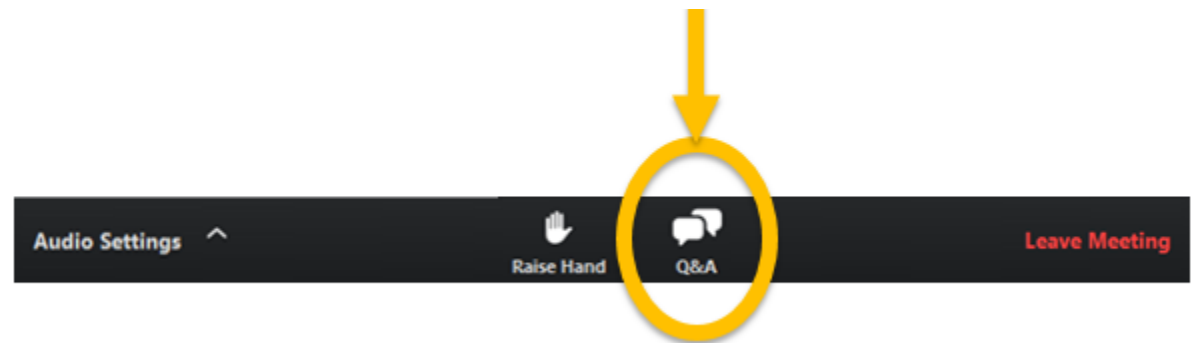# Faculty Discussion on COVID-19 Research

April 3, 2020
3:30pm-4:30pm

Welcome! The session will start at 3:30 pm

To type in your questions use the Q&A feature

of zoom (see below).

Please do not use the Raise Hand prompt

Please mute your screen

Audio Settings ^   Raise Hand   Q&A   Leave Meeting

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Agenda

- Update on institutional support
- Panel discussion
  - BSL3 Lab (C. Gilliam and B. Dickinson)
  - Computational resources (R. Stevens)
  - Structural biology/genomics (A. Joachimiak)
  - Communication Channels (M. Rosner)
- Q and A
- Next Steps

Funding Landscape: NIH

- Phase 3 of COVID-19 legislation passed
  - $945 million
  - vaccine, therapeutic, and diagnostic research
  - underlying risks to cardiovascular and pulmonary conditions.
  - Over $700 million of this funding will be directed towards NIAID
- NIH is "likely" going to put the money into the existing mechanisms for COVID-19 related research

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Funding Landscape: NSF

- Phase 3 also provided $76 million for NSF

  - supplement an ongoing programs that allows researchers to jump into the field using pilot studies focused on natural disasters

  - RAPID program – up to $200k for one-year duration for "non-medical, non-clinical-care research"

  - NSF is also welcoming COVID-19 proposals through existing funding mechanisms

COVID-19 Funding Opportunity Webpages

THE UNIVERSITY OF CHICAGO | Office of Research Safety

SARS-CoV-2 (COVID-19) Research Laboratory Biosafety Guidelines

Research Activities with Known or Likely Infected Specimens from Humans or Animal Models	Assigned Biosafety Level	Contact for Help, Approvals & Access to Appropriate Laboratory Facilities
- Storage and laboratory work with seed stocks, working stocks or specimens[1] with the intent to grow or use live virus at UChicago. - Virus isolation, characterization and/or expansion - Viral cultures or isolates should be transported as Category A, UN2814, "infectious substance, affecting humans"[2] - Use of live SARS-CoV-2 virus in functional assays: - Plaque/Focus Forming Unit assays - Serologic virus capture/binding assays - Therapeutic MIC assays - Live cell sorting with intact virus - Use of live SARS-CoV-2 virus in animal	BSL-3/ABSL3[3]	**Joseph Kanabrocki, Ph.D., CBSP** Associate Vice President for Research Safety, Select Agent Responsible Official **Office of Research Safety** Phone: 773-834-2707 jkanabro@bsd.uchicago.edu https://researchsafety.uchicago.edu/ https://htrl.uchicago.edu/
- Processing, aliquoting or preparing specimens[1] for research use and storage - Preparation of chemical- or heat-fixed specimens[1] for microscopic analysis - Nucleic acid extraction of specimens[1] for molecular analysis - Preparation of inactivated specimens for other laboratory assessments - Performing diagnostic tests (e.g. serology) that <u>do not</u> involve activities with the potential to propagate virus - Inoculating bacterial or mycological culture media	BSL-2 *with* enhancements[4]	**John Bivona, RBP** Senior Biological Safety Officer, Select Agent Alternate Responsible Official **Office of Research Safety, Howard T. Ricketts Lab** Phone: 630-252-1742 jbivona@uchicago.edu
- Molecular analysis of already extracted nucleic acid preparations - Analysis of specimens[1] that have been inactivated by a method approved by the Office of Research Safety. - Final packaging of specimens[1] already in a sealed, decontaminated primary container for transport to collaborating laboratories for additional analyses - Specimens from suspected or confirmed cases should be transported as UN3373, "Biological Substance, Category B - Pathologic/microscopic examination of fixed specimens[1] (e.g. formalin-fixed tissues or glutaraldehyde-fixed grids). - Routine staining and microscopic analysis of fixed smears - Routine examination of bacterial and mycotic cultures	BSL-2	**Allen Helm, PhD., RBP, CBSP Senior Biological Safety Officer, Select Agent Alternate Responsible Official** **Office of Research Safety** Phone: 773-834-6756 ahelm@uchicago.edu

