Principles and Framework Guiding a Phased Approach to Restarting Research Activity
(Adapted with minor modifications from the University of California system and APLU, borrowing liberally from planning at other institutions, such as the University of Washington. We are appreciative of their leadership and willingness to share resources).

Goal: To keep everyone safe, while increasing research activity in a phased approach as safety becomes easier to maintain.

This document refers to research conducted in research spaces, including the physical campus and campus owned/leased spaces, field stations and nature reserves, or with direct contact with individuals (human subjects) anywhere. The document does not cover research that can be done entirely remotely. On-campus research includes physical presence in campus libraries, archives, and museums to access any University material that cannot be accessed remotely, as well as performance work (arts) or other studio access that must be done on campus.

The framework is informed by the following principles and observations.

Principle #1: Follow the cognizant Local, State, and National Public Health Authority directives to shelter-at-home and implement social distancing.

- Observation: Gov. Cooper’s three phase plan for reopening NC calls for 14 days of level or decreasing numbers of COVID-19 cases. The peak/plateau in eastern NC is expected mid-May, which puts Phase 1 beginning June 1 (https://governor.nc.gov/news/governor-extends-stay-home-order-through-may-8-plans-three-phase-lifting-restrictions-based). Resurgence of COVID-19 would lead to reverse phase progression.

Principle #2: Protect the health and safety of the research workforce, emotional as well as physical. Protect the health and safety of our clinical patients and human research subjects.

- Observation: Vulnerable populations will continue to be vulnerable as public increase, and steps must be taken to provide appropriate protection.
- Observation: No researcher should feel they are being compelled to work on campus or in the field during periods of shelter-at-home directives. Safety within laboratories must be rigorously maintained, with adequate access to PPE and other safety related supplies. Environmental Health and Safety (EH&S) must be made aware of all research activities within university spaces. All researchers are to fill out a critical request form for critical research activities during ramp down and recovery from COVID-19 (https://rede.ecu.edu/2020/03/18/covid-19-guidance-for-research-laboratories/). Following approval by the department chair and ADR, the ADR will compile a list of activities in their college that will be sent to their respective Assistant Vice Chancellor for Research in REDE, who will transmit the information to EH&S. Labs will not be authorized for access unless appropriate safety supplies as defined by the level of exposure are available. PIs must identify who among their workforce are considered to be essential personnel (and replacements/backups), and a process is being established whereby researchers who feel uncomfortable about their work situation can
anonymously report their concerns. These reports will be investigated by the Vice Chancellor for Research, and other leadership as appropriate, including Deans and Department Chairs.

- Observation: Limiting access is likely to persist for some time. Vaccine at least 9 months away and likely longer. Serological testing for antibodies is improving and increasing in availability, and while the level of protection afforded by antibodies has not been established, testing could help identify lab personnel that have lower levels of risk of contracting COVID-19.
- Observation: It may be challenging to ramp-up projects that are distributed over multiple sites or depend on international collaborations.
- Observation: Relaxing travel restrictions is necessary before research at distant field sites can return to normal levels.
- Observation: Proactively renewing graduate assistantships will help ensure that graduate student researchers are able to maintain housing off campus and be available to conduct research on non-standard schedules.
- Observation: A number of research projects have successfully and safely transitioned to being fully remote, requiring infrequent or no access to university spaces. While also considered important and essential, they are not considered in the priority tiers discussed below. Furthermore, even if research can be conducted at home, we recognize that this may not be as productive or efficient for some researchers, due to the inevitable distractions.

**Principle #3: Protect the careers of early stage researchers.**
- Observation: REDE is working with Administration and Finance (A&F) to maximize carryforward of startup funding for junior faculty impacted by COVID-19 and ensure the funding is available when laboratories re-open.
- Observation: Promotion and tenure timeline has been extended to accommodate reduced research productivity due to COVID-19.
- Observation: Scholarship in the arts and humanities is often “seasonal”, and inability to access studios, performance venues, archives, and field sites can severely impacted scholarship and career progression.

