campus, require widespread COVID-19 testing and contact tracing.

Total tests in the U.S. 9,382,235 (~400,000 a day)

- Testing and regular monitoring of our community will facilitate the rapid response to new cases.
- The ultimate goal is to prevent outbreaks from flaring.

https://covidtracking.com/data

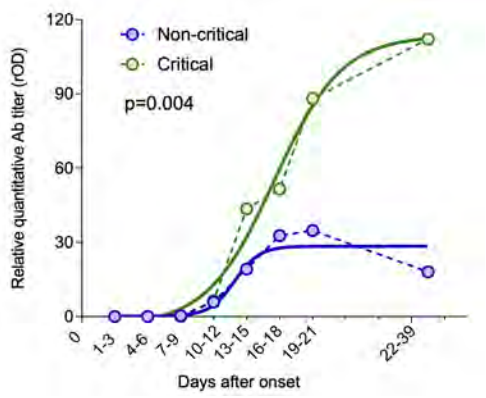
Current testing strategies

Detection of viral sequences in samples	**Detection of antibodies in samples**
Monitor Active Infections	Monitor Exposure to Virus
RT-qPCR	Serological test
Essential for diagnosis	Important for understanding the scale of pandemic

Serological tests:

Detection of antibodies against the SARS-CoV-2 virus.

Reports exposure to virus (not presence of it)



Levels of antibodies to SARS-CoV-2 in critical vs. non-critical patients

https://doi.org/10.1093/cid/ciaa344

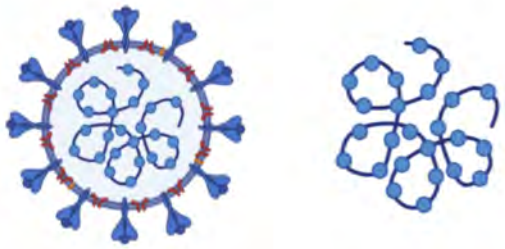
https://www.idsociety.org/globalassets/idsa/public-health/covid-19/idsa-covid-19-antibody-testing-primer.pdf

Limitations:

- Antibody response in patients not clear.
- Variable performance of tests
- Not recommended for staffing decisions or PPE requirement decisions

Genome detection

Extract → Amplify → Detect



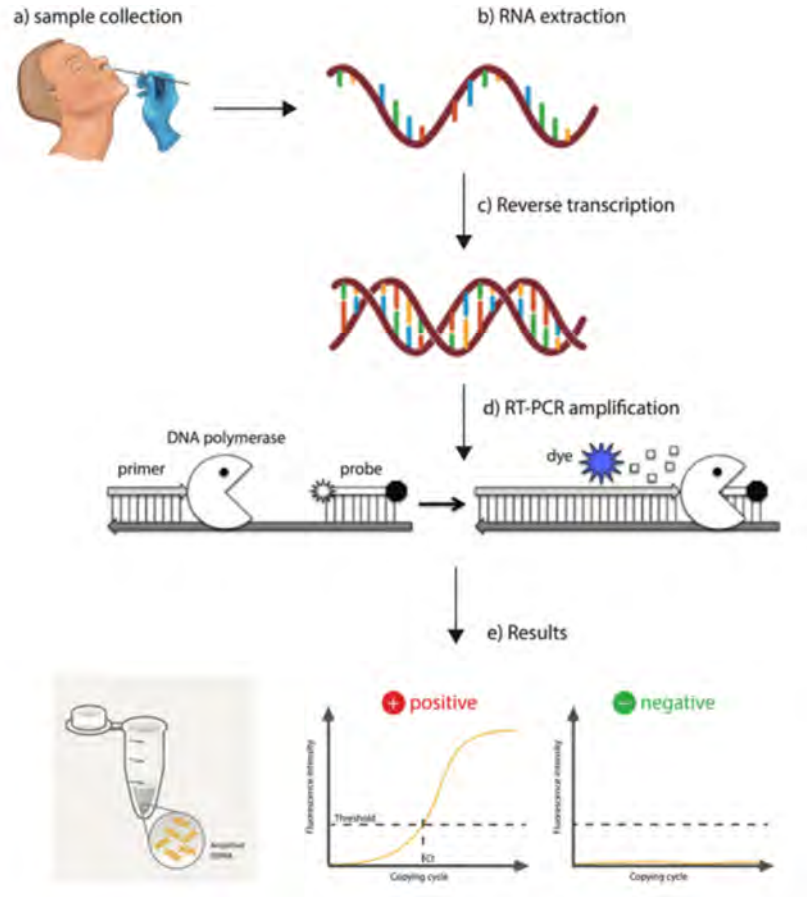
RT-qPCR

Real Time Reverse Transcriptase Polymerase Chain Reaction

Limitations:

-Requires specialized equipment and trained personnel

-If viral load is too low (early or late infection) it may not be detected



https://www.globalbiotechinsights.com/articles/20247/the-worldwide-test-for-covid-19

How can we overcome these limitations?

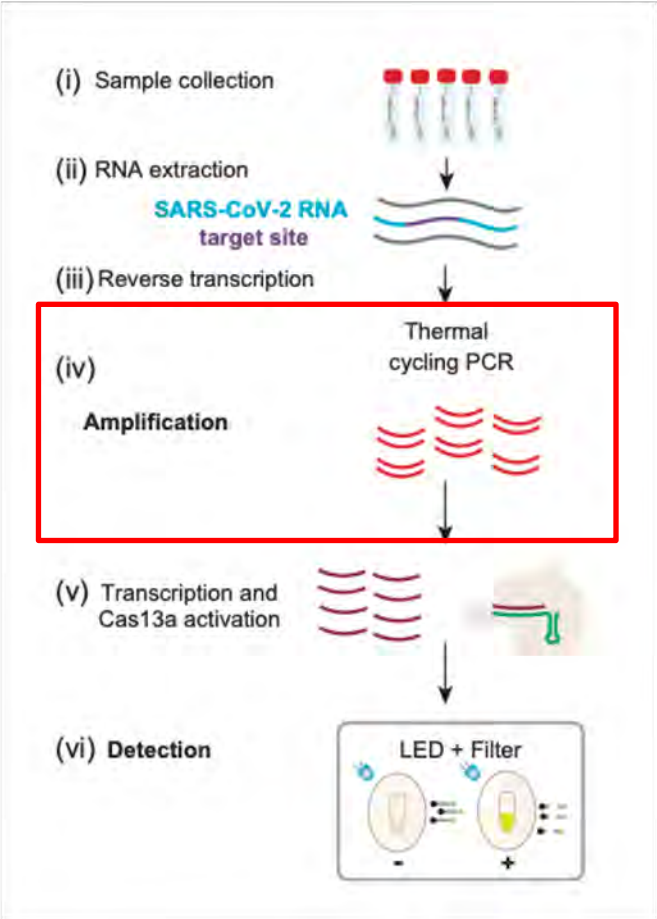
Develop a test that does not require specialized equipment or expensive reagents

