NATURE Lab COVID Safety Plan for the Our Soil Project
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Project Overview

"Our Soil" is an NSF-supported project that involves community-engaged environmental research ("citizen science"). Our plan is to hold a series of hands-on workshops with North Troy neighborhood residents, to teach them how to sample and analyze soil from yards and gardens. It is important to note a distinguishing element of the project: unlike soil testing projects that exist elsewhere, NSF has funded us to develop and evaluate a method of collaborative, community-based soil research. It is not merely "soil testing" but a package of interdisciplinary education and collective action, conducted and analyzed by an interdisciplinary research team.

The Our Soil project will take place in an off-campus location. The research involves a community partner, a non-profit organization in North Troy that has a strong record of involving neighborhood youth in environmental projects, such as water testing and urban gardening. This organization, The Sanctuary for Independent Media (officially called "Media Alliance"), will provide indoor and outdoor locations for the Our Soil project, as described below. The indoor and outdoor locations are addressed separately below.

COVID Safety Protocols for the Indoor Laboratory Space
At The Sanctuary for Independent Media, there is a community laboratory, called the NATURE Lab (North Troy Art, Technology and Urban Research in Ecology). NATURE Lab was constructed with funding from the NYS Department of Environmental Conservation and is a Biosafety Level (BSL) 1 laboratory. A new ventilation system was installed to replenish air with outside air, reducing risk of disease transmission. As of February 2021, the laboratory is still being built and is not in use by any other project or individuals. Only the Rensselaer faculty and postdoc listed below will access this laboratory (no community participation).

Why an Off-Campus Laboratory is Necessary
The purpose of working in this off-campus laboratory is to evaluate the benefits and drawbacks of partnering with a community organization to carry out environmental justice research. Community laboratories like NATURE Lab have the potential to provide low-income, marginalized communities with access to scientific knowledge and environmental testing resources that are otherwise difficult to access.

Timeframe
The Our Soil team will begin to set up laboratory resources at the Sanctuary for Independent Media in April 2021. Work in this laboratory will primarily be conducted by Dan Walls, the postdoctoral researcher. From April to June 2021, he will be establishing the infrastructure and research processes that will support community-based soil testing. In addition, this laboratory will be used to teach the other members of the project team (Abby Kinchy, Kathy High, and

Branda Miller, all Rensselaer faculty) how to sample and prepare soil for analysis and conduct tests for lead, arsenic, and copper.

Occupancy/Distancing

The laboratory is located on the first floor of the NATURE Lab building, and it is 410 square feet. At no time will more than two people be in the laboratory. When two people are in the laboratory, they will be required to maintain at least six feet of distance, which will be marked with floor stickers. If an individual feels unwell for any reason, they will not enter the laboratory.

Also on the first floor of the NATURE Lab building are a meeting space (200 SF), office (71 SF), and a handicap accessible bathroom. Each of these rooms will be restricted to single person occupancy during this project.

Personal protective equipment (PPE)

At the entrance of the NATURE Lab building there is a station with touch free thermometers for taking people's temperatures and a contract tracing log, which are required before entering. While in the laboratory, full personal protective equipment (PPE) must be worn, which includes cloth or disposable masks, face shields, laboratory coats, and disposable gloves. Cloth masks will be hand washed at the end of each day and a clean cloth or disposable mask will be worn each day. Disposable gloves will be discarded when exiting the laboratory. Each piece of PPE will be individualized, purchased through the Our Soil project (PI Abby Kinchy), and stored in NATURE Lab.

Sanitation

Sanitation must be performed as follows: i) Wipe down of contacted surfaces by each researcher at beginning and end of each shift; ii) weekly laboratory deep clean/ sanitization (thorough disinfection / cleaning of all surfaces that may have reasonably been in contact with a researcher in the past week). Weekly deep cleaning will be performed by Dan Walls, the postdoctoral researcher. Cleaning supplies will be purchased and provided by the Our Soil project (PI Kinchy). Frequent hand washing must be employed using alcohol-based hand sanitizer or soap and water, including upon entering and exiting the laboratory.

Personnel and Access

Only Rensselaer faculty and a Rensselaer postdoc will have access to the laboratory, for the duration of the Our Soil project. These Rensselaer employees are listed below.

Name[+]	**RIN**	**Graduate student, postdoc, faculty, research staff or other**	**Is the individual coming from out of state? If so, from where?**	**Reason for access**

Abby Kinchy	660655842	Faculty	No	Project PI
Dan Walls	662004800	Postdoc	No	In charge of setting up soil testing program
Kathy High	660295639	Faculty	No	NATURE Lab Project Coordinator
Branda Miller	660002287	Faculty	No	The Sanctuary for Independent Media Arts and Education Coordinator

Researcher Training, Testing, and Tracking

Each researcher must complete training (using COVID-19 modules accessible through individual CITI accounts and Institute Percipio training). Each researcher must adhere to a regular COVID-19 testing schedule, following Rensselaer guidelines. Each researcher who accesses laboratories must log their activities using the DIAL tool.

