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Plan for Phased Continuity of the Research Enterprise

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May 29, 2020

Introduction

The following phased plan to re-open research at UMaine is based on federal, state and UMaine system guidance, and the scientific evidence around COVID-19 infection control. The phases outlined align with the current State of Maine phased reopening plans. In the event of an increase in COVID-19 cases in the state, or changes to state or UMS guidelines, these phases can be reverted back to an earlier phase (as appropriate given public health concerns). Numerous research projects at UMaine are time-sensitive, essential to state and national interests, and directly impact COVID-19 responses. All plans for re-starting research activity will be submitted to the VPRDGS's Research Continuity Task Force, along with a Hierarchy of Controls (HOCs) plan and a description of how COVID-19 risk is being mitigated, whether research activity is on campus or in the field. The task force has worked closely with the Emergency Operations Center (EOC), University Police, Safety Management, and Facilities Management, as well as campus leadership and faculty input, to provide the following proposal.

Guiding Principles

- Follow the cognizant Local, State, and National Public Health Authority directives to shelter-at-home and implement social and physical distancing to minimize disease spread and exposure when these directives are active.
- Protect the health and safety of faculty, staff, students, the public and human research subjects, using science-based evidence in establishing protocols.
- No researcher, staff member or student should feel they are being compelled to work on campus or in the field during periods of broad shelter-at-home directives.
- Protect the educational trajectory of graduate student projects and the careers of early stage researchers.
- Implement a fair and transparent process for granting access to research activities.
- Ensure a research restart as the public health conditions permit, enabling UMaine to advance learning and discovery through excellence and innovation to aid in the recovery of the state and nation

Notes

- Contingencies: If and when UMS and/or State health officials provide limiting/restrictive guidance that are out of alignment with current research activities, research efforts will drop back to lower phases as appropriate and will be ramped up when the guidance changes. *Thus, researchers must maintain contingency plans and be prepared to halt all activities on short notice in case this becomes necessary.*
- Principal Investigators remain responsible for providing direction and oversight of their projects, labs and/or research sites, and personnel including graduate students, postdoctoral fellows, and staff.

- Ability to ramp up research is contingent upon availability of required PPE and readiness of Safety Management, Facilities Management and other relevant UMS/UMaine support functions and status of UMS/UMaine guidance.

Phased Research Continuity

Phase 0: Maintain Critical Research Infrastructure (*March 24 – May 6, 2020*) *Governor’s Stay Safe at Home Order*

On-campus and fieldwork research and scholarly activity limited to *essential activities* and require approval. Essential research & scholarly activity limited to:

- Research and scholarly activity that is critical to the health of the public
- Research and scholarly activity of national or state importance
- Research and scholarly activity that involves the protection of valuable resources such as cell lines, animal lines, instrumentation requiring regular attention, etc. which cannot be shut down and must be kept going at a maintenance level
- Research and scholarly activities that directly support current Business and Operations designated as critical infrastructure in the Governor’s mandate; *general university research and scholarly activities in those designated areas would not typically qualify as “essential”*.

Phase 1: Prepare to Increase Research Activities (*May 7th, 2020 – Present*) *Governor’s Reopening Stage One – May 2020*

CURRENT STATE: Effective May 7, 2020: In in response to [Governor Mills’ Stay Safer at Home Executive Order, plan to gradually restart Maine’s economy \(PDF\)](#), the Chancellor’s extension of the [work from home directive](#) through May 31st, and the [limiting of in-person events, group gatherings, summer camps, day camps or other such in-person activities on its campuses or under its auspices at non-university locations through June 30, 2020](#), essential research and scholarly activity (that require working on campus or in the field) was expanded to include two additional criteria:

- Research and scholarly activity necessary to avoid prematurely stopping an experiment or research process in progress that would result in an irrecoverable loss.
- Research and scholarly activity which are necessary because experimentation or related activities for the coming year are tightly linked to seasonal phenology and even a short delay will result in long term impact.

Requests should continue to be submitted using the [Research & Scholarly Activity Request Form](#) that has been in place since March 24th. The request form requires a justification for why the activity cannot be delayed, why it is essential research as defined above, information regarding the associated research personnel (including students) and the steps that will be taken to ensure the safety of participants during the COVID-19 pandemic.