CREST (Cas13-based, Rugged, Equitable, Scalable Testing)

MCDB Molecular, Cellular, and Developmental Biology

Acosta-Alvear, Kosik, Wilson

CREST (Cas13-based, Rugged, Equitable, Scalable Testing)

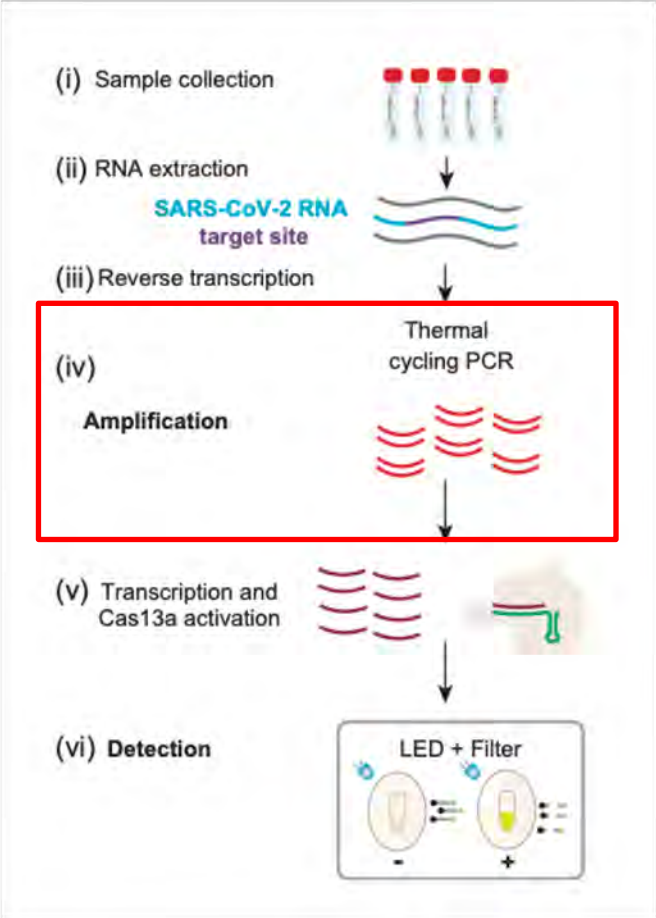


Extract

Amplify

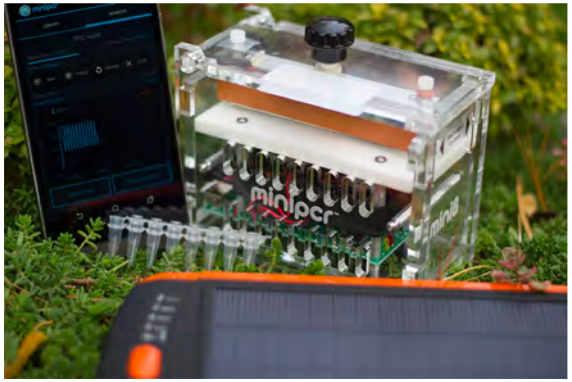
Detect

CREST (Cas13-based, Rugged, Equitable, Scalable Testing)

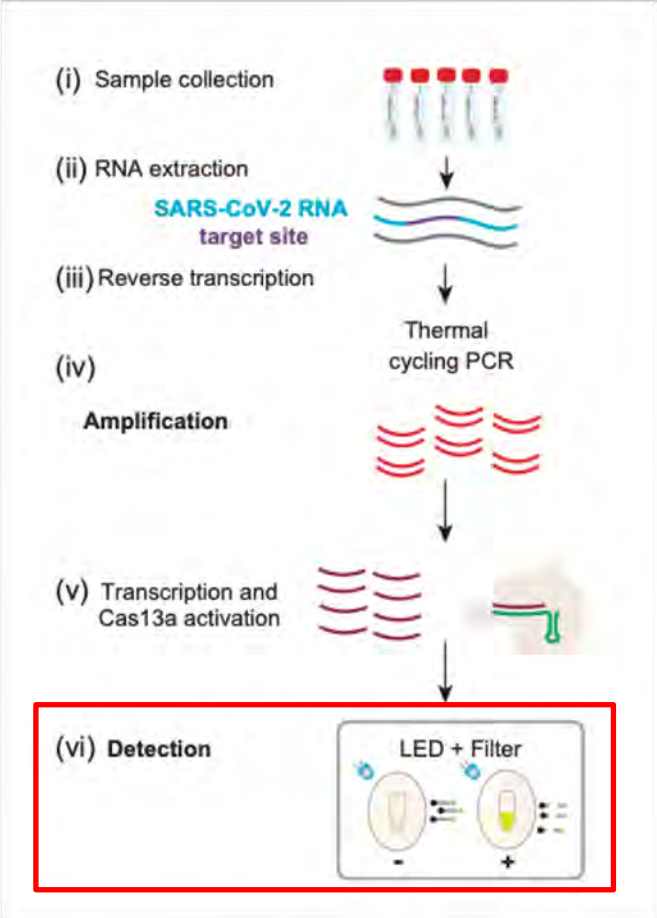


The enzymes for PCR are very accessible, cheap and used worldwide

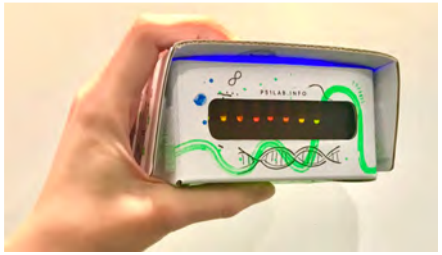
The equipment required is available in all laboratories that do molecular biology