**Principle #4: Undergraduates are students first, researchers second.**
- Observation: Except under the most exceptional of situations, students should not be mandatory personnel. Students may be critical or essential to research projects and be allowed to participate in approved research, but the students cannot be required to conduct research if doing so places them at risk of contracting or spreading COVID-19.

**Principle #5: Implement a fair and transparent process for granting access.**
- Observation: Clear operational procedures are required to efficiently ramp-up and ramping down research in response to changes in COVID-19 incident within the community.
- Observation: Monitoring and enforcement of compliance with guidelines is important to maintain a safe environment. Effect monitoring and enforcement of social distancing
guidelines requires involvement of the Deans, Associate Deans for Research, Directors (including Library Directors), Department Chairs, faculty, staff, and students.

**Principle #6: Ensure as rapid a research restart as the public health conditions permit.**
- Observation: Eastern NC did not experience the level of COVID-19 that other parts of the US experienced, and subsequently critical research has continued.
- Observation: Smooth ramp-up and acceleration of research activity is likely to entail flexible work schedules, plans for supply chain issues, and preparation of core and shared services in advance of need.
  1. To ensure social distancing requirements and to reduce density of research personnel in university research spaces, consider work shifts or staggered work days and extended EH&S and facilities support.
  2. Supply chain issues on restart. Under no circumstances should safety be sacrificed due to lack of adequate supplies, type, and quality of PPE.
  3. Ensure Core Facilities, Animal Quarters, and Shops are engaged and ready to support ramp up.

**Principle #7: Participate in finding cures and preventions for COVID-19, while increasing safe access to participants for research studies and clinical trials.**
- Observation: Critical Clinical Research has continued, while non-critical research was suspended, which affected many researchers conducting both federally-funded and industry-funded research
- Observation: The clinical research/trial participants, research nurses and research coordinators will respect all precautions established by the Prospective Health, the Health Sciences Division, ECUP, and Vidant.

**Phases and Permitted Research Activities**

The six stage phasing description and tabular representation (see below) is an adaptation of the University of Washington’s research restitution plan, taking into account Gov. Cooper’s 3 phase plan for re-opening NC. The phased description was developed by the University of California VCRs and shared widely with the APLU Committee on Research. Lower phases are more restrictive, higher phases less so.

Public health directives and the current state of the health care and COVID-19 public health response systems determine the timing as to when any given institution in its local context is permitted to move up or down between phases. Before allowing greater researcher access to labs, libraries, and research collections, a plan and rigorous enforcement of social distancing directives is necessary. Elements of such a plan may include (this list is intended to be illustrative, not exhaustive): scheduled/work-shift access; required facial coverings; 6-foot distancing; depending on size of research space and nature of activity therein, density limits
such as 1 researcher/100 ft\(^2\) is justified and approved; temperature checks at start and end of work shift; disinfecting work surfaces after use; and so on.

Example: Pending approval by the Department of Comparative Medicine (DCM), for protection of the animal care staff, all investigators using the animal facilities must wear a face covering anytime they are in the facility. Investigators must supply the masks. DCM will not provide these face coverings; any cover, disposable or launderable facemask will be acceptable. PIs must maintain a low social density as well as social distancing (6 ft preferable). PIs will create a list of which groups are within each room or suite for ease of inter-group communications and coordination. PI groups will create a “Users Calendar” to sign up and monitor their own activities within the rooms or suites. These calendars will be PI developed and maintained.

