PennState

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MEMO

Date: August 13, 2020

To: Steve Huddart, Senior Associate Dean
Charles Whiteman, Dean

CC: Keith Crocker, Risk Management Dept. Head

From: Tony Kwasnica, LEMA Director

RE: LEMA COVID-19 Response Plan (updated)

Below is a summary of the impact of the COVID-19 related shutdown on LEMA activities as well as a detailed outline of the procedure the LEMA lab will follow as we return to conducting in-person experiment on a limited basis. The following document will be updated regularly to reflect changes in procedures and requirements.

Overview

The Laboratory for Economic Management and Auctions (LEMA) provides a laboratory environment for the study of questions in business and economics in particular, and in social science in general. Lab research optimizes the amount of control a researcher can bring to data gathering, but relies on theory to guide the investigation and on field studies to externally validate results. As such, the lab is a nexus for researchers from various methodologies, as well as from a variety of fields. LEMA works to encourage this interaction, reaching out to researchers and students across areas, to promote mutual research agendas, to maximize research-funding opportunities and ultimately to produce high impact research recognized in both the academic and larger communities. LEMA is the only such facility at Penn State.

Impact of Spring Semester shutdown on LEMA

Prior to Spring Break, we implemented a number of enhancements to our safety protocols due to the pandemic including the provision of a hand sanitizing station and more frequent cleaning of high touch surfaces (computers and subject desks).

Following the announced closure of campus and move to remote instruction, we continued to meet regularly as a lab group via Zoom. The following actions were taken:

- Cancellation of all in person human subject experiments for the remainder of the Spring Semester.

- Cancellation of all LEMA seminars scheduled for the remainder of the Spring Semester.
- Discussion about whether conducting virtual/remote experiments was practical during the Spring Semester. All researchers expressed that it would be difficult to quickly change to a remote version and that data quality would be dramatically impacted. All researchers ceased collecting data during the Spring Semester.
- Continued discussion in lab meetings of experiment results and projects so researchers could continue to advance their experiments where data was already collected, or designs could continue to be refined.
- Formulation of a LEMA COVID-19 response committee (Kwasnica, Moritz, Sharma, Tergiman) to develop specific protocols regarding a return to research in the Fall Semester.
- Discussions with various stakeholders regarding the university's response to the pandemic including Matt Mooney (RIIT) and Meg Meloy (Marketing).

Planning for a return to research in the Summer and Fall

Reopening the LEMA lab is of the highest priority. Experiments utilizing the LEMA lab serve as the primary data source for many of the researchers associated with LEMA. As such, the closure of the lab has meant that these researchers have been largely unable to conduct their research. Thus, it is our position that returning the lab to some level of research productivity is mission critical and should be of the highest priority over the summer. In addition, many of the experiments were part of sponsored research projects (DARPA, FAA, Sloan, USDA and others). While most granting agencies quickly provided no-cost extensions, a further delay might jeopardize the ability to complete these projects in a timely fashion. Failure to deliver on these sponsored research projects would jeopardize the researcher and university's reputation and our likely ability to obtain funding in the future.

Conducting remote experiment is impractical in many cases. While many laboratories on campus including the Marketing Behavior lab have similar issues, the nature of LEMA experiments and research presents a number of unique challenges that has been the focus of our efforts.

- LEMA experiments tend to be synchronous and interactive in nature making remote delivery difficult or impossible.
- Vernon Smith (*American Economic Review* 1982) defined two fundamental concepts of *salience* and *dominance* for successful economic experiments. These concepts require that the studied economic institution be the primary factor in choices (*salience*) and that the potentially variable financial payoffs from those choices are the *dominant* factor in subject decision making. In many cases, these concepts can only be adequately achieved via in-person laboratory experiments where each subject's attention is focused on the relevant task and other external factors are limited. Any data collected remotely is likely to be much noisier requiring larger sample sizes (and more money).
- LEMA experiments all involve cash payments as the primary motivator of decisions. Timely payment based upon performance is foundational to experimental economics methods and is difficult to achieve in a virtual setting.
- The subject pool utilized is members of the Penn State community (generally students) who have expressed interested in experiments by voluntarily registering with our

recruitment database. For PSU IT security reasons, all participants must have a PSU ID to participate.

- When conducting experiments, it is important that certain subject populations are not systematically excluded and that participants do not perceive an increase in risk as a result of participating in the experiments. Thus, it is particularly important for us to be extremely clear and careful about cleaning procedures and to do things like having a supply of mask even if the university may not make such things generally available to the student/faculty/staff population.
- For obvious reasons (detailed below), experiments will likely involve smaller numbers and longer gaps between sessions. Combined with experiments cancelled during the Spring Semester, demand on laboratory time will be at a premium. Any additional administrative or logistic burden that delays experiments in the fall will negatively impact research productivity.

