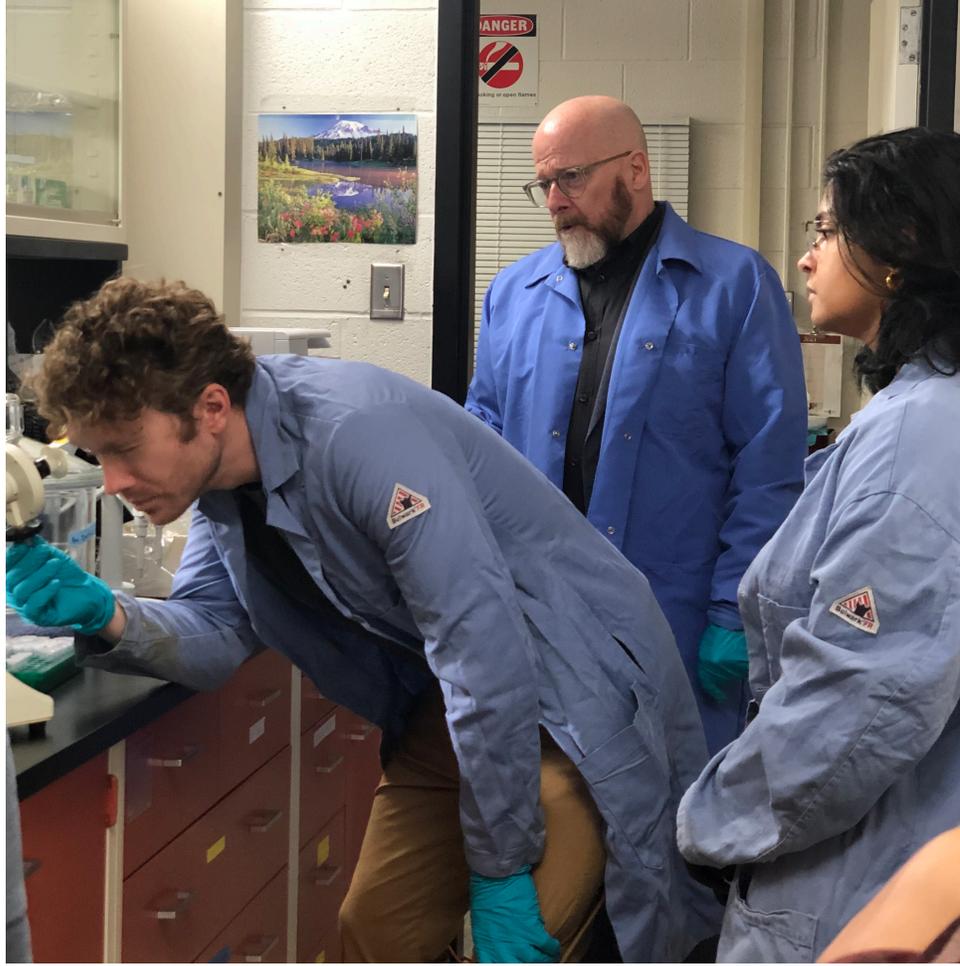


# Labs That Work

## FOR EVERYONE

*An Intentional Professional  
Leadership Curriculum  
Tailored for Researchers  
at HHMI and Beyond*



L A B D I S C U S S I O N G U I D E

# Cultures of Excellence

*ncpre* National Center for Principled Leadership & Research Ethics

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## Purpose of Having Discussions

LTW is a professional development program, designed to help participants consider their own values and develop their professional skills to manage themselves and their careers. The role of facilitated discussion sessions is to provide structure and space for participants grapple with the material and engage in reflection. The goal of these sessions is not to "teach" content or impose anyone's views, but rather help guide people through a process together.

Interacting with other program participants allows for consideration of different values and perspectives. Being exposed to a diversity of perspectives will extend the value of this program and promote deeper reflection and learning. Group discussions also provide the facilitator (e.g. educator or lab head) a better understanding of students'/lab members' backgrounds and needs, as well as insights into their own teaching/managing style.