**PHASED APPROACH**

<table>
<thead>
<tr>
<th>PHASE</th>
<th>EXTERNAL CONDITIONS</th>
<th>SUMMARY &amp; METRICS</th>
<th>CRITERIA</th>
<th>TIME PERIOD</th>
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<tbody>
<tr>
<td>1</td>
<td>Situation unknown and changing. COVID-19 hospitalizations on the rise, testing limited, PPE shortages</td>
<td>Only research deemed critical is allowed Researchers must be designated as Critical or Essential to be on site On site research activity estimated at 5-10% of normal</td>
<td>Research facilities and field stations are closed, except where personnel are required to protect life safety and critical research infrastructure/capability (maintaining cell lines, animal health, instrumentation, etc.). • Minimum staffing. • Authorization for one-time access to faculty offices to pick up books and materials, shut down instrumentation, etc. delegated to deans.</td>
<td>N/A for ECU to date</td>
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<tr>
<td>2</td>
<td>COVID-19 hospitalizations on the rise, testing limited, PPE shortages Initial Stay Home/Stay Healthy directive in place</td>
<td>On-campus access allowed to maintain research capability or prevent catastrophic disruption COVID-19 related research encouraged Researchers must be designated as Critical or Essential to be on site</td>
<td>Research access limited to socially distanced essential personnel only for priority research activities: • Life safety and critical research (as stated above) • “Critical Research”, where a delay would have significant financial impacts or catastrophically disrupt the project or protocol (including avoiding necessary euthanasia of research animal or loss of animal colony). Finish up critical projects - no “new” projects can be initiated.</td>
<td>3/16/20-present (at least thru 7/1/20)</td>
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<tr>
<td>Preparations for next phase</td>
<td>On site research activity transitions to an estimated <strong>15-35% of normal</strong></td>
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|                            | **COVID-19 related rapid response activities (e.g. testing, ventilators, etc.)** **  
|                            | **Prioritize core facilities to support COVID-19 research** **  
|                            | **Field Research: Prioritize seasonal data collection or experiments close to completion who pause or deferral would lead to “catastrophic loss” of research results or delayed graduation. Student participation must be approved and cannot be mandatory.** **  
|                            | **Deadline-driven research activities:** **  
|                            | **Seasonal data collection such as field and agricultural work, experiments close to completion, or deadline driven, whose pause or deferral would lead to catastrophic delay or loss of research results** **  
|                            | **Animal experiments where a delay would result in euthanasia or loss of a colony.** **  
|                            | **Prioritize access for graduate students and postdocs close to completing their degree/term of appointment.** **  
|                            | **Prioritize research for completion of grants with end dates within 3 months ~July 31, 2020 (where funding** |  
| Local COVID-19 hospitalizations flatten, then drop COVID-19 testing capacity increases PPE shortages still exist | **Necessary core facilities are staffed and operational** **  
|                            | **Labs can purchase necessary supplies** **  
|                            | **Social distancing, temperature monitoring, facial coverings, cleaning measures understood and in place (e.g. face coverings for all on-campus personnel required) (See below for specific notes)** |
| Public health authorities & Governor relax restrictions on ‘essential workers’ | **Definition of “critical” relaxed to include time-sensitive research** **  
| Local schools still closed/ teaching remotely for rest of academic year | Explore options for Humanities & Social Sciences **  
|                            | All research that can be done remotely should continue **  
|                            | On site research activity transitions to an estimated **35-50% of normal** **  
|                            | **NC Phase 1, ~June 1** |
**Plans for sudden return to Phase 1 in place**

- Core facilities: restart facilities based on enough ‘customer’ demand (approved projects) where work cannot be done remotely.
- HumSocSci: Utilize existing library services that promote social distancing (eg 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 general, special, and microfilm collections on a limited basis. Some monitored access to offices for those at critical career points (tenure, promotion).
- Field research: expand approvals depending on what current restrictions are in the states and counties where field research is to be conducted.

