Conducting Research during, and directed at, the COVID-19 pandemic

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GREAT PLAINS
IDeA | Clinical and
Translational Research

UNMC | COLLEGE OF MEDICINE

Disclosures

Dr. Fox has no conflicts of interest to disclose

There will be no discussion of investigational or off-label use of products

Objectives

How researchers are adapting to performing their work given issues with
health and safety during this time

Research that is ongoing on COVID-19

Future planning for COVID-19 and other research

Current research funding information

Time-line at UNMC

The University of Nebraska announced it was closing its campuses, including UNMC, on April 8th, to be effective April 10th

This closure was reviewed every two weeks, and was renewed until the end of May

Only employees designated as essential (with Chancellor-level approval) could be on campus, in addition to those involved in clinical work in Nebraska Medicine

Such essential personnel must follow safe social distancing and mask policies

They should only be on campus for activities that require them to be, otherwise, along with others, work from home

Research Policies (lab-based)

Note that research was never closed

Starting new experiments was highly discouraged other than those directed at COVID-19 issues

All animal orders were halted, and investigators encouraged to stop any breeding other than essential to keep animal numbers down.

In case animal care became limiting, investigators needed to identify cages of essential rodents that could not be replaced from other sources.

Sperm cryopreservation for mouse lines offered through core

Labs encouraged to cryopreserve cell lines

Research Policies (lab-based)

Having students come on campus as part of essential personnel was highly discouraged

All labs should have emergency contact information for personnel, and encouraged to have regular check-ins

Any lab closing/without personnel coming in required to fill-out plans, indicating contacts, checking freezer alarms and call lists, needs for items such as liquid nitrogen

Most service cores remained open, but with limited service (by appointment) and with special requirements

Research Policies (lab-based)

On June 1, the limitation on essential personnel was lifted

Animal orders allowed, Cores back to operational

However not business as usual

Social distancing, masks, other precautions

If one doesn't need to be on campus, should not be, work that can be done at home should be done at home

Challenges – Lab research

Vast majority of work is done on campus, working at home not possible

Experiments can require the coordinated action of multiple people

Techniques can require continual training and supervision

For computational/data-based work, many are not used to working remotely

Not all have facilities to work at home – quite space, proper computer hardware, software, and internet access

Stay at home fatigue

Funding – how to meet goals

Advice – Lab research

Plan: Examine lab and desk/office space, experimental protocols. Work with personnel on safely carrying out work. Enhanced cleaning, masks, distancing. Possibilities of shift work, alternate days, etc.

Learn: Read and research new ideas for the next grant, the next paper. Learn about new concepts and techniques. Watch on-line webinars and instructional videos.

Analyze: Look at old data or new data and get it analyzed, or think about it in a different way. Make use of biostatistics and biomedical informatics colleagues.

Collaborate: Begin or continue talks with colleagues to develop projects

Write: Abstracts, manuscripts, grants, concepts, methods. Talk to your program officer about concepts. Look at RFAs and other fundimg announcements. Think about COVID-specific opportunities and how you can apply your knowledge and skills, as well as learning new things.

Human Subject Research

Initially halted except for select projects

Since May 18th the following has been allowed

- Accrual of subjects to extramurally-funded clinical research activities that have the prospect of direct benefit to the subject
- Accrual of subjects to, and collection of extra specimens for, biobanking protocols in which the extra specimens are collected at the time of a scheduled procedure
- Accrual of subjects to biobanking protocols in which the excess specimens are collected at the time of a scheduled procedure
- Accrual to data registries or other non-interventional studies when the subject and research staff will already be interacting in a clinical setting.
- Non-therapeutic assessments (e.g., ECG, radiographs) and procedures (limited to blood drawing and minimally invasive biopsies) can be completed as part of therapeutic studies
- All of the above assumes these take minimal additional time and do not expose subjects or research personnel to unnecessary increased risk

Advice – Human Subject Research

Largely the same for basic research, except much less can be done at home, so quite limited ability to progress on goals

Funding – many sponsors, including NIH, realize the value of increasing funding to enable the study to reach its goals

Modify protocols to enable safely, but take into accocunt the effect on results

Remote consent and various tele- or video- options available for some data collection

Be especiwally cognizant of vulnerable population, as well as any subject who may be put at increased risk

Developing Plans

The development of plans is based on

- Our highest priority is to support community health and well-being.
- We will sustain the excellence of the institution
- We will adopt an evidence-based risk management approach to the COVID-19 challenge, and our decisions will be guided by public officials and health experts
- We will clearly communicate our policies and decision-making processes as they change over time, acknowledging that we are facing considerable uncertainty

Phases

Planning and training

- Safety, schedules

Re-entry of key personnel

- Restarting of equipment, checking supplies, cell culture, animal breeding

Research and proper support

- Coordination with other researchers, cores, facilities

PI-driven approach

The principal investigator (PI) of a research program—with detailed knowledge of workflow, layout, personnel, shared instrumentation, and program priorities—will work with his/her/their research group and departmental administrators to craft a plan to resume a program's research activities.

