

JHU Return to Research Guidance

Phase 1 Guidance: Updated July 14, 2020

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Introduction and Executive Summary

This document represents of the final set of recommended guidelines for a gradual, phased reactivation of the full breadth of research activities at Johns Hopkins University— including laboratory-based, library-based, and human subjects research—in a manner that supports the safe return to campus of increased numbers of researchers and support staff.

These guidelines are based on detailed recommendations and analysis from the 2020 Research Workgroup, led by Vice Provost for Research Denis Wirtz, and has been shaped throughout its development by significant input and review from research faculty, postdoctoral fellows and graduate students, undergraduate researchers, and school leadership. Draft guidelines were posted to the university community on May 19, with [a virtual town hall](#) held on May 20 to present the main elements and take questions, hosted by Denis Wirtz and Antony Rosen, vice dean for research at the School of Medicine, and moderated by Stephen Gange, executive vice provost for academic affairs. Over 1,900 people tuned into the town hall and submitted nearly 100 questions, answers to which have been incorporated here. We also received more than 60 questions and comments related to research via the [2020 Planning feedback page](#). They were fielded by members of the Research Workgroup, both individually and via a [public research FAQ](#). We have taken care, in the pages that follow, to address outstanding questions and refine research guidance based on the broad community input we received.

Johns Hopkins University's overall plan for resumption of on-campus activities is structured in phases. There are three main phases, which conceptually parallel those in the State of Maryland's plan, the [Roadmap to Recovery](#). This document was prepared in advance of the university's move to Phase 1 of its plan.

The focus of this document is on near-term measures: those enabling movement of research activities into Phase 1 of the university's plan. While it is based on current knowledge, we anticipate that its guidance will evolve along with our understanding of the status of the pandemic and our experience in the safe resumption of research activities. Although there is a consensus from our peers that certain types of research, such as laboratory research and core activities, can be conducted in a manner that poses low levels of risk, we plan to resume research activities gradually so that we can be certain of our capacity to employ the protective measures that will be necessary. We thus caution that not all research labs will be able to open at the same time, nor will all labs be able to open with the same capacity. Please note that this document now contains full guidance on human subjects research (Part Five)

Of importance, the resumption of on-campus research activities in Phase 1 will be limited only to those activities that actually require a person to be on campus/in the lab. Any and all research work that can be accomplished at home via telework should continue to be done at home, and people should only be on campus for the time periods necessary to accomplish required on-campus work.

This document is meant to integrate seamlessly with other university guidance, divisional planning efforts, and critical cross-cutting university functions to safely support full resumption of research and other activities on campus, including facilities; Health, Safety, and Environment (HSE); health and wellness (including testing and contact tracing); human resources; information technology; transportation; and security. Those issues are at most touched on here, and are covered more fully in companion documents, available on the [JHU Planning website](#).

Our guidance in the following pages is organized into top-line findings and recommendations, followed by detailed recommendations organized into thematic sections: Health & Safety; PI Preparation; Lab Personnel; Libraries, Archives and Museums; and Clinical and Human Subjects Research. The principles laid out here apply to all university locations (e.g., Homewood, East Baltimore, DC, JHACH), noting that all actual operations should reflect local guidance and conditions. **This is a living document and as such will be updated based on developing circumstances, changed or increased understanding of the virus, and governmental and public health guidance.**

Guiding Principles

The development of this plan is based on the following basic Guiding Principles, which complement the overall [guiding principles articulated by University leadership](#) earlier in May:

- Our highest priority is to put health and safety first. We will implement physical distancing and the use of personal protective equipment (PPE) in the controllable environments of our laboratories, libraries, and associated spaces. And we will pay special attention to the needs of vulnerable populations, making reasonable accommodations through Human Resources and Disability Services where warranted.
- We will adopt an evidence-based risk management approach to the COVID-19 challenge, and our decisions will be guided by state and local public leaders and health experts. We will abide by federal, state, and local restrictions and the most current OSHA, CDC and related government guidance.
- As we enter Phase 1, personnel should be on campus / in a laboratory only to perform necessary experiments and other research activities that require physical presence; **all other work should continue to be performed at home.**

We will approach the scale-up thoughtfully, allowing for expansion and adjustments when they make sense. If conditions worsen, either locally or regionally, another rapid research scale-back may be required.

Phases

Our approach calls for a multiphase resumption of activities consistent both with state and local restrictions and our own our public health experts' assessment of the COVID-19 pandemic and the complexities inherent in protecting the health and safety of our students and postdoctoral fellows (collectively, "trainees"), faculty and staff. While our phasing seeks to align conceptually with Maryland's phasing, the alignment is not automatic and there may be many periods when the university cannot, for public health and safety reasons, be in the same phase as the state, just as not all counties in the state may be in the same phase at the same time. **The university is moving to Phase 1 of its research recovery plan on June 15**, in which the resumption of non-COVID-19 research activity may begin. Below is a summary of restrictions that will be applied during our anticipated phases of recovery.

Phases of Research Resumption

	Minimal Density – COVID-specific research only Phase 0 (current)	Low Density – Increase research activity Phase 1	Medium density – Expanded scope of research operations Phase 2A/2B	Near 100% density – Return to full research operations Phase 3
Primary work/lab	Minimal on-campus presence for research operations; still remote when possible; approved PI plan in place for essential research	Minimal on-campus presence for research operations; still remote when possible; approved PI plan in place	Remote preferred for those at higher risk; approved PI plan in place	Telework still utilized where possible; new hygiene practices as the norm
Building access	Highly limited	Limited, with possible shift work; swipe access	Wider access; tracking with apps	Open access
Occupancy of shared offices	No	No	Yes, with appropriate distancing	Yes
Density of lab spaces	Minimal	Managed through approved PI plans; 1 person per 400 sf of gross lab area	Managed through approved PI plans; capacity limits will be revisited	Near full capacity
Group Meetings	None	None	Constraints on meeting size and use of general space align with university policy	Larger meetings; normal limits on room occupancy
Hygiene – follow CDC guidelines	Strict distancing, required face covering, minimal lab density, frequent hand-washing	Strict distancing, required face covering, minimal lab density, frequent hand washing	Required face covering and strict distancing	Recommended face covering; some potential lessening of distancing requirements
Cleaning	Lab-specific as per Phase 0 plans.	New cleaning protocols in place; no shared surfaces, such as desks, keyboards, phones; common areas closed	Cleaning protocols remain; limited shared surfaces; some common areas reopen with distancing rules	Routine cleaning of labs and common areas
Health monitoring/ Testing	Testing and contact tracing of symptomatic trainees and employees only	Testing and contact tracing of symptomatic trainees and employees only	Testing and contact tracing of symptomatic trainees and employees (TBD)	Vaccine, effective therapeutics, or substantial immunity amongst community
Undergraduates	No	No	No/Possibly*	Yes
Graduate students/ Postdoctoral fellows	Only for COVID-related research	Yes	Yes	Yes

*subject to university decision to resume on-campus undergraduate education

Phases of Research Resumption, continued

	Minimal Density – COVID-specific research only Phase 0 (current)	Low Density – Increase research activity Phase 1	Medium density – Expanded scope of research operations Phase 2A/2B	Near 100% density – Return to full research operations Phase 3
Clinical/Human Subjects	Only for COVID-related research	Therapeutic trials / interventional studies, with potential for direct benefit to study participants conducted in Johns Hopkins-managed facilities only	Phase 2A: Studies with limited or no prospect of direct benefit to study participants and minimal participant interaction in terms of duration and activity (e.g., biospecimen collection, limited interaction clinical assessments). Phase 2B: Studies with limited or no prospect of direct benefit to study participants and significant participant interaction (e.g., potential aerosol generating procedures or those requiring close contact for extended periods of time).	All other protocols involving in-person interaction
Libraries	Some digitizing of materials; curbside dropoff of books to be returned; begin curbside pickup of circulating materials	JHU library, archive, and museum staff continue to digitize needed materials for researchers; curbside dropoff and pick up of circulating materials; in-person access to non-circulating collections for small #s of trainees and faculty	Continued digitization and in-person access for JHU classroom instructors; as slots and staffing are available, researchers and instructors from the broader community	Non-JHU affiliates who rely on JHU collections for any other purpose; use of the space in research collections for inperson classes and the general public

Part One: Health and Safety

Guidelines around occupancy density, expectations for social distancing, use of face coverings or masks and other PPE, cleaning schedules, changes in facilities and space, and foot traffic management are being established in coordination with the Health and Safety Workgroup and JHU Facilities and HSE guidelines.