**Preparations for next phase**

- Core campus functions are staffed and operational to handle increased load (DCM, EH&S, Clinical Trials Office (CTO))
- More core facilities are staffed and operational
- Labs are able to purchase necessary supplies
- Social distancing, face mask, cleaning measures understood and in place

**4**

- Local COVID-19 hospitalizations continue to decrease COVID-19 testing capacity near

**Gradually expand # of people on campus while maintaining social distancing**

- Field Research - expand on case by case basis (depending on local conditions/restrictions at field sites, travel restrictions, ability to travel safely and ability to social distance at field sites)

| 4 | NC Phase 2, July |
| 5 | New cases of COVID-19 are low | Continued expansion of research on campus while maintaining social distancing |
|   | COVID-19 testing is at maximum needed capacity | Critical new on-campus research allowed, but labs/groups only allowed to operate at 70-90% total personnel capacity, with social distancing and face coverings? |
|   | PPE availability normal | All research-related activities that can be done remotely should continue to be, including all seminars, group meetings, etc. |
|   | Further relaxation of restrictions - standards for activity based on ability to social distance |   |
|   | Childcare options available for parents? |   |
|   |   |   |
|   |   | • Field Research - further expand on case by case basis (depending on local conditions/restrictions at field sites, travel restrictions, ability to travel safely and ability to social distance at field sites) |
|   |   | • To be considered by Prospective Health: Could some paused Human Subjects Research resume under limited conditions? |
|   |   |   |
|   |   |   | NC Phase 3, August |

Critical new on-campus research allowed, but labs/groups only allowed to operate at 50-70% total personnel capacity, with social distancing. All research activities that can be done remotely should continue to be, including all seminars, group meetings, etc.

On site research activity transitions to an estimated 50-70% of normal

• Humanities and Social Sciences - allow use of libraries to limited numbers of researchers using hygiene and social distancing protocols. Access to offices can be allowed with social distancing practices in place.
<table>
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<tr>
<th></th>
<th>On site research activity estimated at 70-85% of normal</th>
<th>All types of on site research are allowed</th>
<th>Restart normal research operations, including field research and human subjects research.</th>
<th>Spring 2021?</th>
</tr>
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<tbody>
<tr>
<td>6</td>
<td>Vaccine widely available and used in combination with widespread testing and identification of new COVID-19 cases, with quarantining</td>
<td>On site research activity normal at 85-100%</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>No or minimal state restrictions</td>
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**These include research that: (a) will help deal with the pandemic, (b) has the potential to lead to therapies for Covid-19, and (c) will help the nation recover after the pandemic. Must file a social distancing plan.**

Consideration:

- Department Chairs or College Administration should inform Facilities in advance of increasing operations to ensure HVAC systems are adjusted for increased occupancy and staffing is adequate.
- Facilities will sanitize public areas, including restrooms, lobbies and other common areas, stairs, elevators, kitchenettes. Offices and labs may receive lower attention and frequency. It would be expected occupants would sanitize their labs, offices, conference rooms. Trash removal, vacuuming, mopping might be less frequent.
- Laboratory staff are responsible for disinfecting lab surfaces and equipment, particularly high touch areas, utilizing guidance provided by the CDC.
COVID-19 protective actions must be included in laboratory safety plan, including:
- Monitoring for COVID-19 symptoms (temperature, cough, congestion); refer individuals with symptoms to Prospective Health.
- Physical distancing (no less than 6’ separation, 1 person/100 ft²)
- PPE consideration
- Hygiene - washing hands
- Disinfecting of frequently touched surfaces
- Modified procedures that insure at least one other person in the lab
- More frequent laundering

Develop a checklist for restarting laboratory-based research. Plans should be flexible enough to enable the swift ramp down of research to an earlier phase in response to increasing incidence of COVID-19 in the community or reinstatement of stay at home orders.
  - Plans must comply with physical distancing requirements and should provide for the lowest density of people reasonable to carry out research, and gatherings, including group meetings, and even one-to-one discussions should continue to occur virtually.
  - Work schedules may need to be staggered to maintain low personnel density

Research teams utilizing shared space must coordinate their plans

Any personnel returning from out of state must follow current guidance on 14-day self-quarantine prior to reporting to campus – these individuals should work from their place of quarantine to the greatest extent possible if they are asymptomatic.