## WHO CAN BENEFIT FROM USING THIS GUIDE?

Anyone looking for support and ideas about how to structure and lead discussions focused on the LTW program. One thing to keep in mind is that how you conduct these discussions is not a one-size-fits-all. Do what feels most natural to you, using this guide as

a roadmap. Expect some discomfort, especially if you are not used to this style of conversation or to discussing these kinds of topics.

## LTW Time Commitment and Approaches

As the head of a lab whose lab members are participating in the LTW program, you will have your own goals and considerations for structuring your discussion sessions.

One of the first decisions you will have to make is to decide how frequently you will want to meet and what the focus of those discussions will be. Here are two options to consider:

**A. Episode-specific discussions.** You may want to have a discussion after each episode or group of episodes. This structure will work well to keep everyone in your lab going through the program together and learning together; however, it is the most time consuming. If your lab participants are going through the logbook at the same time you could devote 20 to 30 min of your weekly lab meetings to discuss 1 or 2 episodes as suggested in Figure 1.

- A possible schedule might be: 24 sessions, 30 min each every week, with two additional 90-minute sessions for lab iREDS data management discussions (facilitated by an LTW project team member), for a total of 15 hours.

**B. Act-based discussions.** Your lab members will go through the content individually, completing logbook reflections and exercises as they move through the episodes; you may schedule discussions at the end of each Act to reflect on the main takeaways. The advantage of doing the program this way is that it provides more flexibility to lab members and requires fewer meetings.

- A possible schedule might be: 5 sessions (Introduction, Act 1, Act 2, Act 3, Module 1 wrap up) each about 90 min to 2 hours every four to six weeks, plus two additional 90-minute iREDS facilitated sessions for a total of 13 to 15 hours. See Figure 2.



This discussion guide provides sample sessions for both of these options, as well as suggestions for incorporating discussions about what sections to consider for inclusion in your lab manual and what information should be part of each section.



## Considerations for Lab Heads

Consider whether you want to have a program launch event. Everyone could, for example, watch the film together before embarking on program. The benefit of a launch event is that everyone starts at the same time, and it signals the importance of the program. One of the drawbacks is that the film covers some difficult topics and it may be emotionally draining for people who have experienced some of the situations depicted in the film. Another option would be to watch the first act together only and then everyone can watch the rest on their own time.

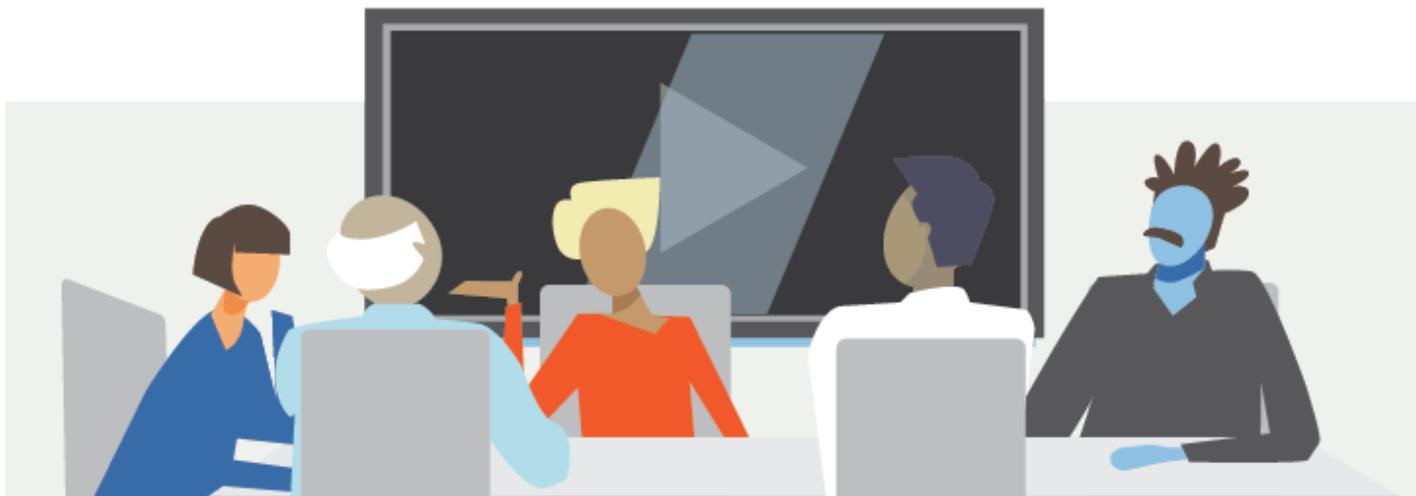
Consider how new members to the lab will experience the program. One option is that every two years any new lab members who joined will complete the program and you might schedule a refresher session for the whole lab to attend.