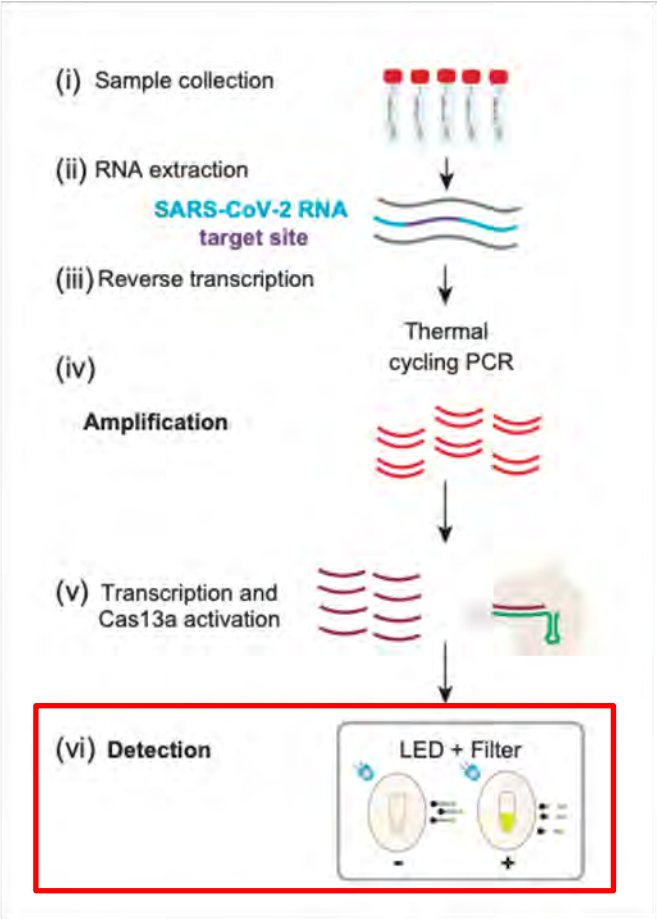
CREST (Cas13-based, Rugged, Equitable, Scalable Testing)



The detection of fluorescence does not require sophisticated equipment



CREST (Cas13-based, Rugged, Equitable, Scalable Testing)



It is easy! Very few steps and all methods used are common for molecular biology labs.

It is scalable!
PCR can be automated
Visualization can be high throughput (using sophisticated equipment)

How do we plan to use it?

SURVEILLANCE

CREST for surveillance of SARS-CoV-2

- Test for SARS-CoV-2 in 1000-1500 individuals
- 18 yo and older, healthy, asymptomatic
- Samples to be tested with RT-qPCR and CREST

- Validation of CREST
- Prevalence of SARS-CoV-2 in our community

- Sample collection to start in the next week

CREST for surveillance of SARS-CoV-2

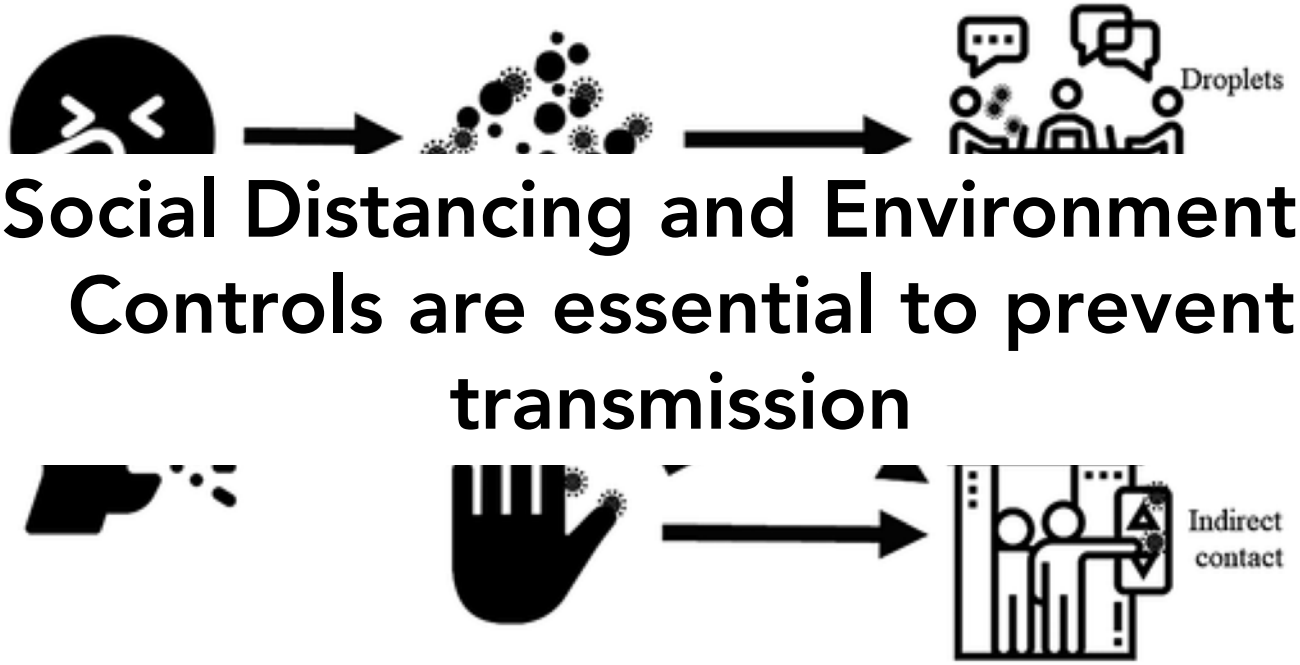
What if we have a positive case?