Guidelines for plans will ensure commonality of principles in implementing approaches across the enterprise and coordination between multiple investigators using the same building and/or other facilities

The research group's plans may be subject to a review/oversight

Culture of Safety

Communication

Involvement of employees and students

Training

Leadership by example

Well-defined processes

Initial Universal Standards

Required self-evaluation for COVID-19 symptoms and attestation as symptom-free for entry

Only approved, badged personnel on campus

Mandatory use of University-issued or -approved protective face coverings, currently defined as face masks, while on campus and in buildings,

Enhanced density and distance requirements,

Limited physical contacts

Enhanced facilities support

Guidelines – Labs - Offices

Limiting total person density within the University and within labs and other spaces

- Only be on campus when need to
- Lab meetings and other meetings should be done remotely
- Possible shift work, development of teams
  - AM / PM
  - Mon-Wed-Fri / Tues-Thurs-Sat
  - Mon-Tues-Wed / Thurs-Fri-Sat

Establishing space usage guidelines that optimize the distance between people

- Spacing between bench workers, between desk spaces
- Number of people in a given lab or office space at a time

Rules for common facilities and equipment

- Sign-ups for usage
- Cleaning requirements

Clinical Research Guidelines

In all cases, investigators should continue to limit in-person research encounters whenever possible

Tele-visits are still encouraged whenever feasible

Consent for accrual of new subjects must be conducted in a manner that optimizes physical distancing, including distance or video consent as appropriate, and other COVID-19 precautions

While these studies are allowed to begin or continue accrual, the investigator should contact the clinical area(s) where the study is to be conducted to obtain their permission to resume, including when relevant technologies and cores are included.

Clinical Research Guidelines

For both resumed, and currently halted work, researchers should also plan ahead with the unit as to how to conduct the protocol with the current mask, visitor, and social distancing policies of that area

For those performing in their own areas, develop social distancing and other safety policies to protect subjects and researchers

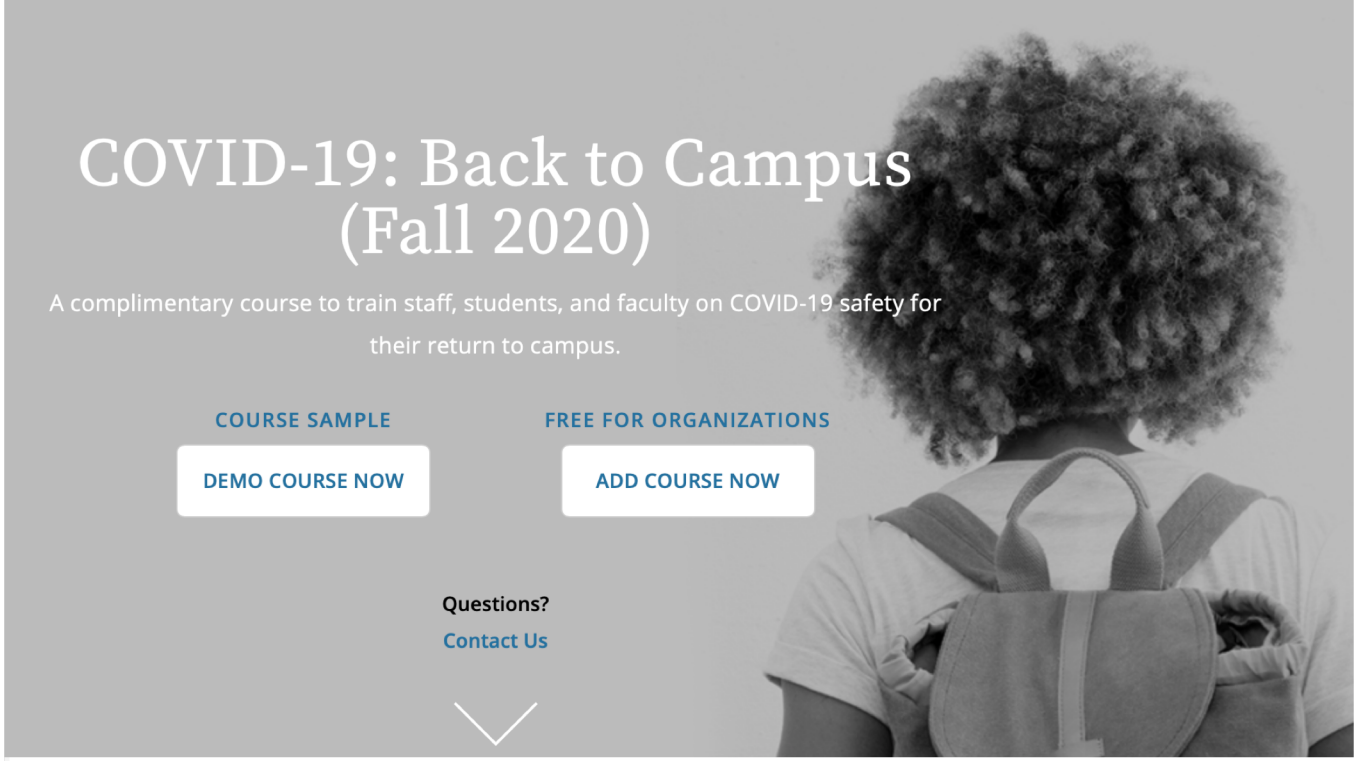
Investigators must be prepared to provide their own masks or PPE and clean the area after completion

Required training?