It is important for the lab head to signal to lab members the value of this program and the commitment to rigorous, ethical science and an inclusive lab culture. As a lab head, you will need to balance your need to be involved with letting members of the lab discuss some things on their own. Some questions you might ask yourself as you consider this balance:

- How open can lab members be in your presence? If you are not used to discussing topics focused on culture and identity in the lab you may want to start with the science or lab manual discussion questions in the episode-by-episode discussion approach.

If you think you need additional support in lab discussions you can contact the LTW group at [LTWPilot@hhmi.org](mailto:LTWPilot@hhmi.org).

Consider practicing some of the tools and skills presented in the logbook (such as the DMF, And Stance, active listening, asking questions, identifying TRAGEDIES) as a lab. For example, you could ask all lab members to use the And Stance during a lab meeting.



## How To Navigate This Document

This document provides some background information on how to facilitate, and menus of **example discussion session formats**. This document provides some background information on how to lead discussions, and menus of discussion session formats. The example discussion sessions reflect two options: A) Episode-specific discussions (shorter, more frequent sessions), and B) Act-based discussions (longer, less frequent sessions). Each example discussion session provides a suggested preparation and structure, along with discussion questions and activities.

The Episode-specific option provides three strands of questions for you to choose from each week:

**Program reflection questions:** questions that ask participants to reflect on some of the situations presented in the film and the exercises they completed in the logbook

**Science questions:** questions focused on science issues presented in the film, and

**Lab Manual questions:** questions that will help guide the development of a new lab manual for the lab.

You may choose the same strand every week or switch between strands from week to week depending on your goals.

In addition to these approaches, the guide provides additional discussion prompts, activities, and sample materials that you may wish to incorporate in your sessions.

This document and associated slides are yours to modify. Take or leave what you deem necessary. You may omit or modify content to meet your goals and participants needs.



## Getting Started

### Best Practices for Facilitation

- **Embrace uncomfortable silence.** It is okay to have silence in the room to allow participants to think about their responses. When teachers wait at least three to five seconds after a question, they allow time for greater engagement and achievement. Unfortunately, teachers behaving “normally” only tend to wait about one second (Tobin, 1987).
- **Encourage participation from everyone.** Watch the room and look for balance: there may be some voices that try to speak frequently, leaving others little space to share their own thoughts.
  - One protocol that can be helpful is set as a ground rule that you will go around the room and allow everyone to make a comment at some point, possibly the very end.
  - Don't let one person dominate the conversation. This can be done in a non-threatening way by saying something like, “This is an interesting point and I would like to also hear from some of the people we have not heard from yet.”
- **Acknowledge power and privilege in the room.**
  - Assume power dynamics are present in any group. When you develop guidelines for discussions for the group, encourage participants to think of norms that will foster “shared power.”
  - Encourage everyone to participate, focusing in particular on individuals who have less power in lab either because of role, positional status, age, race, gender, or other factors. Encourage people with traditional forms of formal power to do more listening than speaking.
  - As the lab head you will likely have the most power in the room. Acknowledge this fact. It is important that you don't do most of the talking or correct others when they have shared their perspective. Stay as impartial as possible and open to different perspectives.