- Suspected positive cases will be reported to the individual and to the public health department
- Cases will need to be confirmed with a diagnostic test
- Public health has protocols in place for isolation and monitoring of COVID-19 diagnosed patients

Testing is good!.... But is not enough

We need to remain vigilant and keep our DISTANCE!!

COVID-19 Transmission: Direct and Indirect



Social Distancing and Environmental Controls are essential to prevent transmission

https://acsjournals.onlinelibrary.wiley.com/doi/10.1002/cncy.22280

What does social distancing mean?

- Maintain physical distance from others
- Limit social interactions
- Avoid public transportation if possible
- Work from home whenever possible

Environmental controls

- Wear a mask
- Wash your hands regularly
- Self-monitor for symptoms daily

- Disinfect surfaces.

Without a vaccine or a treatment, the best ways we have to stop COVID-19 are widespread testing, social distancing and environmental precautions

Thank you!

Jenny Rauch
Eric Valois
Sabrina Solley
Friederike Braig-Karzig
Ryan Lach
Naomi Baxter

Research in the COVID-19 Era

Town Hall Meeting

J. Incandela VCR

12 May 2020

UC SANTA BARBARA
Office of Research

Planning for research in the COVID-19 Era

- We have done a lot of study and held many meetings over the past 10 weeks or so
  - UC Council of VCR's met daily first 4 weeks, now twice per week
    - Established uniform principles and guidelines for all UC's
  - Chancellor's COVID-19 Response Team met daily 10 weeks, now 3 times/week
  - Chancellor's Re-Opening Planning Group meets twice/week starting today
  - Many hours spent with industry health-safety experts
  - Many research articles read and studied
  - Reviewed draft plans from dozens of top research universities
  - Studying plans & training videos from national and international laboratories
- Received messages & held discussions with many people on campus
  - Dialogue broadening now as we turn to the researchers on campus to help us begin ramping up again with the best ideas for how to keep everyone safe

This presentation

- Broad brush overview of plan to ramp up research
  - Will address many questions but don't have all the answers yet
    - Counting on community to help with details, best practices.
- The pandemic has many impacts
  - Sheltering at home when you live alone or with a partner has different challenges than those for people who must take care of children or elderly relatives
  - Similarly, it will affect different researchers, programs and buildings differently

The new normal

- Risks exist and could grow as the state opens up
  - We were fortunate to shutdown in-person classes and research and go into the Shelter-in-Residence (SiR) period when there were very few cases in South SB County
  - Few with immunity makes SB vulnerable when SiR period ends
    - Openings across state will bring visitors and new cases
  - The nation is not really getting safer
- Testing and contact-tracing need to ramp up too
  - Outbreaks can occur and spread without signs
  - We will need to take extra care
- Even places that were very successful have seen flare-ups after beginning to reopen (e.g. Germany, Korea, Japan, …)