We (Nebraska Medicine, other organizations, and AAMC) ›have worked with CITI on modules for all personnel

https://about.citiprogram.org/en/series/covid-19-back-to-campus/?utm_source=sfmc&utm_medium=email&utm_campaign=grand&utm_content=non-newsletter

Free for health-care and academic organizations



Course Content

- COVID-19: An Introduction NEW
- COVID-19: Prevention Strategies NEW
- COVID-19: Moving Forward NEW
- COVID-19: Human Subjects Research NEW
- COVID-19: Safe Lab Reactivation (Animal Research) NEW
- COVID-19: Working with Patients Infected or Suspected with COVID-19 NEW

Funding opportunities

Most granting agencies, including NIH, still open for business and offering new funds

Many have special funding opportunities for COVID-related work

- NIH (NIAID) has a large amount of funds for new competitive COVID work
- Most NIH agencies are also funding supplements to existing grants – both for studies within the aims of the grants, and those that expand those aims
- Can partner with others on their grants if you don't have one available for supplements

At UNMC we instituted College of Medicine Rapid Response grants

Currently Funded Investigators

Title	PI	Department	Mechanism
Determine mechanisms of COVID-19 attributable arrhythmias	Anderson, Daniel	Internal Medicine, Cardiology	COVID Rapid Response
COVID-19 tissue bank expansion under the Clinical Characterization Protocol for Severe Emerging Infections	Broadhurst, M. Jana	Pathology and Microbiology	COVID Rapid Response
Screening of CoVID-19 specific protease based anti-viral inhibitors	Byrareddy, Sid	Pharmacology and Exp. Neuroscience	Lageschulte-Weese Fund
Risk and Outcomes of COVID-19 in Rheumatoid Arthritis: Insights into the Effects of Immuno-modulatory Therapies by Leveraging Big Data	England, Bryant	Internal Medicine, Rheumatology	COVID Rapid Response
Evaluating for gaps in dialysis decontamination protocol and the resulting potential for rapid COVID-19 spread	Franz, Douglas	Internal Medicine, Nephrology	COVID Rapid Response
Deciphering SARS-CoV-2 and Angiotensin Converting Enzyme-2 (ACE2) interacting interphase	Kumar, Sushil	Biochemistry and Molecular Biology	COVID Rapid Response
Preclinical Evaluation of BET Inhibition as a Novel Therapeutic Option for COVID-19	Reid, St. Patrick	Pathology and Microbiology	COVID Rapid Response
Novel Nasopharyngeal Nanofiber Swabs for High Efficiency Capture and Extraction of COVID-19 Samples	Xie, Jingwei	Surgery, Transplant	COVID Rapid Response
Development of a Self-Collection System for Respiratory Pathogen Specimens	Zeger, Wesley	Emergency Medicine	COVID Rapid Response
CNS ACE2 overexpression potentiates neural and cardiovascular events following coronavirus infection in mice	Zucker, Irving	Cellular and Integrative Physiology	COVID Rapid Response

Also funded through NIH and other extramural agencies:
Andre Kalil (Internal Medicine, Infectious Disease)
Paul Fey (Pathology and Microbiology)
Joshua Santarpia (Pathology and Microbiology)
Russell McCulloh (Pediatrics)
Nora Sarvetnick (Surgery, Transplant)
Rebekah Gundry (Physiology)
Gloria Borgstahl (Eppley Cancer Center)

COVID Research Opportunities

The potential to help is vast, and the number of issues continue to grow, spanning basic, translational and clinical research, all types of work from discovery to implementation.

Latest news 17 June — More than one billion people face increased risk of severe COVID-19 (A. Clark et al. *Lancet Glob. Health* http://doi.org/dzk9; 2020). While we talk of age and pre-existing conditions, why do many do OK and some suffer horribly? Blood type? Genetics? Recent NEJM papers.

Lots of information coming out, hard to tell what's real. Preprints – not reviewed. Even when reviewed – Recent retracted studies in Lancet and NEJM.

Politics plays a role in a lot of the information too – hydroxycholoquine, masks, etc.

IDeA-CTR joint activities

National registry, in conjunction with NCATS and the CTSAs

Information about infection, clinical course, large scale N3C:
National COVID Cohort Collaborative Program

Virtual biobank

Database of specimens, clinical information, opportunities to collaborate

Telehealth

Effect on disparities, changes in/post COVID, certain diseases

Rural Health Communications

CTR Trial Networks

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