- **Respect different opinions.** Model acceptance of a range of opinions, ideas/ thoughts, and also show that you can all disagree--and sometimes should. If everyone agrees on every point, there's really no discussion at all.
  - Have a set of personal scripts for modeling how to react to disagree with a statement (see *Appendix B*): things like "What you just said doesn't align with my experience because \_\_\_\_" rather than "Wow, you're so dumb for thinking that." or "That doesn't make any sense."
  - Be prepared with personal scripts for those rare circumstances where someone says something offensive to you or any other participants. See (see *Appendix B* for suggestions). See attachment [link] on "oops/ouch" protocol for difficult discussions.
  - While you may need point out ideas that are disrespectful of others, don't impose your views on the group, and that you keep others from doing the same.
- **Use both/and thinking.** Practice replacing "but" with "and" when speaking. If you are not used to using and, you may practice the skill following the protocol suggested in *Appendix C*.



- **Own your perspective/experience.** Use "I" statements when sharing your ideas and encourage participants to do the same. Your perspectives may not be the same as others, so the use of "I" statements takes away the generalization Example: instead of "People in this department are not very friendly and they make many people feel excluded." Try saying "I often feel excluded and that I don't belong in this department." No one can argue with your perspective. Facilitators should encourage the participant to take responsibility for his/her own experience rather than projecting it onto fellow participants. CKG: do we need more scripts for this? linked?

- **Develop discussion guidelines that everyone can agree on.** When you want folks to feel invested in following the rules and feel a sense of belonging in the group, the best way to go is to have the group develop them as one of the first steps in the process. Spend at least 10 minutes at the start of the first discussion session to come up with a list of discussion guidelines to which everyone agrees and review the guidelines periodically. Often people may have different ideas of the meaning of particular words (e.g. respect, inclusive, etc.); it may be useful to explore those words in more depth. When a discussion starts to go off track or get contentious pull up the discussion norms to remind everyone of their agreement.

- Examples of discussion etiquette:

- One person speaks at a time
- Listen to what other people are saying
- No mocking or attacking other people's ideas
- Respect each other
- No raising of your voice
- Be fully engaged
- No eye-rolling or heaving sighs
- Take responsibility for your words
- Respect confidentiality. What is said here stays here.
- Raising your hands to speak.
- Minimize use of technology (checking emails, texts), except for emergencies.



**Watch your biases.** Don't ever call on someone from a particular culture, race, or background to speak for everyone else from that situation. If you slip up and do that, acknowledge your mistake.

**Be willing to discuss feelings and emotions.** It can be tempting for lab members to stick to the content and tools and not acknowledge feelings and emotions that are coming up in the discussion. *Although it may be uncomfortable for you to talk about feelings, try to sit with that discomfort.*



## When Conflicts Arise

- Remind everyone of the guidelines of discussions that you agreed to
- Have personal scripts ready to acknowledge the conflict and diffuse the situation (see Appendix B)
- If you say something that is hurtful or problematic and you realize it, you can say "oops" to acknowledge it and then try again. Alternatively, if someone else said something harmful or problematic then you can say "ouch," which lets everyone know that there's something that needs to be discussed further.
- Call people in rather than out. For example, if someone uses a word that is considered a slur, explain why you would never use that word and why
- When it comes to triggering content or conversations-- allow participants to leave the room or take a break.

## How To Keep Sessions on Schedule

- Sharing the agenda and discussion prompts ahead of the session may help the session run more efficiently as lab members will have a chance to think about what they want to say ahead of time
- Every group has people who like to share what they are thinking more than others and may take up more time during a session. To keep discussions on track and on schedule it may help to provide additional ways for people to share their ideas. For example, you may set up a shared document where people can share their ideas after the session. If your lab uses Slack or another messaging tool, consider setting up a Slack channel where lab members can continue to share after a session.
- Sometimes things come up in discussions that are not aligned to the topic of discussion. Encourage lab members to write down these ideas somewhere so that they can be revisited at either a later session or in some other forum.
- This guide provides suggested times for various discussions. Times will vary depending on the size of your lab and the people in your lab. Try to keep discussions focused and on schedule to the best of your abilities; however if discussions run long you can always cut out some of the planned discussions or provide other ways for people to share ideas. After the first session you will get a better sense of what timing works best for you.