COVID Safety Protocols for the Outdoor Laboratory Space

The Sanctuary for Independent Media has a large outdoor "campus" in North Troy, which includes a vegetable garden, a yard adjacent to the NATURE Lab building, and a small park called Freedom Square. These outdoor spaces will provide well-ventilated locations for participatory soil testing workshops. Work tables will be set up outdoors, at least six feet apart. This will constitute the outdoor "laboratory" for the Our Soil project.

When people arrive, their temperatures will be taken with touch free thermometers and their information will be recorded in a contract tracing log. At that time they will be given masks and gloves.

Why Public Participation is Necessary

The major objective of this project is to develop and evaluate a program for engaging the public in the process of testing soil for heavy metal contaminants, interpreting the results, and deliberating about solutions to any discoveries of pollution. Therefore, this project cannot be completed without public participation. The safety precautions described here are intended to reduce the risk of COVID-19 transmission among participants and to the Rensselaer community.

Timeframe

In July-September 2021, we will hold six IRB-approved in-person meetings with members of the Troy community. All of these in-person meetings will take place outdoors, in small groups (10 or fewer). The purpose of these in-person meetings is to train participants how to sample, prepare, and analyze soil for heavy metals, interpret the results, and communicate the results in an accessible and compelling way.

Three community groups will be trained, with two meetings for each group (each meeting about 4 hours in length).

1. five youth participants in the Uptown Summer youth employment program at the Sanctuary for Independent Media (July)
2. five parents of small children (August or September)
3. five urban gardeners (August or September)

Event Size/Distancing

In total, the size of these outdoor events will never exceed 10 people. Over the course of July-September 2021, we intend to train 15 community members as “Soil Justice Fellows.” As described above, they will attend trainings in groups of 5 or fewer. These trainings will be facilitated and observed by the laboratory personnel listed in the table above. In addition, the project team includes an experienced facilitator of soil testing workshops, Dr. Salvatore Engel di Mauro, a professor at SUNY New Paltz who is a paid consultant on this project. Dr. Di Mauro will also be present at these outdoor events.

Work stations will be separated by at least 6 feet and the area will be clearly marked to guide peoples’ movements in maintaining physical distance.

Personal Protective Equipment (PPE)

Personal protective equipment (PPE) must be worn while in the outdoor laboratory space, which includes disposable masks and gloves. A clean mask will be worn each day. Disposable gloves will be discarded when exiting the laboratory. PPE will be purchased through the Our Soil project (PI Abby Kinchy), stored in the indoor laboratory space at NATURE Lab, and individualized for each participant. PPE will be retrieved from the indoor laboratory space before each use of the outdoor laboratory space by one of the RPI employees listed above. Participants may choose to wear their own cloth masks if they agree to wear a clean cloth mask each day and hand wash them at the end of each day.

Sanitation

Sanitation must be performed as follows: Wipe down of contacted surfaces by each participant at beginning and end of each training. Cleaning supplies will be purchased and provided by the Our Soil project (PI Kinchy). Frequent hand washing must be employed using alcohol-based hand sanitizer or soap and water, including upon entering and exiting the outdoor laboratory space.

Participant Agreement

Both RPI employees and non-RPI soil justice fellows must agree to meet the conditions outlined in this safety plan in order to participate in the Our Soil workshops conducted in the outdoor laboratory space. They will be provided with this safety plan and asked to sign a statement saying "I have read the guidelines and agree to adhere to them while in the laboratory space." The safety guidelines will also be posted at the entrance to each space. If participants do not adhere to the safety plan, they will be asked to leave the workshops.

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These are relevant excerpts of RPI's campus protocols. I have highlighted things that should probably be in our plan or that we need to consider.

Health and Safety Protocols
As a requirement to be present on the campus and to participate in any campus-based activity, Rensselaer community members, and anyone granted access to the campus, will be required to observe, and abide by, health and safety protocols based on existing national and state health advisories, guidelines issued by local authorities, and Institute health and safety protocols. All members of the campus community, including visitors, will be informed of the new protocols. Before returning to campus, all individuals will be required to successfully complete an online training module related to these new protocols, and agree to abide by them. This requirement will be directly communicated to all faculty, staff, and students. Campus visitors will be informed of these requirements through appropriate channels.

The plan for return to in-person instruction currently includes the following elements:
Social distancing will be required at all times of all faculty, staff, students, and visitors. Faculty and staff will be expected to observe social distancing when outside of their individual workspaces, and students when outside of their individual residential spaces, and visitors as directed. This implies maintaining a minimum six-foot distance between each individual and the next closest person at all times, and in all settings.

Cloth and/or disposable masks will be provided by the Institute and are required to be worn by all individuals in public spaces on campus. Cloth masks are to be hand washed at the end of each day. Additionally, students and faculty will be provided with disposable masks which must be worn when they are in any and all instructional spaces.

Cleaning and disinfecting of personal and common spaces will be a continuous process. Protocols will be implemented that require the cleaning of workspaces, including wiping down chairs or desks before use, and for which cleaning supplies will be provided.