1. Every individual returning to campus for research will be required to adhere strictly to social distancing and use face coverings.
 - a. **Social distancing:** Involve minimal numbers of individuals returning to laboratories and libraries during Phase 1. Adhere to newly established maximum occupancy rates for each designated space, based for now on an assumption of 400 gross square feet per person in the lab. Mark spaces to reinforce need for space separation.
 - b. **Face coverings:** The university will provide face coverings for JHU affiliates, who may also elect to use their own face coverings. These should be worn at all times while on campus, both indoors and outdoors, unless inside a single-occupancy office with a closed door or while eating or drinking at an appropriate distance from others. Cloth face coverings must only be worn for one day at a time, and must be properly hand washed or laundered before subsequent use. Exceptions to the requirement to wear face coverings at all times while outdoors will be made for individuals whose employment requires they work outside full-time (e.g., grounds staff, exterior painters, security personnel, etc.). They will need to wear face coverings when interacting with others or when unable to practice social distancing..
2. Laboratories and libraries must engineer their facilities to improve safety through frequent cleaning, clear signage and other guidance, and provide all personnel with information on how to report concerns.
 - a. **Cleaning:** Work with the school's facilities team to develop a plan for regular cleaning and disinfecting of laboratory space—including by third-party cleaners, where applicable—that follows the HSE protocol for cleaning.
 - b. **Physical signage:** Facilities will post safety signage with information about where to report safety concerns.
 - c. **Common spaces and shared equipment:** Provide specific guidance on using common spaces and shared instrumentation, based on guidance from the university and HSE.
3. Laboratories, core facilities, and libraries should maximize capacity while minimizing occupancy rates. Expect return at significantly decreased density compared with normal operations, and return at different times for different research spaces.

Part Two: PI Preparation

Phase 1 lab readiness is based on a PI-driven approach, with school and university oversight. PIs are the most knowledgeable about the details of their research space, workflow, personnel, shared instrumentation, and program priorities. The guidance herein is developed for initial reopening and is intended to align with the resumption of low-risk activities. Later phases of reopening are not addressed in these recommendations.

4. Every laboratory must have an approved reopening plan as well as a shut-down plan (in the event of increased infection rates) in place before occupancy. Approval of reopening plans is by the relevant Dean's Office.
5. Wherever possible, work on all projects will be commenced to enhance research momentum and resume research training for all, but not all projects can or should commence at the same time.
6. All lab personnel and PIs will be expected to fully comply with university guidance and lab-specific protocols, and personnel will be provided easy means for reporting violations.

Part Three: Lab Personnel (e.g., postdoctoral fellows, graduate students, technicians)

Guidelines must make shift assignments fair and flexible. Safeguards to avoid coercion and retaliation must be in put in place.

7. Consistent and equitable consideration will be given to employee and trainee needs.
8. PIs must provide clear communications to continually inform employees and trainees, make them aware of formal channels to report concerns and/or mistreatment, and create a culture of flexibility and protection.
9. Effective training and reinforcement of new COVID-19 related safety measures must be implemented in each lab.

Part Four: Libraries, Archives and Museums

Encourage digital access to non-circulating materials for both research and teaching where possible. Allow curbside drop off and pick up of circulating collections. Accommodate as many requests as possible from graduate student and faculty researchers and course instructors to access noncirculating collections in keeping with safety protocols. The Libraries will address the following:

10. Organizing space for safe utilization
11. Safe transfer of materials
12. Digitization of materials
13. In-person access to noncirculating materials
14. Borrowing and return of circulating books and materials

Part Five: Clinical and Human Subjects Research

Clinical and human subject research will require a gradual, phased reopening that allows for a safe, systematic approach to restarting research. The human subjects research plan addresses:

15. In-person research interactions in Johns Hopkins clinical facilities
16. In-person research interactions in non-clinical facilities managed by Johns Hopkins
17. In-person research interactions outside of Johns Hopkins-managed facilities, in the U.S. and internationally, including community-based facilities and in participant homes

Part Six: Undergraduate Research

Many JHU undergraduate students state that the most important reason they chose to come to Hopkins is access to diverse research experiences. Continuing to provide laboratory access to our undergrads would fulfill that expectation, but some limitations will be necessary.

18. There will be additional undergraduate safety procedures.
19. There will be phased integration with other lab personnel.
20. The university will continue to value research for undergraduates.

Part Seven: Resuming Research in Non-laboratory Settings

On July 14, the university modified its Return to Research Guidance to allow researchers who do not work in labs, such as humanists, social scientists, and computational researchers, to apply for approval to work on-campus at certain times if it is necessary for their progress. Typically this will be in single offices, but it could potentially be in spaces that meet the stated density requirements.

Part One: Health and Safety

Multiple, interconnected layers of management of campus services, specific buildings, libraries, individual laboratories and core facilities/shared resources are required to execute a successful research ramp-up in a safe manner. The guidance below is offered to help ensure health and safety, and will change as public health guidance and understanding of the virus change. In creating this guidance, special attention has been given to the concerns of those who may be at greater risk of contracting COVID-19. Please note that these and other elements of university health and safety not addressed here are being addressed through other workgroups, whose draft guidance can be found on the JHU Planning website.

The guidance below is also subject to reasonable accommodations and adjustments. Faculty, staff, students, and other trainees who fall within the CDC's definition of a "vulnerable person" for COVID-19 will be able to request reasonable accommodations to their work or learning environment through OIE/Disability Services. Individuals who do not fall within the CDC's COVID-19 guidelines for a "vulnerable person" but have other concerns about returning to campus due to their individual circumstances (such as household members who may be at higher risk) will be able to contact their departmental or divisional human resources manager to discuss their concerns and whether adjustments to their work environment may be made to address them. Information on the accommodations and adjustments processes is available in the [Return to Campus Guide](#).

1. Every individual returning to campus for research will be required to strictly adhere to social distancing and use face coverings.

It may be appropriate to also issue reminders about distinguishing between laboratory PPE and appropriate precautions (e.g., face coverings) for commuting to and from campus.

Spaces within an individual building must be organized in a manner that ensures safe social distancing. Laboratories and libraries should, in accordance with university guidance:

- Limit building access points and elevator occupancy
- Designate up and down staircases
- Establish access control to buildings— for example, swipe in / swipe out access at main entrances for buildings so equipped—with continued limiting of the number of entrances to a building.
- Add signage and floor markings at common spaces to ensure social distancing
- The use of additional PPE or other safety devices (e.g., air-flow-controlled hoods) may compensate for reduced social distancing in certain situations where social distancing is not practical or safe for the nature of the work. Such exceptions will need explicit approval from HSE.

2. Laboratories and libraries should engineer their facilities to improve safety through frequent cleaning, clear signage and other guidance, and provide information on how to report concerns.

Each lab is responsible for regularly cleaning and disinfecting laboratory space. Facilities and HSE will provide guidance on critical items that need to be performed and provide disinfectants as needed (Appendix D).

- Deep cleaning should be done between shifts.
- Lab surfaces should be cleaned with products that are EPA-approved for use against the virus that causes COVID-19. A list of products is available [here](#).
- Follow the manufacturer's instructions for all cleaning and disinfection products (e.g., concentration, application method and contact time).
- Clean handles for sinks, DI water systems, cabinets (including acid and flammable liquid), fume hood sashes, lab benches, phones, and freezer and incubator doors.

In order to reinforce the new COVID-19 safety measures, we recommend the prominent display of checklists and/or graphical posters in high-traffic areas (e.g. main entry and exit points, elevators, stairwells) reminding researchers about necessary COVID-19 related safety precautions, such as hand washing,

distancing, and face coverings as well as the phone number for the Employee COVID-19 Call Center and the hotline number for safety concerns.