In person experiments involve less risk than in person classroom instruction and LEMA protocols are already in place to meet or exceed PSU, PA Dept. of Health and CDC guidelines. Experiments conducted in the LEMA lab are almost always declared 'exempt' by the IRB, which is an indication that the experiments themselves pose little to no risks for the subjects beyond what they incur in everyday life. Similarly, our experiments are generally computer mediated in semi-private computer carols where verbal communication between subjects is not permitted. The typical duration of an experiment is 90 minutes or less. Other than instructions and payment, the direct interaction between the experimenter and subjects is minimized; the protocols below suggest methods to further lower direct interaction between the experimenter and subjects. These factors all suggest that participation in an experiment is less risky than attendance in class for both subjects and experimenters. Further, the LEMA web-based recruitment system tracks participant attendance so that a complete list of experiment attendees (name, email, phone) is available in the event we learn of infection risk. Finally, the recruitment system also allows experimenters to report any adverse events (such as concerns about disease transmission) immediately. The lab had already begun regular cleaning of work stations and provision of hand sanitizer prior to the university shutdown.

Recognizing these challenges, members of the LEMA COVID-19 response team in consultation with other LEMA researchers and the RIIT group have established protocols that we believe can allow the laboratory to return to data collection in a safe and effective manner.

In-person laboratory experiments that adhere to appropriate health and safety guidelines. The guidelines established by the response team are the following:

1. Reconfigure laboratory to allow 12 subjects plus 1-2 experimenters. Laboratory configuration and capacity has been coordinated with the facility coordinator and OPP.
2. Subjects provided access to and asked to use hand sanitizer before seating themselves at a terminal.
3. Appropriate mouth and nose coverings for anyone (subjects and experimenters) in the lab is required with a supply of standard surgical masks available to subjects who show up without a mask. Subjects refusing to wear a mask will be excluded from the study.
4. Signage and communication are provided reminding subjects that they should not participate if they have any signs of illness (cough, fever, etc.) or have come into contact

with someone presumed or known to have COVID-19 as per university policies. Similar information is incorporated into web-based recruitment system and emails. Screening questions/affirmations will be consistent with those recommended at https://www.research.psu.edu/covid_orp_screening. Experiment signup procedures will be modified to allow subjects to cancel at any time before the session without penalty.

5. Sign in for sessions continues to be done in a contactless manner via card swipe and the experimenter dealing with exceptions from a distance. If required, we could also check subjects temperature as they arrive via a remote, non-invasive thermometer.
6. Whenever possible, instructions, informed consent, etc. is provided electronically so as to minimize the amount of paper that has to be passed from hand to hand. Whenever paper copies must be used, efforts are made to limit contact to a minimum of individuals (e.g. use for only one session etc.).
7. Experimenters may wish to pre-record verbal instructions so as to minimize direct verbal communication with subjects.
8. Physical contact during the payoff process is minimized or eliminated. Payment will be in the form of an electronic payment via PayPal or LionCash.
9. High touch surfaces (computers, desktops, etc.) are cleaned regularly consistent with university protocols and manufacturer recommendations for usage. Participant used surfaces (computers, desks, etc.) are cleaned between each session. Experimenter used surfaces are cleaned at least daily and between rotation of experimenters. Appropriate dwell time for cleaning is allotted between sessions.
10. Required time between sessions increased from 15 to 30 to minimize contact during transitions and allow for cleaning.
11. When practical, ventilation is increased by opening windows and doors.
12. Appropriate surgical gloves are made available to researchers who cannot easily avoid contact with multiple touch points and people in the course of conducting the experiment.
13. Subjects will be asked to wait outside (in the courtyard) or in the hallway near Business 115 if the laboratory door is not open. Signage, email communications and experimenter monitoring will enforce appropriate social distancing while waiting for the session to start. The door to the laboratory will be opened early (approximately 15 minutes before) to allow subjects to be seated as they arrive. Appropriate signage will be provided.
14. Any exceptions to these procedures are reported immediately to lab managers/directors.
15. All researchers will be provided a copy of the safety protocols and will be asked to sign off on their acceptance of these requirements. The COVID-19 response team will continue to review and update these protocols as new information becomes available. The Dean's office will be notified of any significant changes and will be updated on or about October 1 of how the process is impacting research.

Prioritizing research for return to in-person experiments.

Not all research typically conducted in the LEMA lab will be able to return in the Fall semester. The following priorities shall guide the research projects that seek to return first.

- Experiments that are highly synchronous and interactive in nature that cannot easily be conducted remotely or where communication between subjects may impact study outcomes.
- Projects that involve non-tenured, tenure track faculty members.
- Projects that involve sponsored research.
- Projects where data collection has already begun in-person so that remotely collected data might lack comparability.

Planning for rapid return to early phases due to resurgence of disease prevalence.

If in-person instruction at University Park is halted or if the Office of the Vice President for Research calls for restrictions on in-person experiments, in-person experiments will be halted. In either event, the laboratory will close and all future sessions will be canceled. The procedures in the short term are similar in that sense to what we do during any university cancellation such as a snow day. Since studies typically involve a single interaction with a subject, there is little difficulty in halting studies except the inability to complete the data collection.

Some studies where due to size restrictions small (12 person or less) studies are not practical or, due to the nature of the study, remote/virtual experiments are feasible, will already be using a virtual setting we are developing in parallel. Some in-person experiments may transition to this environment, but, as stated earlier, it is simply not practical for many of the studies being conducted.