Coordination: Requests approved by OVPRDGS will continue to be shared with Safety Management, Facilities Management, and University Police; individuals may be contacted by one or more of these offices if more information is needed.

Safety: These research efforts, once approved, should be conducted with minimal numbers of personnel (less than 10), appropriately distanced, and in staggered time schedules in a location, for the minimum amount of time necessary to complete the approved on-site work. All personnel **must** follow available [CDC guidance](#) and take basic preventative measures (which include proper use of face coverings, distancing procedures, disinfection, hand washing, etc.) to avoid potential exposure to or infection from coronavirus. Further, the [UMS Safety Management portal](#) (requires an @maine.edu log-in) has updated guidance and safety checklists for safely returning to work spaces.

Planning: During this phase, the [COVID-19 Research Continuity Task Force](#) is working to draft recommendations for a phased research ramp up which aligns with the Governor's plan and the various UMS/UMaine plans being developed to ramp up operations as safely and controlled as possible.

RAMP UP DURING Phase 1 (MAY):

Require submission of a more structured COVID-19 Safety Plan

Essential research & scholarly activity requests require submission of a more structured COVID-19 safety plan, developed in accordance with the guidance outlined below in the COVID-19 Safe Research Operation Checklist. [*Stakeholder input? Timing? Template? Rollout?*]

Additional Phase 1 Elements (These were not implemented prior to June 1st, but will be enacted if we must rollback to Phase 1: Expand essential research & scholarly activity to allow immediate time-limited access to on-campus research labs in order to generate targeted research to support near-term grant or contract deadlines, resubmissions, competitive renewals, annual reports, response to manuscript or other reviewer comments, and other similar needs, where work can be completed safely and with a minimal number of staff. This phase should also include limited reopening of work areas and labs to assess readiness and needs to restart, check, and restart equipment, and identify needed supplies. *This would not be a reopening of the labs and research areas to resume usual research or normal operations.*

Project Criteria for Limited Research Activity Approval:

- Work can be conducted with a limited number of individuals in the lab at any one time, and with limited working hours
- The work is necessary to produce data in support of deadline driven activity (as listed above)
- Request includes a COVID-19 safety plan in accordance with the guidance outlined below in the COVID-19 Safe Research Operation Checklist and a Hierarchy of Controls (HOC).

Phase 2: Limited increase in on-site activity (June 1st, 2020)

Governor's Reopening Stage Two – June 1st, 2020

All research that can be done remotely should continue to be done remotely. Gradually expand the number of people on campus while maintaining physical distancing and other risk reduction procedures.

- Personnel density increased in a manner that is consistent with federal, state, and UMS guidelines and directives. Temporal and spatial distancing should be maintained, with precautions like face coverings when they cannot be maintained.
- Prioritize access for graduate students and postdocs close to completing their degree/term of appointment.
- Prioritize research for completion of grants and contracts where no cost extensions are not feasible.
- Prioritize research activities which are required to maintain employment of critical research personnel.
- Begin re-breeding laboratory animals, expansion of cell lines, plant propagation, etc.
- Research Centers: restart facilities based on sufficient 'customer' demand (approved projects) where work cannot be done remotely and those facilities have approved safety protocols, PPE, tracking mechanisms in place.
- Allow access to offices for graduate students on application, 1-3 days/week. Must maintain physical distancing and max occupancy per building (scheduling software?)
- 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 physically distance at field sites)
- Humanities, arts and social sciences research that requires access to single occupancy spaces (e.g. office, private studio), and allow use of libraries, archives, labs, and collections to limited numbers of researchers using hygiene and physical distancing protocols. Close proximity training such as a clinical environment/ lab/ performance space/ practice/ studio element [or other special delivery mode (lab training, graduate mentoring)] requires face coverings, hand hygiene, disinfection.
- New requests should continue to be submitted using the [Research & Scholarly Activity Request Form](#) that has been in place since March 24th, and include a COVID-19 safety plan in accordance with the guidance outlined below in the COVID-19 Safe Research Operation Checklist, as well as a Hierarchy of Controls (HOC).

Other activities to consider including at this phase:

Explore options for expanded on-campus library research options. Prioritize researchers with deadlines (tenure, book contracts, etc.).