Common spaces require special consideration regarding social distancing protocols:

- **Shared breakrooms:** Acknowledging the likelihood that campus dining facilities will be closed, researchers who will be bringing food from home should be given specific local guidance and signage for safely using break rooms, including kitchens and lounge areas, such as assigned lunch shifts that ensure a safe density of users.
- **Common areas:** For common areas (e.g., hallways, entrances, stairs, bathrooms, elevators, mail-rooms, cafes, cafeterias, parking garages), doors should be made hands-free where possible and traffic reduced. Designating up vs. down stairs is preferable. Some common areas may be closed to public use entirely.
- **Bottlenecks/lines at entrances:** If shift schedules all begin at the same time, put measures in place to avoid bottlenecks at key entry and exit points, especially if new sign-in and sign-out procedures are instituted.

The university is working to train and deploy a group of safety ambassadors, modeled after a successful program now underway in the clinical setting, to help faculty, staff, and students adjust to these new protocols. These safety ambassadors would be on hand in and around opened buildings to answer questions about the new protocols and help remind individuals of required steps, such as wearing face coverings at all times and completing any required cleaning steps before the end of lab shifts, among other tasks.

3. Laboratories, core facilities, and libraries should maximize capacity while minimizing occupancy rates. Expect return at significantly decreased density compared with normal operations, and return at different times for different research spaces.

Expect return at significantly decreased density than normal operations. The current guidance regarding space is not to exceed 1 person per 400 square feet of gross lab area. Exceptions will be addressed through academic divisions in consultation with HSE. Increased density may also be permitted by the divisions, in consultation with HSE, in labs where the nature of the work requires higher-level PPE that will also limit potential for exposure.

- Time spent in a laboratory should be spent performing necessary experiments and other activities that require physical presence; other work should continue to be performed at home.
- Floor plans for individual laboratories should be distributed to aid in planning and organizing research start up efforts.
- Plans for common research spaces such as equipment, tissue culture rooms, etc., require additional planning to avoid overcrowding.
- Staggered work schedules should be developed to ensure all laboratory members have the ability to initiate their research in a reasonable timeframe.

Core facility managers should implement scheduling changes to ensure safe social distancing. In Phase 1, allow only low-risk activities; for example, instruments should be submission-only until the campus community transitions into Phases 2 and 3. Scheduling users and maintaining occupancy rate maximums will be essential. This may require, in many cases, authorizing only a portion of the labs in a particular building to open at precisely the same time. Protocols for disinfecting equipment and work stations before and after use should be developed with guidance from Facilities and HSE (Appendix D).

Many basic science labs share equipment/access with neighboring labs. In such situations, the relevant PIs must collaboratively develop a social distancing plan and scheduling plan to mutually optimize/accommodate research needs. Options might include: (a) moving to submission-only data collection, where only one research group operates the shared instrument and shares data digitally, or (b) operating instruments on shift schedules.

Part Two: PI Preparation

A central premise of this guidance is that return-to-research planning should, wherever possible, consist of a PI-driven approach, with appropriate consultation with lab members and oversight from program, departmental, and school leadership. The premise is based on the fact that the PIs are the most knowledgeable about the details of the research space, needed workflow, personnel, shared instrumentation, and program priorities. As such they are in the best position to provide specific details and plans for restarting research. While all conditions around the current situation are fluid and no recommendations should be considered final, the following approach reflects the best current methods for establishing needed modifications for resumption of research with respect to health and safety, equitable access to research laboratories, or any of the evolving institutional requirements and precautions.

4. Every laboratory must have in place an approved reopening plan, as well as a shutdown plan (in the event of increased infection rates), before occupancy. Approval of reopening plans is by the relevant Dean's Office.

Safe reopening of laboratories is a high priority. Clear expectations and processes provide a knowable path for PIs to resume laboratory-based research productivity. A preliminary list of PI responsibilities for lab reopening includes:

- Developing a lab-specific reopening plan
- Providing primary points of contact and communication for lab personnel
- Establishing appropriate training and monitoring for all lab personnel
- Demonstrating behavioral best practices
- Reporting concerns and sharing best practices to programs and/or divisions

The basic recommended process is that the lab reopening plan is provided to a program/department chair and Dean's Office, and once approved, the lab becomes eligible for reopening. Recognizing that some of the most important questions regarding operations under current conditions are not fully known, PIs need:

- Initial best practices (e.g. for spacing, disinfecting protocols, etc.)
- Practical information (e.g. laboratory floor plans)
- Materials (e.g. PPE, cleaning supplies)
- Signage detailing proper PPE use, disinfecting, reporting
- General support to prepare plans, initiate laboratory purchases and deliveries

A detailed plan is necessary to maintain health and safety during reopening (Appendix A). Laboratory reopening plans should address at a minimum:

- Responsible party
- Physical distance
- Logistics (e.g. shifts, density)
- Personnel responsibilities
- Cleanup
- PPE and supplies
- Lab shutdown contingency plan

It is equally important that lab members other than the PI understand the plan, agree with the implementation, and become conduits for best practices. This is best done primarily within the programs that house a given laboratory, therefore program/department chairs should provide the first level of approval (Appendix C). In addition, division-level approval provides the surest means to assure equity, collect best practices, and monitor density in building where floors or spaces are shared by multiple labs. It is not expected that the reopening plans or shut-down plans are a pro-forma exercise. **It is intended that only plans that fundamentally address the issues around reopening are approved.**

When creating a plan, PIs need to consider what steps will be necessary to safely shut the lab down again if necessary. Given the possibility that research may have to be scaled back again with little notice, PIs are strongly advised to ramp up only those projects that can be ramped down quickly and at relatively little cost and complexity. For the time being, PIs should consider deprioritizing projects that depend on non-renewable resources, such as primary cell cultures or high-volume animal experiments, for which scaling back would be costly. As such, care should be taken in choosing projects to ramp up in the early phases.

In the event of a suspected COVID-19 infection in the lab:

- The lab director must notify and consult with HSE.
- All the lab areas that the affected individual inhabited will be subject to quarantine until disinfection has been completed. Leave space(s) unoccupied for a minimum of three hours and increase ventilation/open windows.
- **Disinfection can be performed by either lab personnel or a third-party cleaner, at the lab's discretion.**
- If the lab decides, in/upon consultation with HSE, to undertake cleaning by lab personnel, cleaning is to be done with standard procedures/PPE (gloves and face covering). No special materials or protocols are required. In areas that have higher air movement and exchange, larger particles will settle quickly while smaller particles would be removed by air exchange in relatively short time spans (i.e. under 3 hours). Some labs may only need 1-2 hours depending on air exchange, and reduced access time will be coordinated with HSE. In areas with little air movement or exchange, small particles will be in the air longer. Enclosed rooms with no or extremely limited ventilation, such as recording studios or residences, would need to be vacant for 24 hours before entering without higher levels of PPE.

5. Wherever possible, work on all projects will be permitted to commence in order to enhance research momentum for all, but not all projects can or should commence at the same time.

While eventually restarting every research project in a laboratory is the goal during Phase 1, it should be clear that some projects may move forward at a slower pace, some projects will need to be deprioritized to maintain flexibility in the event of possible reversion to an earlier phase, and time spent directly at the bench will vary. Experienced personnel should be the first to return so protocols and procedures can be verified and updated. Note that this will be progressively advanced based on measures of no spread within the work environment.

6. All lab personnel and PIs will be expected to fully comply with university guidance and lab-specific protocols, and personnel will be provided easy means for reporting violations.

All affiliates are expected to fully comply with the policies, protocols, and guidelines outlined here and in the Return to Campus Guide. Failure to comply places our community at risk for spreading the virus which could endanger community health and result in further disruption of research and educational activities. HSE has the authority to shut down facilities and activities that are noncompliant with health and safety precautions.

Every member of our community is empowered to request compliance with guidelines set forth here, in the Return to Campus Guide, and in other university communications. Those who encounter noncompliance may notify the university through:

- Healthy Safety and Environment (HSE) at HSEinfo@jhmi.edu or 410-955-5918 (JHM) or 410-516-8798 (Homewood)
- The JHU Hotline at Speak 2 US or 844-SPEAK2US (844-773-2528)

Repeated or serious noncompliance with current COVID-19 workplace safety guidelines will result in suspended facility access for a period of time and corrective and/or disciplinary action dependent on the severity and frequency of the infraction. Human Resources and/or Student Affairs must be consulted regarding any proposed corrective and/or disciplinary action for employees or students, respectively .

Part Three: Lab Personnel

The university's highest priority is the health and safety of all Hopkins faculty, trainees, and staff. When determining how people will restart or ramp-up their on-site research, efforts should be made to provide adequate notice and to consider physical and mental health support and services and individual caregiving responsibilities, transportation needs and commuting hazards, or other concerns.