## Practical Considerations

- Deciding on schedule and location
  - You may do a short survey to agree on a schedule for these sessions or do them at a time regularly scheduled for lab meetings.
  - If you are meeting in person, having chairs in a circle (vs. classroom style in rows or desks, where some members have their backs to others) or around a table encourages discussion, equality, and familiarity.
  - Meeting online may help with access and make everyone, regardless of whether they are on site or somewhere else, feel included. If you are meeting online you may want to include guidelines about camera use and how to ask questions (e.g. use raised hand function in Zoom) in your discussion guidelines.
- Deciding on length and structure of each session
  - You may do a short survey to agree on the appropriate length for these sessions
  - Determine where breaks will be built into the session.
- What materials to provide
  - Consider whether you will need a projector, whiteboard, access to computers
- Deciding on group discussion logistics
  - Depending on the size of your lab you want to have some discussions in smaller groups of 3 to 4 people and then share out with the whole lab. The advantage of using breakout groups is that they give more people a chance to speak. In addition, some people may feel more comfortable sharing their perspectives with a smaller group than with the whole lab and lab head.
  - If you will breakout groups decide whether these will be assigned at random or strategically. Consider power dynamics as well as the gender, racial, ethnic identities of people in the groups.
  - If your lab is less than 6 people, it's probably most efficient for everyone to discuss together.
  - Assign roles for people in a breakout group (e.g., notetaker, discussion lead, reporter); if you don't have breakout groups you may assign someone to be a notetaker on a rotating basis.

- How to communicate to participants

- **Prepare your session agenda** before or at the beginning of the session and share it ahead of time so everyone knows what to expect for the day. Share some of the documents and discussion prompts with participants in advance so they come ready to the session (see Appendix A.)
- **Know your takeaways** for the session and have summary statement ready for the end of session and possibly share in a follow up email or post. It may help to set up a shared folder where you keep all the notes and documents so that lab members can review what was discussed and/or add additional thoughts.
- **Make a note of any possibly triggering topics** and communicate those ahead of time. Mentions of topics like suicide, racism, and gender and sexual harassment are mentioned throughout this program, and some participants may be sensitive to these topics. Make provisions for accommodating those that are uncomfortable.
- **If your lab uses Slack** or some other messaging system, consider creating a channel for the LTW program in which people can share reflections or ideas. Make sure that you develop discussion guidelines for the channel if you have not already done so.



### Additional resources for leading discussions

<https://www.ucar.edu/who-we-are/diversity-inclusion/community-resources/ground-rules-tools>



## Structuring Discussion Sessions

### First Discussion Session

Include these elements for the first discussion session regardless of whether you are following the Episode-specific or Act-based options.

#### 1. Review Goals of the LTW Program and of the Discussion Sessions

#### 2. Openings/Introductions

**Example 1.** A quick check-in on days that may have a lot going on in the world, ask (go around group)

- What percentage of your mind is here today vs. elsewhere?

**Example 2.** A slightly longer way to engage the group with each other would be to ask each person to share a success, challenge, or idea.

- Success = A highlight, success, or something positive that happened today.
- Challenge = A challenge you experienced or may want more support with.
- Ideas = New ideas that have blossomed or something you are looking forward to knowing more about.

#### 3. Guidelines for Discussions

- Lead lab members to discuss and agree to uphold discussion guidelines (see Best Practices of Lab Discussions on [pg. \\_\\_](#)).
- Prompt participants with some of these examples on [page x](#): These may get people thinking and considering what they want to value in discussion.
- Once the group agreement is finalized, make a copy and bring it up during other discussion sessions or when conflicts arise.