*Please note that all proposed research with SARS-CoV-2 (COVID-19) requires review by the Office of Research Safety and will require approval of a Standard Operating Procedure (SOP) for the research. In addition, some research will also require approval by the Institutional Biosafety Committee (IBC), which will be coordinated by the Office of Research Safety, researchsafety@uchicago.edu**

[1] Specimens are defined as, but not limited to, blood, serum, plasma, tissues, feces, urine, sputum, mucosal swabs or washes/secretions collected from any species.
[2] For assistance with *required* import permits and export licenses contact **University of Chicago's Export Control Compliance Manager** (dsanchezr@uchicago.edu, 773-702-8601).
[3] Animal Biosafety Level-3 (ABSL-3)
[4] Required Enhancements to standard BSL2:

- Any procedure with the potential to generate aerosols or droplets (e.g. vortexing, cell sorting, ELISA plate washing) will be performed in a certified Class II Biological Safety Cabinet (BSC). BSC must be decontaminated with an EPA approved disinfectant for coronavirus.
- Personnel will wear impervious gown/lab coat, surgical mask with eye protection/face shield and double gloves.
- Centrifugation of specimens must be performed using sealed centrifuge rotors or sample cups.
- The use of sharps should be eliminated wherever possible.
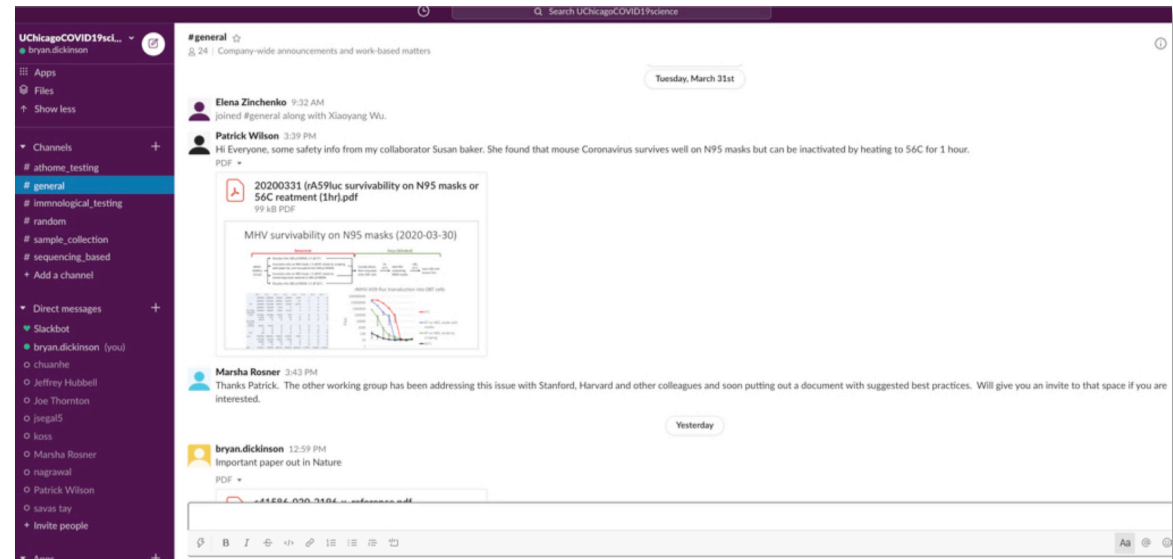
Panel Discussion

- BSL3 Lab - Conrad Gilliam and Bryan Dickinson

- Computational resources - Rick Stevens

- Structural biology/genomics - Andrzej Joachimiak

- Communication Channels - Marsha Rosner

Communication Channels

- Zoom meta-lab meetings

- Slack channels:
https://join.slack.com/t/uchicagocovid-opa3573/shared_invite/zt-d5cqhuci-jeOnbJcZUcSPa2_dNBoOnw

Potential Focus Groups

- Clinical trails

- Virus detection and serological analysis

- Models and forecasting

- New treatments to target virus-antibodies-vaccine, other Ab-based

- New treatments to target virus-peptides and small molecules

- New treatments to target host and alleviate disease – host lung and host immunity, targeting leaky
  blood vessels to enhance drug delivery or using nanoparticles

- Understanding biology-harvesting virus-infected tissue to create cell lines and isolate viral material,
  develop organoid or genetic (e.g. fly) models

- Other

Website for Research Resources and Updates

- researchcontinuity.uchicago.edu
  - To submit research interests, <u>resources that you need and could share with colleagues</u>, go to **COVID-19 Research Forum**
    - CNET ID-protected
    - Coming soon: Fermilab and Argonne access

Argonne National Laboratory

Computational Research Directions:

- Compound screening

- Vaccine development

- Response prediction, patient risk outcome

- Computational epidemiology

- Virus evolution

For further information about resources and access contact:

Paulina Rychenkova (prychenkova@anl.gov)

David Martin (dem@alcf.anl.gov)

Other resources

- COVID testing developed: https://www.finddx.org/covid-19/pipeline/
- Curated preprints:
    - https://connect.biorxiv.org/relate/content/181
    - http://biomed-sanity.com/
    - http://scholar.google.com – curated links to journals posting COVID publications on the bottom

Important Contact Information

- For general COVID-related research inquiries (collaborators, etc.), email to covid-research@uchicago.edu

- For internal seed funding and federal proposal matching and preparation, email Elena Zinchenko elenaz@uchicago.edu or covid-research@uchicago.edu

- For updates: researchcontinuity.uchicago.edu
  - For Research Intake Form, go to COVID-19 Research Forum and https://covidresearchintake.uchicago.edu/

- For general info: coronavirusinfo@uchicago.edu

- Technical COVID Response Team