The guidelines below pertain to those elements of lab personnel support that are within the purview of labs and their PIs. Other issues relevant to the health and safety of lab personnel but outside that purview are being addressed through other university workgroups.

7. Consistent and equitable consideration of employee and trainee needs.

The university has established procedures for students, postdoctoral fellows, staff, and faculty to request special accommodation related to COVID-19 health risks.

- All reasonable efforts will be made to protect the health and privacy of vulnerable individuals in ways that avoid public disclosure of personal health and/or disabilities information .
- As discussed in the Return to Campus Guide, anyone who is “vulnerable” according to the CDC guidelines can request accommodations to their work or learning environment from the Office of Institutional Equity or Student Disability Services. Others with concerns about returning to the workplace should contact Human Resources to discuss possible adjustments.
- Where possible, the university will work with PIs to develop alternate, remote assignments that allow individuals to further their professional development and education goals, including off-site research projects. If the university, the PI and the employee or trainee fully explore all options and there is no viable path to comparable remote work, graduate students/postdoctoral fellows may be permitted to go on a leave of absence (LOA).

8. PIs must provide clear communications to inform employees and trainees, and make them aware of formal channels to report concerns and/or mistreatment, creating a culture of flexibility and protection.

Communications and guidelines from the university will establish a baseline of expectations for establishing a culture of health and safety on an equitable basis across the institution. PIs must help to ensure those communications reach their employees and trainees and encourage those with concerns about lack of adherence (by their PI or other members of their lab) to government and university guidelines for managing COVID-19-related risk to speak out. In addition, the university recognizes the power imbalance between PIs and their supervisees, including graduate students, postdoctoral fellows, staff, and more junior faculty. Employees or trainees should not be placed under any pressure by PIs to expose themselves to potentially hazardous situations (e.g. unsafe working conditions in the lab). To that end, employees and trainees will be able to voice concerns confidentially to an authority who has the ability to act on their behalf to address safety concerns.

The university urges use of the SPEAK2US hotline by phone at 1-844-SPEAK2US (1-844-773-2528) or by online reporting at johnshopkinsspeak2us.com for faculty, trainees, and staff to report (anonymous or self-identified) a complaint or register a concern regarding health and safety.

9. Effective training and reinforcement of new COVID-19 related safety measures must be implemented in each lab.

It is likely that, due to laboratory safety and access concerns (e.g., handling of hazardous chemicals, animal transport), researchers will need to clean and disinfect some of their own work spaces, as facilities workers will be prohibited from cleaning those areas. A customized guidance document should be created for the Disinfection of Laboratory Benches/Work Spaces, as well as any other relevant COVID-19 safety measures (See Appendix D for general guidance to customize).

Part Four: Libraries, Archives, and Museums

The range of activities in humanities and social science research is broad, including focus groups, observational studies, canvassing and surveying, individual and group interviews, and access to library circulating and non-circulating materials. Much library research can inherently transition to remote work supported by increased digitization, which has been occurring but needs to be increased to allow more researchers to continue to work from home.

10. Organizing space for safe utilization

- Major alterations of space (e.g., plexiglass) so far have been discouraged in favor of rigorous hand hygiene, frequent disinfection of study spaces, and redesigning staff/user flows to maintain minimum six feet of distance. Posting of signs related to expectations of hand hygiene before and after handling of materials will be appropriate.
- Scheduling users based on a clear understanding of carrying capacity will be essential to the early phase of reopening. The number of scheduling slots should be based on availability within each particular space given social distancing requirements and determined by local staff based on safety parameters.
- Distancing calculations should account for staff to maintain safe distances as they move around to complete needed tasks of managing use, digitization, helping retrieve noncirculating materials, and working with users.
- Optimal workflow includes staff retrieving needed/reserved materials in advance (using proper hand hygiene and gloves if relevant) and having materials already on the worktable in anticipation of a user's arrival.
- Additional space for use of non-circulating collections may be available in some locations before libraries are open more generally.
- Consider in this process repurposing additional space to quarantine materials before or after use, given that libraries/museums will not be open to other users in initial phases.
- Cleaning and disinfection of sensitive library artifacts and materials is the responsibility of conservators. At their discretion, materials may be cleaned, sanitized, disinfected or left alone to reduce or eliminate contamination. **General cleaning and disinfection will be a joint effort between custodial and library staff, and third-party cleaners may be used to accomplish the cleaning required, at the library's discretion.** Frequent disinfecting of doorknobs, tables, and bathrooms will be based on recommendations of facilities and health/safety experts. Surfaces used by researchers will additionally be disinfected before and after each user.
- All users of library facilities will be expected to use face coverings when indoors. No exception will be made unless a reasonable accommodation is needed. In many special collections, latex glove use is not permitted, hand washing facilities are not present in the reading room, and alcohol-based disinfectants are not permitted. In these situations, users are expected to wash hands and disinfect their own laptops, cameras, and/or writing materials thoroughly both before and after using the collection. In addition to existing user agreements regarding security and handling of rare materials, each user

will be required to review, sign, and implement COVID-19 specific protocols detailing safe research practices at each service point.

11. Safe transfer of materials.

Establish quarantine practices when transferring materials within a facility from research space back to collections, and when transferring between different JHU locations. Consider short-term suspension of interfacility transfer service within Baltimore, asking users instead to travel to site where the material is ordinarily maintained. Quarantine duration of materials (24-72 hours) and spatial practices for quarantine will be informed by further guidance from health/safety/facilities workgroups. Users will be asked to understand that this will increase wait times to access frequently used materials, but is imperative to guarantee safety of both users and staff.

12. Digitization of materials.

Where possible, researchers and course instructors are encouraged to use already-digitized materials, or to request additional digitization of materials where feasible.

- All collections will need to establish a process for requesting digitization and a plan for staffing for the scope and scale of requests that can be accommodated in a given period. Priority will be given to JHU affiliates, especially for small requests that would avoid a user needing to come to use a space in-person, and course instructors' requests that would avoid the need for a class to come in-person to a JHU library, archive, or museum.
- All special collections have been asked to consider what forms and volume of digitization can be completed by a small number of staff in each location maintaining safe distance and staffing practices.
- In Phase 1, special collections can provide additional capacity to both researchers and course instructors to digitize non-circulating materials and to accommodate an increased volume of requests.
- Staff at different sites across JHU collections, who already closely collaborate about complementary needs and services, may determine that it is safest and most efficient to designate particular sites (e.g., Evergreen library) as not open to in-person users but instead dedicated entirely to digitization of large or specialized requests performed by a single or small number of staff with no other users on site.
- Clear communication to users is important about which digitization services are covered as customary service and which (e.g., very large volume requests, especially for outside users) require special payment. The capacity for digitization varies with the nature of the noncirculating materials.
 - Digitization of single-sheet documents or archival materials can be achieved with a common scanner or even a simple handheld camera and likely can be provided quite quickly.
 - Digitization of rare books which requires flatbed scanning or the use of sophisticated overhead cameras and lighting, digitization of artwork and artifacts may require more skilled photographic or filming equipment, spaces, and techniques.
- Digitization will be a key tool for course instruction that relies on non-circulating materials, although appropriate tech support will be crucial for success:
 - A librarian could "live Zoom" a special collection with a given class;
 - A librarian could film a special collection in advance of class.
 - The instructor could be within a collection with students observing remotely.
- Digitization is a key area of investment for the university if we are to speed the process of making non-circulating collections broadly available to JHU researchers, teachers, and learners. Note that the Sheridan Libraries has a relatively small digitization staff compared to peer institutions. This is a crucial area for strategic investment, and there can also be opportunities for innovative solutions repurposing existing technologies to meet user needs.

13. In-person access to non-circulating materials.

Reopening of non-circulating collections will be a phased process. During Phase 1, first priority for in-person access will be given to graduate student and faculty researchers, then JHU instructors who rely on collections, and then educators and researchers from the broader community (Phases 2-3). It is noted that some collections are not in high demand by JHU users and, if staffing time and space constraints permit, could still be made available (following usual protocols for safety) in earlier phases to external researchers. Direct user access to special collections, archives, and museums will need to be scheduled in advance. User requests for noncirculating and special materials may encounter delays in access due to needs for physical spacing, triaging of direct use and digitization requests and quarantining of materials after use or transit. The below outlines proposed triage and priority for Phases 1 and 2:

- **Phase 1:** JHU researchers, with special attention to the needs of graduate students and to faculty at critical stages of career/promotion timelines.
- **Phase 1-2:** JHU teaching faculty who need materials examined for teaching purposes with first priority for those who teach in fall 2020.
- **Phase 1-2:** Teaching faculty from local institutions who rely on non-circulating collections at JHU for their fall 2020 teaching (only as space and staffing allow; triage priority given to JHU affiliates).