Phase 3: Expanded increase in on-site activity (Date to be Determined) ***Governor's Reopening Stage Three – July - August 2020 (anticipated)***

All research that can be done remotely should continue to be done remotely. Gradually expand the number of people on campus while maintaining physical distancing and other risk reduction procedures. Before conducting home lab experiments that require lab safety controls, please contact your supervisor to discuss opportunities to conduct those labs on campus, potential deferral, or other options.

- Personnel density increased in a manner that is consistent with federal, state, and UMS guidelines and directives.

- 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)
- Access to offices allowed generally, with attention to physical distancing, hand hygiene, and cleaning
- Access to libraries, collections, studio spaces, performance spaces and labs with physical distancing and disinfection of materials.
- New requests should continue to be submitted using the [Research & Scholarly Activity Request Form](#) that has been in place since March 24th, and include a COVID-19 safety plan in accordance with the guidance outlined below in the COVID-19 Safe Research Operation Checklist.
- For research labs/units (or facilities) with an approved COVID-19 safety plan, any subsequent Essential Research activity within the research unit should be tracked, including personnel, days/hours worked and justification of Essential Research activity. New request forms are not required for each Essential Research project or modifications to previously-approved projects covered within the COVID-19 safety plan. Designated staff members for the lab, research program, or research area are responsible for implementing, monitoring, and ensuring lab compliance with their COVID-19 Safety Plan and University requirements, and ensuring appropriate PPE and lab-specific cleaning supplies are available and onsite. *Could this approach be adopted in at some stage in Phase 2? Approved personnel with other approved tasks*

Other activities to consider including at this phase (From Berkeley and UNH)

- *Could some in-person Human Subjects Research resume under limited conditions?*
- *Can humanities, social science, and arts research & scholarly activity involving direct interpersonal interactions or engagement resume, and if so - conditions?*

Phase 4: Transition to Research as Usual (Date to be Determined)

Governor's Reopening Stage Four – TBD

- Resume normal research operations, including open museums and libraries, field research and human subjects research with appropriate protections in place.
- On-site activity no longer requires approval

Sources and References

This proposed plan was prepared by drawing extensively on resources developed and implemented by several institutions and directly relate to the staged reopening steps outlined by Governor Mills (<https://www.maine.gov/governor/mills/>), as well as guidance provided by Maine DHHS and CDC (<https://www.maine.gov/dhhs/mecdc/infectious-disease/epi/airborne/coronavirus.shtml>), and DECD (<https://www.maine.gov/decd/>).

The following other Institution plans were also employed extensively:

- University of Connecticut (<https://ovpr.uconn.edu/covid-19-guidance-for-the-uconn-research-community/phased-process-to-reopening-research-at-uconn-and-uconn-health/>)
- University of California Davis (<https://research.ucdavis.edu/guidelines-for-uc-davis-research-ramp-up-ramp-down-april-23-2020/>)
- University of California, Berkeley (Working document shared with APLU Council of Research Members)
- Cornell University (<https://researchservices.cornell.edu/news/coronavirus-research-continuity-guidance>)
- University of New Hampshire (<https://unh.box.com/s/rdxuazgfij58x0dvvbwa07nsd7qu537vv>)