#### 4. Structure

- Go over schedule, roles, communication, and other logistics for the discussions.

#### 5. Group Discussions

- depending on the time you have available you may include one or two discussions in your introductory session.
- for the first group discussion you may want to ask participants to discuss what they would like to get out of these sessions and/or share any concerns or needs that they have to make these discussions successful
- consider whether you want to have a whole lab discussion or assign lab members to smaller groups and then share out with the larger group (see Best Practices for Lab Discussions page x)

## 6. Wrap-Up

- give participants 5 min to write down key take-aways (choose from menu of reflection prompts)
- you can also have participants go around the room and share these insights with the group (i.e. what they learned, how it is applicable to their lives, etc.)
- you can also have participants reflect on the discussion session itself-- what worked and did not work (e.g. use the start, stop, continue, change protocol.
- you can also have participants reflect on the discussion session itself and share out what worked and did not work (e.g., what should we continue doing, stop doing, or start doing)
- revisit the norms of discussion and ask lab members whether they want to make any changes based on how this first discussion went

## Suggested Structure for Subsequent Sessions

Most sessions should include the following elements:

- Session goals
- Agenda and any content warnings
- Discussions and share-outs
- Wrap up and reflection



## Episode-Specific Discussion Prompts

If you chose to meet with your lab every week for 30 min, these discussion prompts will help you guide a discussion centered around each episode or couple of episodes. You may group episodes as follows: (content from here: <https://uofi.app.box.com/file/94976766892?s=zdvoo88eaijjetlocx0jp5rqh6tmd4l7>)



Each episode includes an episode summary (as a quick reference of what happened in that episode of the film) and a logbook summary (which activities lab members should have completed on their own in the logbook). These summaries are followed by groups of discussion questions. Most episodes have three strands of questions for you to choose from:

- Program reflection questions: questions that ask participants to reflect on some of the situations presented in the film and the exercises they completed in the logbook
- Science questions: questions focused on science issues presented in the film, and
- Lab Manual questions: questions that will help guide the development of a new lab manual for the lab. If you choose this strand of question, keep a running document of the Lab Manual sections that you want to include and what information to include in those sections.

Choose the approach that best fits or seems most most helpful for your lab as you work through the program.



## EPISODE 1.1

*Episode 1.1 can be grouped with episode 1.2. Pick questions from either episode and strands.*

**Episode Summary:** New grad student Ana Sofia Flores arrives for her first day in the lab of Dr. Jules Sorenson and finds herself immersed in the interpersonal dynamics of a high-productivity research lab. She accompanies postdoc Dr. Jayna Bell to a meeting with colleagues in a collaborating chemistry lab led by Dr. Malcolm Heideberg. Tensions rise over the differing working styles and objectives of the two labs; the chemists and biologists “other” their colleagues based on their disciplines, dismissing their work and its value.

**Logbook Activities:** Values exercise

### Program Reflection Questions (Cultures of excellence and values):

- What did you notice about the interactions portrayed in this episode? List examples of positive interactions and negative interactions (or conflicts).
- Think about the conflicts shown in this episode. How do they reflect conflict among strongly held values (either within one person or between individuals)?
- List specific examples in this episode that illustrate cultures of excellence and that undermine culture of excellence
  - which of those elements can be affected by your own conduct?
  - which of these elements can you observe/detect as you think about joining a lab?
- What is the connection between values and cultures of excellence?

### AND/OR

If lab members have questions about how values can impact the culture in the lab, present simple examples where values may conflict and ask lab members to think through how they might choose one value over another.

- Offer a simple example, like working with a group to order a pizza. If a lab member values fairness, perhaps each person gets to pick a topping – pepperoni, mushrooms, and onions. If that same lab member also values loyalty, and knows that one person refuses to eat mushrooms, they now have a conflict of values. The choice they make indicates which value means the most to them in that situation.
- Providing examples of simple, low-stakes, everyday values conflict sets the foundation for understanding the concept of ethical dilemmas. Entry-level discussions are best run with simple examples, saving more fundamental conflicts – such as, confidentiality at work over sharing information that would benefit a friend, family over honesty, etc.—for later discussions.