14. Borrowing and return of circulating books and materials.

- Return of previously checked out books and materials has already started. This process is occurring through a combination of sending users pre-paid mailing labels, having safe procedures at all JHU libraries for curbside return of books, and, in rare circumstances, sending a JHU van to users' homes to pick up materials from those who require accommodations.
- Procedures for curbside pickup of circulating books and materials will continue being established during Phase 1 at every library, with minimal numbers of library staff pulling needed books from shelves and scheduling times with users for pickup.

Part Five: Clinical and Human Subjects Research

Research resumption involving interactions with human subjects must consider the risk to the study participants and the participants' community, as well as that to research staff and to the JHU community. Resumption plans involving in-person interactions with human subjects will follow institutional social distancing guidelines and require face covering in all JHU clinical and research space and buildings, as well as cleaning protocols for any instrumentation, computers, etc. that are contacted by research subjects. For research interactions outside of JHU managed facilities, investigators must follow appropriate safety precautions meeting local requirements and JHU policy. PIs must ensure proper training for study staff and create procedures that follow institutional health and safety practices to minimize COVID-19 exposure and transmission. PI plans for each protocol should include the process for referral of research participants who may need COVID-19 testing or treatment. Studies should focus on essential data measures and time points required to answer the research question and minimize in-person interactions where possible, substituting approved remote data collection methods. To the extent possible, studies involving human subjects should continue to be done remotely.

Divisional committees will review new and currently approved human subject research plans before the respective IRB reviews any request to restart in person human subject research including related necessary study amendments. For research activities in JHU managed facilities, this will ensure an equitable phased-in approach as well as provide density monitoring in spaces and buildings where lab-based research is also occurring. For research activities outside of JHU managed facilities, investigators must take appropriate

precautions to minimize the risk of COVID-19 exposure and transmission to research staff and study participants and their community members.

The reopening of research will be prioritized such that the first protocols to restart are those where research participants have direct prospect of benefit from the study procedures and those where delays to restart could have adverse consequences to the health and wellbeing of the participant. This prioritization will mirror to some extent the process JHU followed for staged study ramp down. These phases are described in the “Phases of Research Resumption” table on page 4.

15. In-person research interactions in Johns Hopkins clinical facilities.

Johns Hopkins has a special duty to protect its patients, research participants, and staff when they enter on-campus facilities. Resumption of research of substantial prospective clinical benefit to participants is a priority. Importantly, for patients obtaining clinical care at Johns Hopkins facilities, the incremental increase in risk of COVID-19 associated with research participation is limited and can be managed by adherence to the health and safety practices at those clinical care sites. As clinical activity resumes at Johns Hopkins facilities, coordination between research and clinical activities is important to limit density and ensure appropriate resource allocation. Research-only visits conducted in Johns Hopkins clinical facilities and research activities conducted in ICTR clinical research units are included as “research in JHU clinical facilities.” The planned phases for human subject research restart to facilitate a smooth resumption of the substantial research portfolio conducted in JH clinical facilities are.

- **Phase 1:** Therapeutic trials/Interventional studies, with potential for direct benefit to study participants. No studies with limited or no prospect of direct benefit.
- **Phase 2A:** Studies with limited or no prospect of direct benefit to study participants and **minimal participant interaction** in terms of duration and activity (e.g., biospecimen collection, limited interaction clinical assessments).
- **Phase 2B:** Studies with limited or no prospect of direct benefit to study participants and **significant participant interaction** (e.g., potential aerosol generating procedures or those requiring close contact for extended periods of time).
- **Phase 3:** All other protocols involving in-person interaction.

16. In-person research interactions in non-clinical Johns Hopkins-managed facilities.

When engaging research participants in JHU managed facilities settings outside of Johns Hopkins clinical facilities, faculty and research staff must consider the potential risks and benefits of in-person interaction and must follow all JHU facility guidelines on health and safety protections, as described here and in the Return to Campus Guide.

This guidance includes on-campus research activity conducted outside of facilities where clinical care is provided. Examples of such activity include research studies involving participants in the Homewood campus labs or in Hopkins managed buildings such as the JHSPH’s Lighthouse and Wood Clinic facilities that do not provide clinical care. The planned phases are:

- **Phase 1:** None during this phase.
- **Phase 2A:** Therapeutic trials/interventional studies, with potential for direct benefit to study participants. Observational or other minimal risk studies that involve in-person procedures with minimal participant interaction in terms of duration or activity (e.g., biospecimen collection, limited interaction physical assessments, behavioral observations).
- **Phase 2B:** Observational or other minimal risk studies that involve in-person procedures with significant participant interaction (e.g., potential aerosol generating procedures, those requiring close contact for extended periods of times, focus group discussions, child observations, surveys done in educational settings). Constraints on meeting size and use of general space align with university policy.
- **Phase 3:** All other protocols involving in-person interaction.

17. In-person research interactions outside of Johns Hopkins-managed facilities, in the U.S. and internationally, including community-based facilities and in participant homes.

When engaging research participants outside JHU managed facilities, faculty and research staff must consider the potential risks and benefits of in-person interaction in the context of the proposed location of that interaction. These locations will vary by facility, participant populations, and geography. For studies that involve in-home participant visits, researchers must be prepared to provide *research staff and participants* with appropriate safety equipment (including face coverings) and information to protect them against COVID-19 exposure and transmission. Researchers must also consider risks to others who may be in the home but who are not participants in the research.

For all such in-person studies, including those involving fieldwork, researchers must consider the local epidemiology and mitigation procedures in response to the COVID-19 pandemic. University guidance to Johns Hopkins investigators does not supersede the required compliance to restrictions by local authorities, but JHU researchers may provide protections that go beyond local requirements. For international studies, investigators should consult their local, in-country partners to help guide decisions about resumption of in-person research activities. As a general guideline, research activities should minimally provide social distancing and protection procedures equivalent to those in use in ambulatory settings in their local environment. For example, if a study is occurring in a place where attending to routine outpatient care necessitates wearing a face shield and performing COVID-19 testing, then the research study should include the same protections. Researchers must also address ethical issues such as privacy, mandated public health reporting, and data management. In this climate of rapidly evolving regulatory requirements, resumption plans should address compliance with relevant regulations. The planned phases are:

- **Phase 1:** None during this phase.
- **Phase 2A:** Therapeutic trials/interventional studies, with potential for direct benefit to study participants. Observational or other minimal risk studies that involve in-person procedures with **minimal participant interaction** in terms of duration or activity (e.g., biospecimen collection, limited interaction physical assessments, behavioral observations).
- **Phase 2B:** Observational or other minimal risk studies that involve in-person procedures with **significant participant interaction** (e.g., potential aerosol generating procedures, those requiring close contact for extended periods of times, focus group discussions, child observations, surveys done in educational settings). Constraints on meeting size and use of general space align with local policies..
- **Phase 3:** All other protocols involving in-person interaction.

Part Six: Undergraduate Research

Many JHU undergraduate students state that the most important reason they chose to come to Hopkins is access to diverse research experiences. Continuing to provide laboratory access to our undergrads would fulfill that expectation. Faculty are eager to bring undergrads back to their labs to take on new projects or complete pending ones, alongside graduate students and postdocs. These guidelines focus on in-person laboratory research and do not apply to research experiences outside of a laboratory (e.g., data analysis, computational work, etc.).

Until the university fully resumes normal operations, research activities that can be completed off campus should continue in that format. Other research activities may not be amenable to undergraduate participation due to some of the precautions described below. In those cases students are encouraged to approach PIs and get reading assignments to better prepare for participation in in-person experiments the following academic year.