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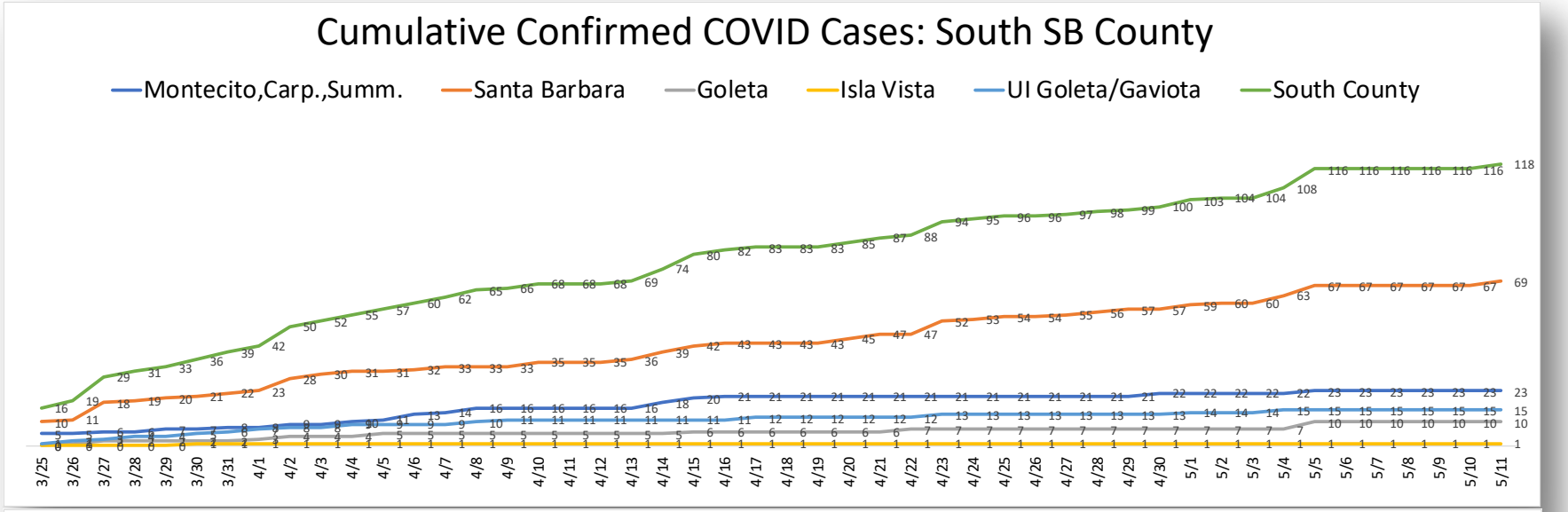
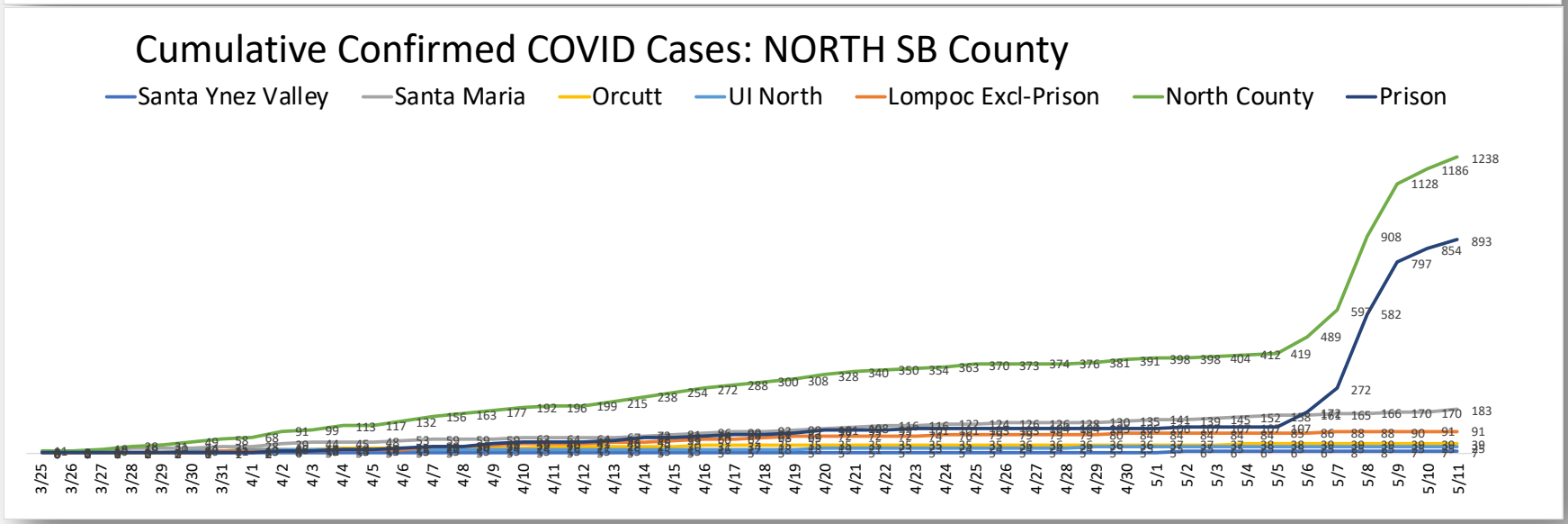
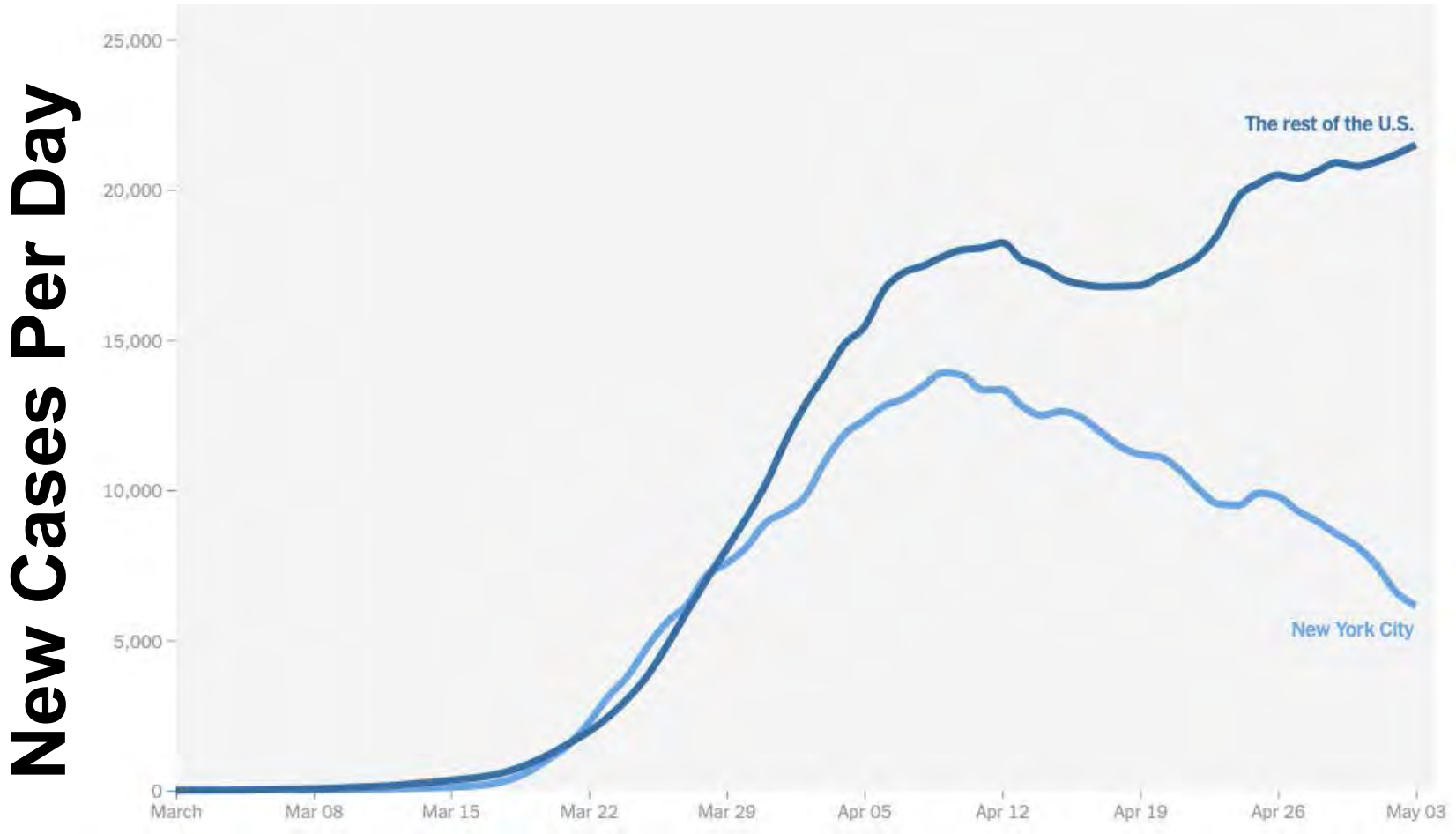
Our county





- South county
  - slow rise to 120 cases
- North county
  - Prison dominates
    - may contribute to higher case rates in nearby cities
- Density is bad
  - Serious outbreaks seen in dense populations

