Scenarios for Rearranging Research Priorities

All of these scenarios necessitate a firm and intentional shift toward a team-based approach to your research programs. No matter how collaborative your group may have been before, it will be crucial to ensure that you foster a collective sense that everyone is contributing to the success of the team and the progress of the research mission, regardless of the scope and scale of the contribution. Trust, patience, and generosity will be key.

Pre-Return to Lab
Research of the literature

The technician in the lab is normally responsible for preparing reagents and supporting experiments (all lab-based activities). New data has taken the research portfolio in a different direction that was unanticipated and an area in which the lab has little familiarity. The technician could be charged with doing research of the literature and in turn sharing what they learn with the lab to inform data interpretation and research direction.

Combining skills development with meaningful data analysis

Many trainees are taking the opportunity to develop skills in statistical analysis or programming, with the hope that these skills will be useful in their research or can be included on a CV for future positions. The trainee *could* use publicly available datasets, even data that's of interest like the JHU COVID data, but it would be more meaningful and motivating if skills development could be tied to the lab's research program. Trainees could analyze datasets that would otherwise be outside of their personal project - helping others in the lab, or even collaborators.

Preparing for re-opening

Resumption of research will likely take longer than the shut-down. A cohesive and coordinated plan for prioritizing experiments, and for ensuring everything is in place, will help get things ramped up quickly. As a group, undertake an assessment of the full research program, and the constraints that each trainee is operating under, to develop a lab plan for eventual return to work. Foster a fully integrated team approach in which everyone contributes to the whole, and everyone benefits. Design tools and reagents so that they are ready to be ordered and delivered ASAP. Even better if you can submit orders, where companies are still operating (eg. Twist Bioscience is still making oligos!).

Improve rigor and reproducibility...

... while preparing papers, grants, and for lab reopening. It's not the most exciting of tasks, but crucial to science. Organizing datasets, creating databases for reagent tracking, or getting up to speed on electronic notebooks can help people reintroduce order and control in their lives, which is especially important in an uncertain and chaotic situation. Different trainees can be in charge of different projects: organizing plasmid tracking and naming conventions; setting up databases; learning and training around the use of electronic notebooks etc. Again, foster a fully integrated team approach in which everyone contributes to the whole, and everyone benefits.

Identify gaps and opportunities

Examine the full scope of the group's research/scholarly mission, identify opportunities for forward momentum, and match people/skillsets to those opportunities.

Post-Return to Lab: Ramp-up and Beyond

Planning, planning, planning
Extensive planning, with continual assessment and adjustment, will be necessary. It is crucial to engage with your full team in developing your research plans.

Establish new incentives around project ownership and authorship, in order to incentivize lab members to collaborate

To continue on COVID or not to continue on COVID
-Is it the PI's interest or the student's interest to turn away from previous projects and toward COVID projects?
-How do you assess the trainee's interest, abilities and how repurposing will affect progress?
-Consider trainees' stage (Jr vs Sr student, Jr vs Sr postdoc) and how major shifts in research focus impacts desired outcomes.

Discuss career goals alongside the research goals, particularly for late stage trainees
All prospective employers seek employees with demonstrable accomplishments and skills, and a high impact paper is just one of many ways to showcase these. In fact, a high impact first author paper is unnecessary for most career steps outside of academic research. What experiments are truly necessary to graduate? What non-experimental research related steps can be taken to round out a postdoc's skillset? Help your trainees create an inventory of accomplishments and skills that might not have been published in peer-reviewed literature. NOTE: academia is experiencing hiring freezes but industry is hiring.

Develop methods for remote collaboration and training
Sooner or later new members will have to be trained, and standing next to each other may not be possible. Take the time to develop methods – setting up webcams or phone/ipad holders to enable remote demonstration and training.

Collaborate on reagent generation and purification
Can one person run multiple experiments in parallel, in service of multiple research projects? Many techniques can be scaled up, eg. Protein purification, and for 50% more effort one person could purify multiple experiments' worth of reagent. Capitalize on the interests and skillsets of each team member.

Equity when some can't get to lab (caregiving, vulnerable health condition, or challenges with transportation)

1) Assess career goals – maybe experiments aren't necessary at this stage? Can the trainee work on grants, papers, computational analysis in service of both lab progression and skills development?
2) Collaborative project development: can a technician or other research staff support the research needs of the project, while the trainee focuses on the data analysis and interpretation?
3) Flexibility in scheduling – ensure those with the greatest logistical challenge receive priority scheduling
4) Remember that equal time in the lab is not the same as equitable access/support

Arrange shifts around common projects – two possibilities
1) Arranging for people working on the same project to take sequential shifts might help the project progress faster. The person in shift 2 can pick up where the person on shift 1 left off.
2) Arrange for people on similar projects to be in the lab in the same shift to provide opportunities for collaborative discussion.

Post-Return to Lab: Keeping up morale, treating trainees equitably

Ask your trainees to apply IDP phases to add clarity to their concerns about re-opening your lab (Assessment → Career Considerations → Goal Setting → Implementation)
What constraints do they have for getting to lab, incl parking, distance, time of day
What concerns do they have about safety getting to lab or being in lab
Isaac add questions here?

Gather information: Collect and review responses then incorporate into your lab re-opening plans, keeping morale up

Meet with your team to convey plans on video and discuss
-Communicate that you have heard them when you announce plans
-You might have to use the language "I have made some decisions about how the lab is going to run. I know that they don't meet all of the needs that all of you have. I'm sorry for that and I thank you for sticking by my decisions anyway." This approach lessens the impact.