Campus Events and Venues: A comprehensive approach will be adopted to address the use of all venues and facilities by different campus constituents. Other than classes and dining, all campus gatherings and events will be limited to 10 people or fewer. Event spaces will be cleaned and disinfected after each use. New event protocols will be implemented to approve and monitor all campus gatherings. To further reduce risks for the campus community, the number of events will be reduced, and no external visitors will be permitted to attend any campus gathering or event. Campus event planning will have a special focus on providing opportunity for off-campus students or those who may be immunocompromised to participate in all events in a remote mode.

Research

The plan for return to on-campus research is proposed in three stages, with a fourth stage being the eventual return to near-normal operations. Movement from one stage to the next will require adherence to all health and safety protocols embedded in this plan, and will be predicated on continuing control of the COVID-19 virus on campus.

Each stage will involve two research shifts to minimize the number of researchers on the campus at any given time. The two shifts will be divided by day or by week, depending upon the nature of the research. The entry and egress times for researchers will be staggered to avoid congestion in transit corridors.

The first stage will involve a small fraction of our research community, working on critical projects, and/or at locations off the main campus. These critical projects would include COVID-19-related biotechnology research, and research in areas critical to national security. The second stage will allow about 10% of the research community on campus at any given time, and will prioritize projects with key deadlines and milestone requirements, with a focus on the academic progression of graduate students. The third stage will involve the full experimental research community, but still working in two shifts to maintain maximum social distancing.

Each stage of research restart will emphasize social distancing, to ensure only a handful of anticipated possible contacts between researchers. The University Health and Safety Protocols will be observed as outlined in the T3SQsm process. In Stages 1 and 2, all multiple occupancy offices, together with common spaces, will be closed. Graduate student researchers will not return to campus until Stage 2, unless by approved exception, and no undergraduate research students will be in the laboratories until Spring 2021, except for those where laboratory research is a curricular requirement, such as accelerated B.S./Ph.D. programs. In each stage, research personnel will use full personal protective equipment (PPE), with full training, and will require repeated daily cleaning and disinfecting of all contacted surfaces. Each principal investigator (PI) will be responsible for the weekly cleaning and disinfecting of their research spaces, including the laboratories and all other research facilities.

Lecture Rooms
a. No class assembly with N > 30 in one room
b. Student seating minimally separated by 6 feet
c. Faculty member positioned at least 8 feet from closest student and wears face shield or behind plexiglass partition
d. All students wear surgical masks

Instructional Laboratories
a. Maximum occupancy N<30
b. Experiment stations separated by 6 feet
c. Multiple sections/remote use kits and where applicable, simulations/demonstrations

Movement Protocols

a. Different entry and egress doors
b. Signage marking required pattern of movement
c. Class times staggered to obviate gatherings in hallways

Relevant guidelines for Phase 3 laboratory reopening:

The expected PPE (personal protective equipment) to be worn at all times in the laboratory when there is multiple occupancy, and in transit between laboratories, requires use of gloves,[1] lab coat or gown, mask and face shields (outside of buildings a mask must be worn). The institute will provide face shields and masks. Procurement of gloves and gowns will be individual laboratories' responsibilities. In parallel, all other existing safety procedures must be followed.[2] All PPE must be individualized.
Please advise as to whether use of expected PPE is incompatible with the research needs or with safety procedures in your laboratory. Please advise where use of PPE might have to be temporarily suspended (e.g., removal of face shields for use of optical microscopes)
Please advise of any unmet PPE needs in your laboratory.
Please advise as to whether your laboratory uses flammable chemicals and/or open flame sources.
Please advise as to where the PPE equipment for your lab and users will be stored.

Sanitation must be performed as follows: i) Wipe down of contacted surfaces by each researcher at beginning and end of each shift; ii) weekly laboratory deep clean/ sanitization (thorough disinfection / cleaning of all surfaces that may have reasonably been in contact with a researcher in the past week). Indicate in table below who will participate in weekly deep clean. Cleaning supplies will be provided by the institute. Frequent hand washing must be employed using hand sanitizer or soap and water.
Each researcher must complete training (using COVID-19 modules accessible through individual CITI accounts*, and Institute Percipio training) and have a COVID-19 test before entering laboratories (procedures to be communicated separately). Each researcher who accesses laboratories must maintain a daily log as defined separately in institute T^3SQ procedures.
Please provide a list of names that you request to be allowed to have laboratory access in this Stage using table below. Do not include researchers who returned in Stages 1 or 2.

Center Dir / Faculty Member	Name+	RIN	Graduate student, postdoc, faculty, research staff or other (define)?*	Is the individual coming from out of state? If so, from where?	Labs / facilities that need to be accessed

[+] Provide individual researcher names

*No undergraduates allowed in any laboratory in this Stage, except for those whom have research as a curricular requirement (e.g. accelerated BS/PhD programs)

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[1] Gloves should be discarded after leaving each lab.

[2] For example, laboratories that are rated as BSL-2, BioSafety Level 2, must follow all BSL-2 safety protocols.