National situation

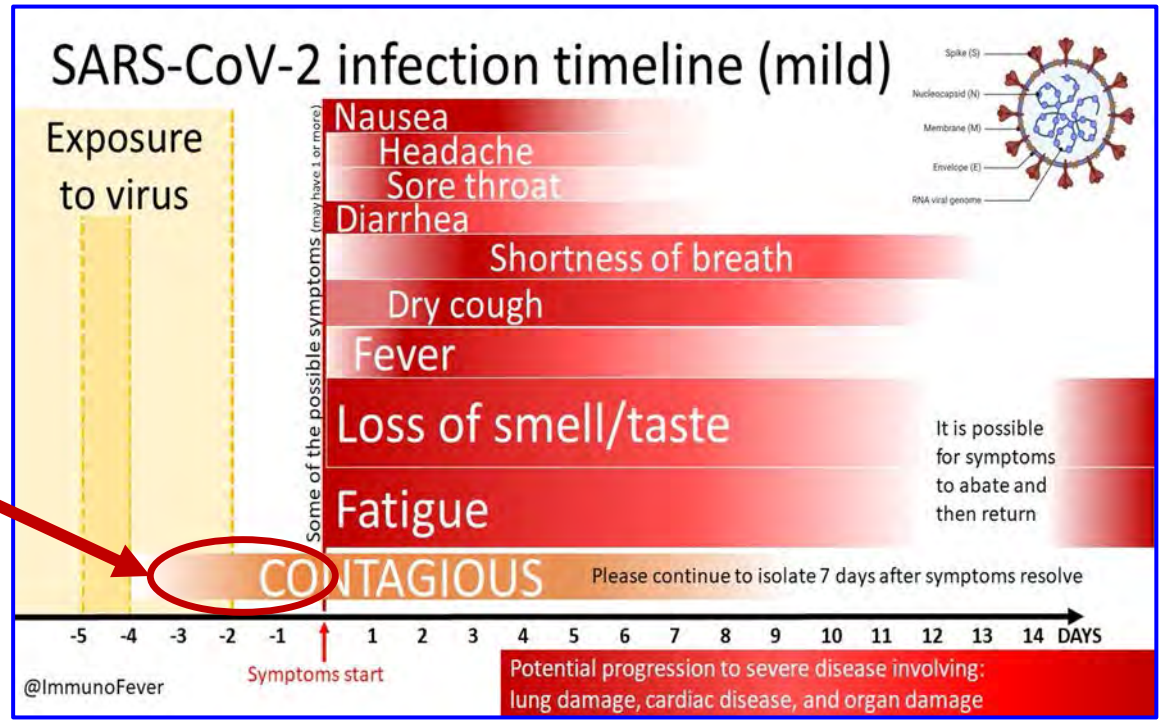


- NY Dominated
  - Now falling with Sheltering
  - Hides what's happening elsewhere

COVID-19 is a new disease, with new challenges

- Asymptomatic and pre-symptomatic carriers are thought to be up to 50% of total cases.[1]
  - ~25% never-symptomatic and ~25% pre-symptomatic
    - Pre-symptomatic carriers can shed significant amounts of virus 2-3 days before symptoms appear.[2]
- Enables the virus to potentially infect many people before there's any sign it's there.
  - We will be extra careful to keep numbers and densities low
- **Physical distancing will remain our most important precaution**

immunoFever/status/1250573587833970688



Treat everyone as if they may be infected

[1] https://www.nature.com/articles/s41591-020-0869-5
[2] https://www.nature.com/articles/s41591-020-0869-5

How long does the SARS-COV-2 virus hang around ?

On Wood: Up to 24 hours

Plastic: Up to 72 hours

Fabrics: Viral particles have been found up to 7-10 days on surface of masks[1]

Cardboard: Up to 24 hours

Stainless Steel: Up to 72 hours

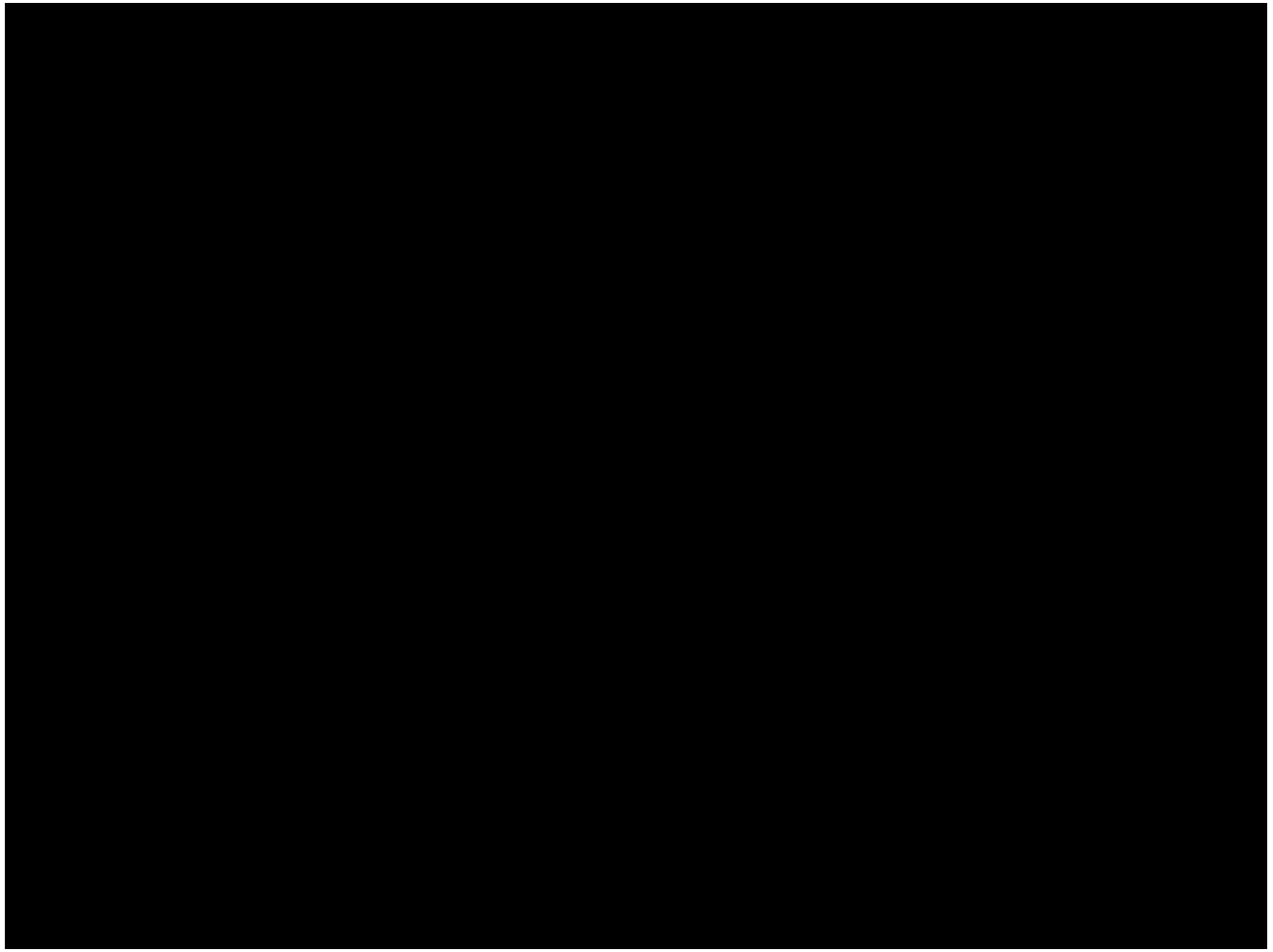
Wear face-coverings, maintain clean surfaces, clean hands, while on campus in labs & offices