18. Additional undergraduate safety procedures

We want to ensure that undergraduate students will be given ample opportunities to conduct research in laboratories at JHU during AY20-21. However, potential health risks to graduate students, postdocs, faculty, and staff, as well as the epidemiological risk of wide-spread infections that necessitate closure of labs must be weighed. The increased risk of spreading COVID-19 in the research community should be stressed to all trainees, including undergraduate students, and assessed and mitigated wherever possible.

Faculty can recruit and successfully train undergraduate students for research activities in their laboratories as long as the undergrads can be directly supervised and closely follow all safety procedures of the laboratory and campus. Some experimental procedures that cannot be executed without direct supervision due to the university's physical distancing requirements need to be restricted to graduate students and fellows. (Before the stricter safety protocols, these could be done with PhD students and undergrads side by side.)

Training of undergrads for experimental tasks and use of equipment (cell culture, microscopes, etc.) often requires close-quarter operation. This may demand additional protection for both the trainer (e.g. grad student) and trainee, such as N95 masks and increased ventilation.

- The correct use of N95 masks requires specific training which includes the need to be personally fit-tested. Policies and procedures for the training of lab members can be done in consultation with Prof. Ana Rule (BSPH) via a "train the trainer" course.
- Training will need to be conducted in a well-ventilated area or fume hood.

19. Integration with other lab personnel

The number of undergrads in laboratories will likely need to be limited during the fall semester. First-year PhD students will be arriving soon and they will also need access to laboratories. Right now, few labs could accommodate extra students into their current shifts given the rule of having one person per 400 gross square feet. Extending current shifts into the evening may be a way to accommodate undergrads. Consequently, laboratories will not be open to first-year students at this time, except in limited cases when divisional leadership has deemed it appropriate.

Undergraduate research in labs should be managed in blocks of times to ensure proper/full integration of undergrads into lab shifts and cleaning procedures. These blocks would match as much as possible the overall lab shifts to reduce the number of trips to and from, and in and out of, buildings across campus, and to make each trip more productive (Homewood to East Baltimore). PIs will provide amended individualized plans to add undergraduate students to their laboratories for continued safe operation. These plans will be reviewed and approved by chairs/center directors.

20. Fulfilling requirements for research experience

Many graduate students and postdocs enjoy and value teaching undergraduate students, providing them with hands-on training and management experience and also enhancing the graduate student's productivity. JHU undergrads use research experience to build and expand their professional networks. Letters of recommendation from faculty mentors play a pivotal role in their applications to graduate schools, professional schools, and work in the public and private sectors. Within the limitations of the pandemic, the university will continue to provide rewarding research opportunities to undergraduate researchers to the extent feasible so that they can fulfill experiential research requirements and accomplish broader research goals.

Part Seven: Resuming Research in Non-laboratory Settings

(Added July 14, 2020)

In June 2020, the University entered “Phase One” of its Return to Research Plan to begin a gradual, phased reactivation of the full breadth of research activities at Johns Hopkins University. The guidelines issued at that time were focused on laboratory-based, library-based, and human subjects research; this section includes modification of the guidelines to:

- (1) permit non-laboratory-based researchers (such as humanists, social scientists, and computational researchers) to return to campus if their research activities require them to be on campus; and
- (2) clarify that laboratory-based researchers are able to use their single-occupancy office even if outside of their laboratory.

The guidelines previously required that all faculty, staff, students, and trainees who normally perform or support research outside laboratories (“non-lab” researchers) stay off campus. Similarly, faculty who direct laboratory research groups (PIs) were required to stay off campus. Finally, there was some confusion about whether those who work in laboratories can make use of their office, if that office is outside the laboratory.

This modification to the guidelines applies to research performed by non-laboratory researchers (such as humanists, social scientists, and computational researchers). The modifications also clarify that laboratory researchers who have a single-occupancy office outside of their laboratory are able to use that office if necessary to perform their research. Many faculty, staff, students, and trainees will want to continue working remotely, and the university encourages that wherever possible. Indeed, even in normal times, many non-lab researchers stay conduct their scholarly work off campus. Nevertheless, during this time, those who need to come to campus to accomplish their research should be allowed to do so.

Because the vast majority of single-occupancy offices at Hopkins are provided to faculty, the modifications will largely apply to them. However, some non-laboratory-based students and trainees may have research that requires a presence on-campus; if that is the case and their research can be conducted in a manner consistent with the de-densification guidelines already in place their PI or faculty mentor may propose a return to campus plan.

Importantly, the following remains in full force: The resumption of on-campus research activities will be limited only to those activities that actually require a person to be on campus. Any and all research work that can be accomplished at home via telework should continue to be done at home, and people should only be on campus for the time periods necessary to accomplish required on-campus work.

Below is a list of permissible reasons to return to campus:

- **Home lacks capabilities needed to perform research.** In some cases, research cannot be effectively accomplished without access to on-campus facilities, equipment, and/or internet speed (e.g., research requiring high-powered computing and/or significant data transfers);
- **Home lacks technology needed to view research materials.** It may be that research cannot be effectively accomplished without multiple monitors or large monitors that are present in the researcher’s office but not at their home;
- **Need to access research materials available only on campus.** Some hard-copy materials needed for research, like out-of-print books, are housed either in university libraries/archives or in faculty members’

offices (humanists, for example, routinely borrow tens/hundredsof books for a project, which often cannot be stored at home due to fragile condition or other factors);

- **Need to access hard copies of data.** Hard copies of sensitive, sometimes identifiable data (including U.S. census data, clinical data, etc.) are kept locked on campus and can only be accessed with a secured computer on campus;
- **Need support to access to materials and/or data available only on campus.** Some hard-copy materials needed for research are maintained by university libraries and archives and only accessible with the help of library/archives staff;
- **Need to directly supervise safety procedures.** Some lab faculty are conducting research involving sensitive or hazardous materials, like COVID samples, and therefore need to personally supervise safety procedures in their labs;
- **Improved human subjects research outcomes.** For human-subject researchers, research cannot be effectively accomplished without on-campus telephone services (for example, they get a much improved response rate on phone calls when the caller appears as “Johns Hopkins” as opposed to a private (blocked) phone number.
- **Productive use of experimental downtime.** For laboratory researchers, in-person research enables no waste of the downtime between experiments and more productive use of that time (e.g., data analysis, etc.).

Faculty seeking to use non-laboratory space(s) for research will have to create PI-level plans providing a rationale for why they (and/or their students, staff, and trainees) need to be on campus. They will coordinate with their colleagues and department chairs who will submit these plans for approval to their divisional vice dean for research. This way, the division can ensure that the rationale is research-based and that density requirements are met. For lab researchers with offices outside the lab space, use of offices does not count towards occupancy in the labs.

Safety guidelines continue to be in place. Face coverings must be worn except when inside single offices with a closed door, as per the Return to Campus Guidelines. In a shared environment, everyone will use face coverings and keep a 7.5 ft. diameter (6 ft. distance between people + 1.5 ft. for body) to provide approximately 44 sq. ft. per person as per the Return to Campus Instructional Guidelines.

Current city and state policies allow for lower-density use of office space on campus at this time.

Appendix A

Template for Laboratory Reopening

It is required that prior to reopening any laboratory (lab/core/shared facility) to personnel (e.g. graduate students, technicians) that a PI develop a reopening plan, and have this plan approved.

Any work that can be performed away from the labs at proper social distance should still be done away from the lab. Group meetings and communal kitchens are not appropriate for use during Phase 1 and are to be explicitly avoided in the initial reopening.

All normal laboratory safety protocols should be maintained and personnel should be reminded of traditional safety policy and resources. Any new procedures do not replace traditional safety policy. Safety is always paramount for laboratories, but as we move into Phase 1, additional measures need to be put in place to operate under pandemic conditions.