Criteria for Returning to Work Safely & When to Self-Isolate

Current as of 5/29/2020

Scenario 1	An employee is tested for COVID-19, is positive, and wished to discontinue home isolation: Employee must stay out initially for 15 days <u>AND</u> until these criteria are met: <ul style="list-style-type: none">• At least 10 days have passed since symptoms first appeared <u>AND</u>• At least 72 hours (3 days) have passed since recovery, defined as resolution of fever without fever reducing medications <u>AND</u> improvement in respiratory symptoms (cough, shortness of breath)• CDC link: https://www.cdc.gov/coronavirus/2019-ncov/hcp/disposition-in-home-patients.html
Scenario 2	Someone in the employee’s household is tested for COVID-19: If test comes back positive – <ul style="list-style-type: none">• Stay out initially for 15 days and if no symptoms after that period, return to work.• If symptoms appear, contact healthcare provider. When wishing to discontinue self-isolation, see Scenario 1. If test comes back negative –The employee can return to work.
Scenario 3	Someone in the employee’s household has possibly been exposed to COVID-19: <ul style="list-style-type: none">• Contact medical provider for medical advice.• Encourage employee to stay out of work for at least 14 days to observe symptoms.• If symptoms appear, refer to guidance in Scenario 4.
Scenario 4	An employee is exposed to a person with confirmed positive COVID-19: <ul style="list-style-type: none">• Contact medical provider for medical advice.• Stay out initially for 15 days and, if no symptoms appear after that period, return to work• If symptoms appear, contact medical provider. When wishing to discontinue home isolation, see Scenario 1.• CDC Link: https://www.cdc.gov/coronavirus/2019-ncov/if-you-are-sick/quarantine-isolation.html
Scenario 5	If symptomatic but no test has been administered to confirm: <ul style="list-style-type: none">• Employee is encouraged to contact their medical provider for guidance.• Sick and symptomatic employees should not be working.
Scenario 6	If an employee traveled outside the State of Maine: Self-isolation is required for at least 14 days <u>AND</u> : <ul style="list-style-type: none">• If no symptoms appear, may return to work.• If symptoms appear, employee is encouraged to contact their medical provider for additional guidance.
Scenario 7	If employee is not symptomatic but concerned and otherwise doesn’t fall into one of the scenarios above: Employee is encouraged to contact their medical provider for additional guidance.

COVID-19 Safe Research Operation Checklist

All work conducted by UMaine employees must comply with guidance provided by UMS Safety Management which can be found in the [Safety Management Portal](#).

Safety Management provides a Hierarchy of Controls (HOC) Task Assessment worksheet (and HOC overview presentation) as a tool for laboratories and departments to exercise due diligence in regards to OSHA. It offers occupational safety considerations to guide departments and operational units in their reopening processes. These Hierarchy of Controls are to be used to help a department fulfill its need to address hazards in the workplace.

Additionally, the following procedures are based in sound scientific practice to avoid the spread of SARS-CoV-2, the virus that causes COVID-19. They are provided as a best practice process to be used as a starting point for researchers crafting a safe research plan under the current COVID-19 pandemic.

- SARS-CoV-2 is spread even by individuals who are pre-symptomatic, asymptomatic, or may never exhibit classic symptoms like fever. Therefore, symptom checks like temperature taking have been shown to miss more than 50% of COVID cases, and the best procedures involve proactive precautions by assuming that you may be infected, and others around you may be infected. The incubation period of SARS-CoV-2 is 2-14 days (median of 5 days), with highest viral shedding up to a couple of days prior to symptom onset. *Therefore, people are highly contagious before exhibiting any symptoms.*
- Maintaining social distancing outside of labs/campus. If known interaction with COVID+ patient, or if you are symptomatic based on CDC list of symptoms or doctor diagnosis, must report to supervisor and quarantine prior to return
- Physical distancing of at least 6ft in workplaces at all times, to avoid droplet spread of SARS-CoV-2 (such as from cough, sneeze)
- Proper PPE, which might mean mandates for cloth masks when around others and unable to maintain distancing
- Avoid touching your face (virus particles gain entry via mouth, nose, eyes), no hugging/touching other people, use elbow/tissue to cough or sneeze
- CDC/WHO hand washing procedures (posted signage), available hand sanitizer (60-70% EtOH) when needed (esp. when not near a sink)
- Staggered work schedules to limit number of people in a given work space, continue any work remotely when possible
- Disinfect regularly any commonly touched surfaces (10% bleach, 70% EtOH, or [EPA-Approved Disinfectant](#)). SARS-CoV-2 can live on surfaces for hours to days if not washed away or killed by disinfectant.
- Educate the workforce about SARS-CoV-2 and COVID-19 and provide guidance on best practices for social distancing outside the workplace (e.g., procedures when getting gas/groceries).
- Continue the policy of no group meetings (such as lab meetings) or in person meetings; hold these instead via Zoom

- If anyone is returning to campus from out of state, a 14-day quarantine will be required prior to returning to work, which represents the period after recovery when patients may still be contagious.
- Guidance as building occupancy increases, to emphasize face-coverings and 6ft+ physical distancing when entering/exiting a building, using restrooms or common spaces (shared equipment rooms, communal kitchens) or moving in hallways to avoid potential interpersonal interaction.