[1]**Washing masks/Clothes?** The CDC recommends warmest water setting and dry completely

Coughs and ventilation

https://www.youtube.com/watch?time_continue=1&v=WZSKoNGTR6Q&feature=emb_logo

- HVAC systems can spread droplets
  - Breakouts documented
- **We'll look at ventilation systems**
  - building by building, room by room, taking their performance into account
- Must coordinate the re-opening of buildings in general!

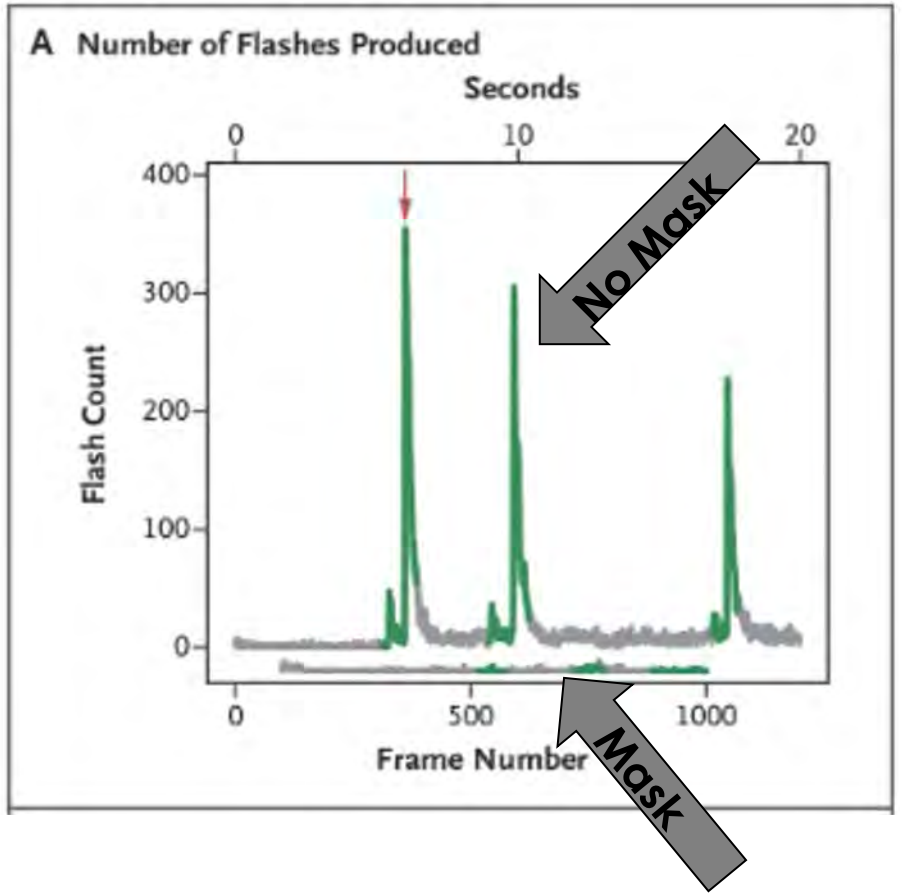


Finnish Meteorological Institute / Aalto University / VTT / University of Helsinki / IT Center for Science CSC. Animation: Mikko Auvinen and Antti Hellsten.

Everyone shall wear a face-covering!

https://www.youtube.com/watch?time_continue=9&v=jgoTMOgb3Ds&feature=emb_logo

Figure 1.



Source: Visualizing Speech-Generated Oral Fluid Droplets with Laser Light Scattering NEJM April 15, 2020
https://www.nejm.org/doi/full/10.1056/NEJMc2007800

Ramp-up plan in a nutshell

- Goal #1: Nobody gets sick
  - Minimize numbers, density, time on campus and follow good protocols
  - Ramp up carefully in stages
- Challenge #1:
  - Having a plan for each building that will keep risks low
    - We'll provide guidelines, ideas
    - Want reasonable uniformity across campus
- Challenge #2
  - What research goes earliest?
    - We'll provide guidelines but expect this to be worked out equitably among researchers
      - Keep in mind that if all goes well, the next stage could come quickly
    - If issues arise that are difficult to resolve, they can be kicked up to the Deans and VCR

Rely on researchers to manage the details

- A team per building
  - Dept. chair(s) +/or institute director(s)
  - Building manager, EH&S lead, Administrative support
  - Others to help select and form a program in the building for each stage
- Compare notes for clusters of buildings by research areas
  - Meet occasionally to compare notes and share best practices/solutions to common problems
  - Coordinate requests for materials (e.g. sanitizer stations)
  - Some problems can be solved from a perspective of more than one building
- Oversight
  - VCR, VCAS, Deans, EH&S, CRPP, FM, additional representation…
  - To help where needed, and to decide if, and when, to go to the next stage of the ramp up or, if things go wrong, to scale back down