PIs must provide to their Divisional leadership a reopening plan that addresses the following:

Plan Element	Plan Specifics
Responsible Party (Parties)	<ul style="list-style-type: none"> ■ Provide location (and name) of lab. ■ State responsible party for lab, including contact details. If not the same as current lab signage, document change with photo (if possible) ■ Provide department/program name that the lab falls under.
Physical Distance Plan	<ul style="list-style-type: none"> ■ Provide details for providing ample physical distance that is consistent with the current university recommendation. ■ Establish max occupancy for lab based on university and school guidelines. ■ Establish workspace markings (distances) where appropriate. ■ Provide separate sections/discussion for specialized/shared equipment that need their own personnel distance guidelines and markings. ■ Provide guidance on spacing for work areas (benches), consider supply cabinets, refrigerators, and secondary equipment etc. and any other features of the lab that require distance plans and appropriate marking for the personnel.
Lab Logistics	<ul style="list-style-type: none"> ■ The PI is responsible for creating a system whereby it is known in near realtime who is in the lab and when they are in the lab. ■ A list of all personnel who are allowed in the lab should be provided. If cohorts are utilized the cohort groups may be provided. ■ Work (open) hours for the lab should be stated. ■ Logistics for special shared equipment, if varied from established practice (e.g. how to reserve) should be explained. <p><i>Note, the use of non-standard work hours (colloquially referred to as shifts) is allowed to increase utilization, see Appendix B for additional guidance.</i></p>

Personnel Responsibilities	<ul style="list-style-type: none"> ■ Specifically state personnel responsibilities and share with all lab personnel. ■ Document standard safety rules and point to existing safety guidance. ■ Provide additional COVID related personnel responsibilities, refer to latest guidance from Health & Safety. ■ Include any additional lab specific user responsibilities, include reference to pre-existing safety manuals.
Cleaning plan	<ul style="list-style-type: none"> ■ A plan should be provided for how the lab will remain clean. PIs and personnel are advised that given desires to minimize mixing and maximize social distance more cleaning than before is likely expected of personnel. Areas to be considered: trash, bench/work areas, touch spots, equipment, and general housekeeping (see Appendix D).
PPE, materials and supplies	<ul style="list-style-type: none"> ■ Reopening requires appropriate PPE and cleaning materials. ■ Document (list) materials required before reopening. ■ The university is procuring necessary PPE and specific cleaning materials for the initial reopening phase. ■ Divisions will put in place mechanisms to deliver PPE and cleaning supplies based on laboratory needs.
Shut-down Procedure	<ul style="list-style-type: none"> ■ The PI should provide a plan for how to shut down the lab safely in minimal time. Consider redundancy in personnel who would perform the shutdown. ■ Protocols for shutting down, cleaning, and restarting a lab if personnel tests positive for COVID-19 or for personnel with a positive test in their household are not yet fully established.

Note to PI's of Core Facilities or Shared Equipment

The university recognizes that bringing core facilities online is an important step towards providing equitable research opportunities. However, shared use equipment presents special challenges. Please consider if exposure risks with shared use equipment can be minimized by the use of a technician or smaller set of consistent operators on a specific piece of equipment. Consider staged opening of your facilities bringing low-risk equipment online first. It is possible that some items/equipment may be too high of a risk for initial reopening. In addition to specific disinfecting protocols for the instrument, pre-defined downtime between users is encouraged. Plans for core facilities will be reviewed the same as other labs and due to the special conditions for cores some discretion is likely necessary in providing the reopening plan.

Appendix B

Reopening Template “Shifts”

PIs of labs are allowed to consider non-standard lab open hours as a potential means to increase productivity while managing social distance (density) requirements. The underlying principle of the cyclic shift strategy is to separate teams over the time period, for potential carriers to become symptomatic and inhibit cross-team transmission. Fixed shift teams limit the size of any given person’s potential interactions over time and serves as a buffering function that distance alone does not accomplish. Fixing shift teams – at least in the earliest phase of reopening – functionally limits the number of people in the lab who would potentially be at risk for infection as well as the number who may need to be quarantined should a lab cluster emerge. Deep cleaning should be done between shifts.

Below, three different shift models are described. The right model will depend on a the type of research and space layout (e.g., need to access animals, experimental duration) and personnel preference. The mechanism by which shifts are assigned are not defined but considerations should include lab members’ transportation options and child care responsibilities and the ability of infrastructure to support the designated shift hours (e.g. security).

Shift model A – divide the day

The day is divided into two shifts. Every lab member is assigned to an AM or PM shift. Individuals can only come in during their shift. Two 4-hour shifts may not be realistic for many labs. Time windows that allow closer to ~8 hours per shift (e.g., 6 AM – 1:00 PM-lab does wipe down on exit; 2 PM – 10:00 PM- lab does wipe down on exit) may be possible but should address the division’s ability to support extended hours and accommodate any lab member. Plans should include a time buffer to ensure shift changes occur without cross-contact.

Shift model B – divide the week

The week is divided into two shifts. The easiest division to imagine is MoWeFr/ TuThSaSu but other divisions are possible (Mon-Wed and Thurs-Sun). This allows longer workdays for experiments that are not easily accomplished in 4-6 hour blocks. There is less daily concern about (and friction over) overlap. However, some people would always be working on Saturdays.

Shift model C - somewhat longer blocks

A 15-day period could be divided into three blocks. Lab personnel are divided into cohorts. Cohort 1 works on campus the first 5 days and then works remotely for the next 10 days. Cohort 2 works on campus the next set of 5 days and then remotely the next 10 days. Cohort 3 works on campus for the next 5 days and then remotely the next 10 days. That ends a 15-day period. This strategy is designed to even more strictly isolate work units.

Appendix C

Approval Process - Laboratory Reopening Plan

Specific implementation details will vary by division but laboratory reopening plans will be initially submitted to a divisional chair and then a second party. In this context a “chair” is the program, center or department leader that the laboratory falls directly under. The second party should be designated by the division and may be a standing committee, vice dean for research, or other division-level position. If no second party is available to the program chair, the office of the vice provost for research could provide second party approval.

If external conditions change (e.g. critical new guidance) chairs may require modifications and re-approval of any laboratory plan. As internal conditions change (e.g. new equipment, new personnel) PIs should provide updated operating plans. Chairs are responsible for evaluating if changes warrant an additional re-approval cycle.

Advice for Chairs and Approvers

The PI-centric approach adopted for reopening fits the structure and culture of Johns Hopkins, but places a great deal of weight on the programs and their leadership to monitor and implement flexible solutions for reopening that remain safe. Chairs and Approvers need to understand the “guiding principles” that have been established for the process – namely safety and equity. It is important that the provided plans place a serious emphasis on safety and are not a pro-forma exercise.

Plans should be rejected and revision requested if any major element of the plan: Physical Distance Plan, Lab Logistics, User Responsibilities, Cleaning, PPE, Materials and Supplies, Shut-down Process – is not adequately addressed. Plans should not be approved unless the Chair and secondary approver have a clear understanding of how social distance needs will be implemented and how monitoring of who is in the lab and when they are in the lab is clear to all parties.

Appendix D

JHU Research Laboratory Disinfection Guidance

In order to prevent the spread of the SARS-CoV-2 virus in research laboratories, the following procedures must be performed by each lab group each day. Failure to comply will place your lab at risk for spreading the virus which could result in harm to your health, the health of your household, or our community. Health Safety & Environment has the authority to shut down labs that are consistently noncompliant with these health and safety precautions.

BEFORE Coming to Campus

1. **Check for COVID-19 symptoms.** Fever; Cough; Shortness of breath or difficulty breathing, see full list of symptoms at: <https://www.hopkinsmedicine.org/coronavirus/covid-19-self-checker.html>
2. If you are experiencing symptoms or have had contact with someone who is COVID-19 positive in the past 14 days, call the appropriate call center for guidance. Stay at home if you are sick. If you are sick but not due to COVID-19 notify your supervisor.
3. **Students must call the University Health Services at 410-955-3250 or Student Health & Wellness at 410-516-8270 and Employees must call the Employee COVID-19 Call Center at 833-546-7546 if you are experiencing symptoms or if you have had contact with someone who has been diagnosed as COVID-19 positive in the past 14 days.**
4. **Wear freshly laundered, lab appropriate clothing and a cloth face mask**
5. **Leave non-essential personal items, i.e., purses, backpacks, at home.**

Laboratory Disinfection Protocol

1. **Wash hands** with mild soap and warm water for 20 seconds. **Dry hands.**
2. **Don additional PPE required for disinfection: lab coat or apron, nitrile gloves, and safety goggles.**
3. **Assemble disinfectant and wiping materials. Supplies can be obtained through your usual supply chain methods or custodial services.**
4. **Disinfect laboratory surfaces using EPA approved hospital grade disinfectant or 1:10 bleach solution.** For consistency, reproducibility, and chemical compatibility, multiple disinfectant use should be avoided. Information on appropriate disinfectants can be found at <https://www.epa.gov/pesticide-registration/list-n-disinfectants-use-against-sars-cov-2>
 - a. Disinfect all frequently touched surfaces and objects.
 - b. ***If there is visible chemical/other residue on a surface, first remove residue with a separate cloth wetted with water and allow surface to dry before attempting to disinfect***
 - c. Spray/apply disinfectant directly to new cloth- minimizing aerosol generation of disinfectant; wipe working and high contact surfaces with cloth- benchtop, fume hood bench and sash, cabinet handles, refrigerator handles, door handles, sink handles, computer keyboard and mouse, etc. On certain electronic devices, several lighter applications with dampened disinfecting cloth may be necessary to reduce damage to the device.
 - d. ***Apply enough disinfectant to thoroughly wet surfaces and allow disinfectant to air dry, ensuring that the manufacturers recommended contact time is met***
 - e. Disinfecting cloth may be reused until grossly soiled. Dispose of grossly soiled cloths in bio box.
 - f. When you complete the cleaning/disinfecting process, remove nitrile gloves and dispose into bio-hazard waste box, wash hands.