DO NOT restart research that requires PPE without first ensuring/acquiring an adequate supply of PPE. Start ordering PPE now, if necessary, to have on hand for restart if current stock on hand is insufficient.

Non-critical research that generates large volumes of hazardous waste and/or necessarily involves chemical, biological, radiation or other hazardous should not restart until Phase 4 at the earliest.

Carrying out research should be limited to employees and registered students – volunteers should not be allowed to conduct research until Phase 6 is reached.

All restart planning must consider the needs of employees/students with current disability accommodations or those who will require new accommodations
• Each PI must think carefully about which lab members will be allowed to return to work initially:
  • Trainees (PhD students and postdocs) should be given top priority due to the need to complete their research projects in a timely fashion.
  • Priority should be given to lab staff who volunteer willingly to return to the lab.
  • Consider the well-being of young trainees and staff who live alone in small apartments and might benefit greatly from the ability to come in to work.
  • Consider the urgency of the work: students or postdocs should be given high priority if they need to complete experiments to meet a thesis deadline, a paper submission, or a grant submission.
  • Consider occasional replacement of personnel in the schedule with new people, to allow as many lab staff as possible to enjoy some progress in their projects.
  • Undergraduate volunteers will not be allowed in our laboratories for the duration of the pandemic.

Stanford Exemplar

PI Lab Level Pre-Start Checklist for Safety Considerations:

• Assess your lab space for ability to meet social distancing guidelines.
• Determine how many people can work safely in your lab at a single time while observing appropriate social distancing.
• Have your department/building/facility representative confirm your space assessment and the number of personnel you are proposing to allow in the space at a single time.
• For shared laboratory work spaces, you must work with the other faculty and facility representatives to establish definitive guidelines for the space.
• If your lab has 5 or more people who will be conducting research, create a lab calendar to track who will work at what time.
  o Share this calendar with the appropriate unit representatives.
  o Post occupancy limits on the door, visible to those outside.
  o Post calendar on the door, visible to those outside.

Lab Startup Checklist

• Before you arrive: review hygiene guidance, PPE decontamination and reuse guidelines, and work alone guidance.
• First Time You Arrive: observe laboratory for safety considerations and proceed with caution.
• Before You Begin:
  o Evaluate Supplies, e.g., PPE availability and cleaning supplies, and evaluate whether you have sufficient supplies to complete the intended work.
  o Evaluate Support Services, e.g., Compressed gasses, House services (compressed air, house gasses, DI water), Glasswash services, Hazardous chemical or
biological waste pick-up, Supply deliveries, Other halted services (lab coats, etc.), Regular custodial services

- Animals and other Core/Service Center Facilities
  - Contact Animal Laboratory Support Services for any animal-related questions.
  - Contact the Core Facilities/Service Centers to ensure they are available to support lab needs.

- Chemicals
  - Check if there has been a chemical spill. Contact EH&S for chemical spill clean-up assistance.
  - Inspect hazardous waste storage. Request EH&S hazardous waste pick-up as appropriate.

- Biologicals
  - Turn on BSCs and disinfect surfaces before conducting lab work.
  - Set-up new aspirator collection flasks if needed.

- Radiation
  - Turn on the Geiger counter and conduct a lab radiation survey if needed.

- Equipment
  - Turn on essential equipment in the lab.
  - If cryogen fill is needed, perform it with assistance from another lab member.
  - If CO2 is needed for incubators, contact your building manager/facility support services for gas orders.
  - Check that equipment restarts and functions appropriately.
  - Use the shutdown checklist as a guide for equipment.
  - Is calibration needed?
  - Do safety devices operate properly?

- General Building (Performed by building/facility units)
  - If needed, update shutdown signage on the building entrance doors.
  - Check mechanical rooms.
  - Check water distillation units.
  - Check shared equipment and shared facilities (chemical storage/waste areas, gas storage area).
  - Communicate with all delivery personnel any changes to time/location for deliverables.
  - Reactivate biohazardous waste pick-up and lab coat laundering services if they were stopped.