Appendix

UMaine PIs need to develop a safety checklist to safely restart and conduct their research under the current COVID19 conditions. The safety checklist should follow the cognizant Local, State, and National Public Health Authority directives to shelter-at-home and implement social and physical distancing to minimize disease spread and exposure. The aim of this exercise is to protect the health and safety of faculty, staff, students, the public and human research subjects, using science-based evidence in establishing protocols. No researcher (faculty, staff member or student) should feel they are being compelled to work on campus or in the field during periods of broad shelter-at-home directives.

All research activities that cannot take place at home, including lab based research and field research, need to be approved. Requests should be submitted using the [Research & Scholarly Activity Request Form](#). The request form requires a justification for why the activity cannot be delayed, why it is essential research as defined above, information regarding the associated research personnel (including students) and the steps that will be taken to ensure the safety of participants during the COVID-19 pandemic.

This example document is based on documents that have been developed by the following Centers and research groups: ASCC, VEMI, Townsend and Tajvidi. The checklist should be adapted to suit the needs and conditions of each research lab.

Before Re-Opening

- Research plan has been approved by UMaine (<https://umaine.edu/research/covid-19-on-campus-research-reporting/>)
- Hierarchy-of-controls (HOC) document has been filed with UMaine (<https://mycampus.maine.edu/group/mycampus/safety-environmental-management>)
- Elimination, substitution, engineering and administrative controls, as outlined in the HOC document, have been put in place
 - e.g. Plexiglass shields for separating work benches
- Personal protective equipment and other required preventative materials are in place
- Disinfectants and cleaning materials are in place
- High risk faculty, staff and students have been identified and will work from home
- All researchers (faculty, staff and students) understand that lab work is voluntary during the phased reopening of the UMaine research facilities
- All researchers (faculty, staff and students) have received COVID19 safety training
- All researchers (faculty, staff and students) have signed Safe Conduct of Research agreement
- COVID19 signage has been posted at lab entrances and exits (see attached examples)

Scheduling Research Activities: Spatial and Temporal Distancing

- The Principal Investigator is responsible for the allocation of lab use to comply with physical distancing guidelines
- Work schedules are staggered to limit the number of people in the research facility
- Only researchers named in the approved research plan are allowed access to the research facility
- A calendar is used to manage lab occupancy and reserve equipment. Examples include a Google Calendar, Google Sheets, Office 365, etc.

- ❑ Lab space is allocated such that each researcher has at least 120 square feet of lab space to themselves (corresponds to a circle with $r = 6'$)
- ❑ Researchers sign in on the online scheduler when they enter the lab, and sign out when they leave the lab

Safely Conducting Research

- ❑ Work should be done remotely to the greatest extent possible
- ❑ Meetings should be conducted virtually, instead of in-person
- ❑ Researchers must monitor themselves for [COVID19 symptoms](#)
- ❑ If a researcher is symptomatic, they must not come to work, call their doctor, and notify their supervisor (or the research group if the PI)
 - ❑ See attached document “Criteria for Returning to Work and When to Self-Isolate”
- ❑ Researchers must wear face masks around others in the community areas, labs, hallways, etc.
 - ❑ A researcher does not need to wear a face mask while working alone in a lab
- ❑ Researchers who cannot wear a face mask or choose not to wear a face mask should work remotely
- ❑ Work surfaces and high-touch surfaces and other frequent contact surfaces (door handles, etc) must be disinfected regularly. They should be wiped down with a disinfectant solution (10% bleach + 70% ethanol or EPA approved disinfectant) or disinfectant wipes
- ❑ Equipment, sample holders, etc., must be disinfected after use

Safe Behavior - General

- ❑ Washing hands for at least 20 seconds with soap and warm water is more effective at killing the virus than hand sanitize
- ❑ Avoid touching your face (virus particles gain entry via mouth, nose, eyes)
- ❑ Do not hug or touch other people, unless of your own household
- ❑ Cough or sneeze into the crook of your elbow, not into your hands
- ❑ Maintain social distancing, with at least 6' of distance from others
- ❑ Wear face coverings at all times in public spaces, such as hallways, entrances and exits, stairs, etc.
- ❑ Bathrooms: Wait outside if there is a person in the bathroom
- ❑ Elevators: Wait for the next elevator if there is a person in the elevator
- ❑ If a person is returning to campus from out of state, a 14-day quarantine will be required prior to returning to work, which represents the period after recovery when patients may still be contagious