- g. ***Ensure everyone in the lab is using the same disinfectant! Do not switch between different disinfectants and/or bleach***
- h. You may wish to exit the room while the disinfectant vapors dissipate.
- i. You are ready to begin research.

While Performing Laboratory Activities

1. **Maintain social distancing** of 6 feet between other researchers.
2. **Continue to wear** mask (Note: Cloth masks are being worn based on state public health requirements for masking, not to protect against hazards in the lab. Tasks where potential respiratory exposure to hazardous chemicals, biologicals and radioactive materials must be done in fume hoods and/or bio-safety cabinets. Follow existing JHU health and safety PPE policies.)
3. **Wash hands** anytime you leave the lab, after you touch shared items, before AND after using the restroom.
4. **Do not touch your eyes, nose, or mouth.**
5. **Monitor your symptoms throughout the day.** Immediately leave laboratory and alert your PI if you develop symptoms at work. Contact your COVID Call Center for guidance.

BEFORE Leaving the Laboratory

1. **Disinfect laboratory surfaces using hospital grade disinfectant.**
2. **Disinfect any personal item you handled in the lab such as mobile phones and computers.**
3. **Doff lab coat and store.** The lab coat should be considered soiled once it is worn. This does not preclude it from being worn for several days before it is laundered. Launder or exchange soiled lab coat weekly per established laboratory procedures.
4. **Remove gloves** and dispose in lab bio box.
5. **Wash hands** with mild soap and warm water for 20 seconds. **Dry hands.** Alternatively, use hand sanitizer.

When you get home

1. **Remove mask.** Either launder cloth mask or store other mask in paper bag.
2. **Place clothes in dirty laundry. Launder before next use.**
3. **Wash hands** with mild soap and warm water for 20 seconds.
4. **Shower**

Contact JHU Department of Health, Safety & Environment with questions.

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Appendix E

Membership of the Committee on Research Restart

- **Denis Wirtz**, PhD, T.H. Smoot Professor, Engineering and Vice Provost for Research, University Administration (Chair)
- **Suhnne Ahn**, PhD, Director, Peabody at Homewood Program, Peabody Conservatory
- **Netz Arroyo**, PhD, Assistant Professor, Pharmacology and Molecular Sciences, School of Medicine
- **David Ashwood**, Senior Director, Plant Operations, University Administration
- **Kristin Brig**, PhD Student, History of Medicine, School of Medicine
- **Betsy Bryan**, PhD, Professor, Near Eastern Studies and Vice Dean for Humanities and Social Sciences, Krieger School of Arts & Sciences
- **James Bukowski**, Assistant Director, Occupational Safety, East Baltimore Campus
- **Kate Calvin**, Interim Vice Dean for Finance and Administration, Bloomberg School of Public Health
- **Christopher Cannon**, PhD, Bloomberg Distinguished Professor, English and Classics, Krieger School of Arts & Sciences
- **Chad Clapsaddle**, Associate Dean for Finance and Administration, Whiting School of Engineering
- **Keira Cohen**, MD, Assistant Professor, Medicine, School of Medicine (Chair – Student/Postdoc Subcommittee)
- **Theresa Colecchia**, JD, Senior Associate General Counsel, University Administration
- **Perry Cooper**, Manager, Health, Safety and Environment, Homewood Campus
- **Sarah Cunningham**, Assistant Vice Provost, Student Life Strategy and Policy, University Administration
- **Lisa Deleonardis**, PhD, Professor, History of Art, Krieger School of Arts & Sciences
- **Kathleen DeLaurenti**, Head Librarian, Peabody Conservatory
- **Kirsten Endresen**, PhD Student, Physics, Krieger School of Arts & Sciences
- **Jeremy Greene**, MD, PhD, Professor, History of Medicine, School of Medicine
- **Earle Havens**, PhD, Curator of Rare Books, Sheridan Libraries
- **Cheryl Himmelfarb**, PhD, Professor and Vice Dean for Research, School of Nursing
- **Eric Hutchinson**, DVM, Associate Director, Research Animal Resources, School of Medicine
- **Marty Kajic**, Director of Facilities Management, Bloomberg School of Public Health
- **Nancy Kass**, ScD, Professor, Health Policy and Vice Provost for Graduate and Professional Education, University Administration (co-Chair – Libraries Subcommittee)
- **Christine Kavanagh**, Assistant Dean, Graduate and Postdoctoral Academic Affairs, Whiting School of Engineering
- **Gregory Kirk**, MD, Professor, Epidemiology and Vice Dean for Research, Bloomberg School of Public Health
- **Rebekka Klausen**, PhD, Associate Professor, Chemistry, Krieger School of Arts & Sciences
- **Clarence Lam**, MD, Interim Director, Occupational Health Services, School of Medicine
- **Bria Macklin**, PhD Student, Chemical & Biomolecular Engineering, Whiting School of Engineering
- **Heather Mason**, Director, Human Resources, University Administration
- **Courtney McQueen**, PhD, Senior Science Writer, University Administration
- **Tyrel McQueen**, PhD, Professor, Chemistry, Krieger School of Arts
- **Katherine (Kat) Moon**, Postdoctoral Fellow, Environmental Health and Engineering, Bloomberg School of Public Health
- **Heba Mostafa**, MD, PhD, Assistant Professor, Pathology, School of Medicine
- **Larry Nagahara**, PhD, Associate Dean for Research, Whiting School of Engineering
- **Andy Pekosz**, PhD, Professor, Molecular Microbiology and Immunology, Bloomberg School of Public Health (Chair – Health & Safety Subcommittee)

- **Michael Pokrass**, PhD Student, Molecular Biology and Genetics, School of Medicine
- **Mark Pollei**, Director, Conservation and Preservation, Sheridan Libraries
- **Sue Porterfield**, Associate Vice Provost, Research, University Administration
- **Matt Poyton**, PhD, Postdoctoral Fellow, Biophysics and Biophysical Chemistry, School of Medicine
- **Kristen Reek**, JD, Assistant Director, Federal Affairs, University Administration
- **Ben Schafer**, PhD, Professor, Civil and Systems Engineering, Whiting School of Engineering
(Chair – PI Subcommittee)
- **Geraldine Seydoux**, PhD, Professor, Molecular Biology and Genetics, School of Medicine
- **Anne Seymour**, Director, Welch Medical Library
- **Brian Smith**, Chief Procurement Officer, University Administration
- **Winston Tabb**, Dean, University Libraries (co-Chair – Libraries Subcommittee)
- **Sheila Thalhimer**, Head Librarian, Nitze School of Advanced International Studies
- **Christina Thomas**, PhD Student, History, Krieger School of Arts & Sciences
- **John Toscano**, Professor, Biology and Vice Dean for Natural Sciences, Krieger School of Arts & Sciences
- **Elliot Wainwright**, PhD Student, Nitze School of Advanced International Studies
- **Ashi Weenaratna**, PhD, Bloomberg Distinguished Professor and Chair, Biochemistry & Molecular Biology, Bloomberg School of Public Health
- **Emily Wisniewski**, PhD Student, Chemical & Biomolecular Engineering, Whiting School of Engineering
- **Vasan Yegnasubramanian**, MD, PhD, Associate Professor, Oncology, School of Medicine
- **Lingxin Zhang**, PhD Student, Near Eastern Studies, Krieger School of Arts & Sciences