Principles and Guidance

- Principles for ramp up developed collaboratively with the Vice Chancellors for Research from across the UC System,
  - Meant to help working groups to understand expectations, set criteria for which research gets to ramp up earliest etc.
- Guidance
  - **Stage 3 is next and has been given the most thought**
    - Other Stages will depend on what we learn in prior stages and so are not near to being finalized.
  - **Main point: keep the density and total numbers low to minimize contacts and to minimize number of people on campus in general**
  - We must also consider conditions in the community and our own track record in establishing a culture of safety

Managing the program and critical decisions

- More research without endangering anyone's health
  - Distributed effort, with most of the activity, monitoring, access control at the building and department level
- If there is a single infection or a more significant outbreak
  - We will take steps to trace those who may have been at risk of infection and protect those who are working in the same area(s).
  - Will ramp down some, or all, of the research in a lab/building to allow virus to deactivate or to allow the area to be sanitized, or both.
  - Review the facts and and decide if more serious steps need to be taken.
- Nanofab was our first example and the safety protocols in action there were effective, and yet they were enhanced !

6 Stages: 3 that matter

- Stages 1 and 2
  - Critical research
    - e.g. COVID-19 with very near-term benefits
  - Essential maintenance
- We have approved
  - 90 essential maintenance tasks
  - 70 research tasks
    - Most small
    - COVID related
    - Mission Critical

- **Stage 3:** ~10-25% activity
  - "critical" relaxed to include time-sensitive research
    - 10-25% activity with 5%-15% of normal personnel

- What follows will depend on how things go:
  - *Stage 4: ~30-60 % activity*
    - *~15-30% total personnel on-site*
  - *Stage 5: 50-90% activity*
    - *~30-50% total personnel on-site*

- *Stage 6: vaccine available*
  ~100 % of program

Stage 3: Deadline-driven research examples:

- Tasks close to completion whose delay would lead to catastrophic loss of results.
- Animal experiments where delay results in euthanasia or loss of a colony.
- Prioritize
  - access for graduate students and postdocs close to degree/term of appointment
  - grants ending soon where funding agency has not granted leniency
- Core facilities:
  - Restart if sufficient approved projects where work cannot be done remotely
- Field research:
  - Expand approvals depending seasonality and restrictions on travel or in areas of field stations

- HASSE (Humanities, Art, Soc. Sci. and Education):
  - Library research options
    - e.g. paging services, where faculty can order books and other materials to pick up from campus location
    - Prioritize researchers with deadlines (tenure, book contracts, etc.) for access to rare books/materials on a limited basis
- Access to Offices
  - Where justified and with similar caution as for labs

Before leaving any stage

PREPARATIONS FOR NEXT STAGE	
	• *Core functions are staffed and operational to handle increased load (FM, EH&S, etc.)* • *More core facilities are staffed and operational* • *Labs are able to purchase necessary supplies* • *Social-distancing, face-coverings, cleaning measures understood and in place* • *Have demonstrated stable environment of full compliance in current stage and established safety protocols that enable research to scale-up to the next stage*

- Prepare for next stage
  - *Have demonstrated stable environment of full compliance in current stage and established safety protocols that enable research to scale-up to the next stage*

Selection of research at each stage

- Call for applications based on a given set of criteria
- Review, selection, plan formation
  - Review by chairs, directors, building managers, select faculty etc.
  - Prioritize (Deans could help or review at this stage)
  - Research WG & Building committees formulate an overall plan for their buildings/spaces that meets the overall density goals and includes the highest priority research programs
- The go-ahead
  - Oversight committee reviews plans for the upcoming stage.
    - May suggest modifications but hopefully it will all be ready to go
  - With agreement of oversight committee, stage launches
    - This also may depend on state and county health authorities, testing/tracing on campus, legal liabilities

Establishing Safe Practices

- It is important to understand that there will not be a return to "business as usual."
  - Access to campus will continue to be highly restricted.
  - Suitability of research spaces for occupation in this period will need to be carefully understood In the context of our understanding of the transmission properties of COVID-19.
  - Includes understanding air-change rates and any cross-space ventilation issues, clear signage, and hand sanitizer.
- **Safely performing research during this pandemic will require a level of coordination beyond the norm for us.**

We all play roles in protecting our community

- Oversight Committee Deans, EH&S, FM, AS etc. etc.
  - Provides oversight of program but also sets example
- Chairs, Directors, Building Managers and Safety leads etc.
  - Determine research projects to ramp up at each stage
  - Direct involvement in managing health safety at the building level
- PI's, faculty, Prof. researchers, Post-docs, GSRs, Technical personnel etc.
  - Will understand the hazards and how to mitigate them
  - Will fully comply with all protective measures
- And there you have it: A new culture of safe research during a pandemic

Q & A

ALL SPEAKERS AND OFFICE OF RESEARCH DIRECTORS

Previously submitted and Current Questions

We are ready for your questions!

- **Speakers**
  - Joseph Incandela (VC Research)
  - Carolina Arias (MCDB)
  - Kirsten Deshler (Government Relations)
  - Cora Diaz (Sponsored Projects)
  - Barbara Walker (Research Development, Soc. Sciences)

- **Office of Research Directors**
  - Tim Sherwood (Assoc. VCR)
  - Manny Garcia (Animal Resource Center, Campus Veterinarian)
  - Barry Rowan (Research Integrity)
  - Brett Fortier (Information Systems)
  - Jane Kittle (Budget, Finance)
  - Maria Napoli (Research Development, Biological Sciences)
  - Sherylle Mills Englander (TIA)
  - Andrea Stith (Research Development)

Need to follow up?

- Revisit the Town Hall Website (research.ucsb.edu/research-town-hall) to
  - View FAQs related to the ramp-up
  - Submit follow-up questions

Thank you!

UC SANTA BARBARA