Virtual experiments for larger experiments or in the event of cessation of on campus instruction. While in person experiments are strongly preferred for many reasons, we cannot afford to cease data collection for another semester. Given the limitations of the protocols above, it may still be necessary to offer some experimental sessions virtually. As such, the following general procedures have been developed in consultation with the RIIT group.

1. Recruitment of subjects continues through standard LEMA system.
2. Subjects arrive at a virtual session via a Zoom enabled webinar (one-way communication) with appropriate security protocols enabled for check-in and instruction.
3. Subjects are provided with a personalized link that allows them to login to a virtual server environment similar to smealapps.psu.edu and starts the experimental software (typically ztree). For most experiments, the subjects participate in the experiments similarly to how they would if they were seated at computer terminal in the physical lab. The exact structure of this could vary based upon the experimental software used.
4. At the end of the experiment, subjects are paid electronically via Paypal or something similar. Payment must be nearly immediate to satisfy standard experimental design concerns; subjects waiting for a check or direct deposit from PSU minimizes the impact of cash incentives.
5. In all cases, the experimenter will have to test and potentially modify their experimental software to meet the unique virtual setting. Issues such as timing, subject attention, and salience of treatments will have to be addressed. As such, if a virtual

environment is to be used, it must be available to the experimenter well before the actual experiment date (at least 2 weeks).

Finally, a significant portion of LEMA's research mission is the regular hosting of a research seminar. Given the financial and travel uncertainties, we are planning on inviting speakers in the fall who can easily pivot between in person and a virtual seminar format. However, it is our feeling that in person research seminars are vital especially for building research collaborations amongst junior faculty and graduate students. Therefore, we earnestly desire to return to in person seminars as soon as is practical. For example, we plan to invite closely located speakers in the fall who can travel here if regulations allow it. In all cases, we will endeavor to provide seminar and individual interactions with speakers in a virtual format for researchers who are at high risk.

Prioritized timeline of task to be completed before the start of the Fall semester

Phase 3 – Phase 4 (approximately July 1-August 15)

- Procurement of appropriate PPE and cleaning supplies needed for reopening of lab and conduct of in person experiments.
- Establish protocols and allocation of labor for appropriate and timely cleaning of the laboratory.
- Make any modifications to the physical lab structure (such as placing plexiglass dividers and posting signage) to allow appropriate social distancing requirements to be met.
- Confirm and establish an efficient protocol for electronic payment of subjects using a digital payment device such as Paypal. Note: one of our researchers in the College of Agriculture received approval for payment from a research account to a Paypal business account which then allowed batch electronic payment of subjects. It is our hope that a similar procedure can be developed that works for any LEMA researcher wishing to use electronic payment.
- Continued development and testing of virtual experimental environment with the RIIT group.
- Modification of LEMA recruiting database and website to be consistent with the changes in protocols detailed above.
- Experimenters begin testing experimental software in preparation for return to human subject experiments.
- Bi-weekly lab meetings held to coordinate on protocols etc.

Phase 4-Phase 5 (approximately August 15 and beyond)

- All researchers are trained on appropriate protocols and receive information regarding lab specific policies.
- Human subjects experiments are scheduled and conducted when permitted.
- Weekly lab meeting are held to coordinate on lab usage, protocols and other issues arising.
- In person experiments do not continue past the final day of in person instruction on campus and only begin again when permitted in the Spring.

Appendix

List of personnel that may return to research

In general, not more than 2 researchers/staff members will be in the laboratory at any time. During the process of ramping up research and lab operations, the lab scheduling system will be utilized by researchers to track and limit access to the lab.

Faculty and Staff that must return to campus to prepare to return to human subjects experiments and then to conduct experiments when human subjects experiments are allowed. The impacted faculty are listed below.

- Anthony Kwasnica (amk17) Professor of Business Economics and Director, LEMA (already approved by Provost)
- Rashmi Sharma (ros5253) Assistant Clinical Professor of SC&IS and Managing Director, LEMA
- Saurabh Bansal (sub32) Associate Professor of Supply Chain Management
- Brent Moritz (bbm3) Associate Professor of Supply Chain Management
- Mostafa Sabbaghi (mzs1252) Assistant Teaching Professor of Supply Chain Management
- Chloe Tergiman (cjt16) Assistant Professor
- Martina Vecchi (mmv5343) (Assistant Professor of Agricultural Economics, College of Agriculture)
- Members of the Smeal College RIIT group in charge of IT support in laboratories (Jordan Rose & Graham Lockard and others?)

Supplies Needed

- Hand sanitizer refills for hand sanitizer station in lab
- Supply of cloth/procedure masks
- Gloves for experimenters
- Appropriate disinfecting supplies for cleaning high touch surfaces
- Clorox disinfecting wipes or isopropyl alcohol wipes for cleaning of computers
- 2 infrared thermometers (if required)
- Appropriate signage regarding health pre-screening and social distancing

Cleaning Protocols

- To be established in conjunction with Smeal College RIIT group