### Science Questions:

- In the instance described by Jayna, what could account for the inconsistency in results?
- Thinking specifically about the collaboration portrayed here, is there really a “bio” side and a “chem” side when it comes to figuring out the problem?
- In this instance, where does the primary responsibility lie for figuring out the cause of the inconsistent results?

### Lab Manual Discussion Questions:

- What information would be helpful to have in advance, or available on your first day joining a lab to understand the lab culture and values?
- Where in the lab manual would you include this information?
- Which lab manual elements and/or lab practices can support cultures of excellence?



### EPISODE 1.2

*Episode 1.2 can be grouped with episode 1.1 and therefore has fewer questions.*

**Episode summary:** Jules is in a hotel lobby, getting ready to head home from a conference when she learns a pending grant has been awarded. She shares the news with Dr. Evelyn Towne, a colleague who attended the same conference. They talk about what lab growth means as the PI shifts from hands-on involvement in day-to-day activities to a bigger-picture role. Evelyn offers some advice.

**Logbook Activities:** Individualized Development Plan (IDP)

### Program Reflection Questions (IDP and values):

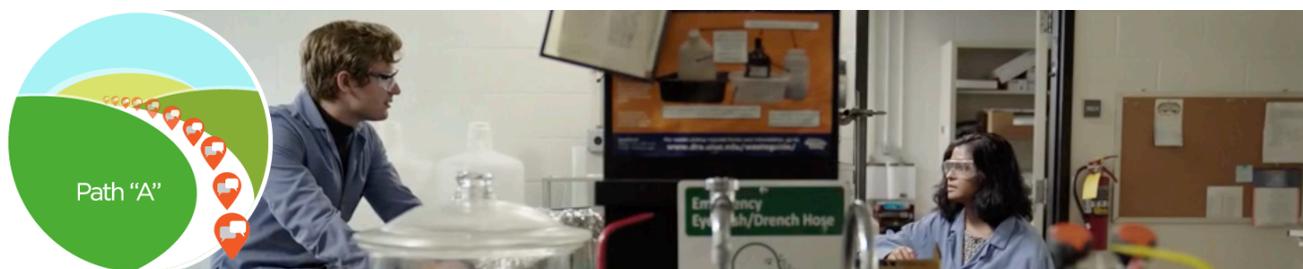
- For you, what is the most important aspect of an IDP?
- How do the values you identified for yourself help move you from where you are to where you want to be?
- Did you find a good balance of development in skills that help the work of the lab and the science per se, and skills that are more aligned with your own professional development?

### Science Questions:

- How might a lab head being less involved in day-to-day activities of the lab negatively impact the quality of the science?

### Lab Manual Discussion Questions:

- Would it be helpful for the lab manual to include information about how to communicate in the lab when the lab head is traveling? Who makes the decisions?
- Where would you put this information?



### EPISODE 1.3

**Episode summary:** As postdoc Dr. Darren Novak is disengaging as he prepares to leave the lab for a faculty position, Harold Wendling, a third-year grad student, is struggling with replicating Darren's work synthesizing the compound used in the collaboration, much to Darren and Dr. Heideberg's frustration. Harold and Meena discuss his disappointment.

**Logbook Activities:** Decision Making Framework (DMF) and 2-Minute Challenge

### Program Reflection Questions (Decision making framework):

- How would you apply the Decision Making Framework to this episode?
- Does it help you in deciding what to do if you were in Harold's situation?
- Does this structured format help you see aspects of the situation that you did not see before?

For this group discussion, it may help to have visual cues to support the discussion. An effective technique is to have the headings for each of the questions written on a blackboard, like this:

Issues   Rules   Questions   Resources   Options   Who Affected?

A slide with these categories would also work.

### AND/OR

Have lab members engage in the 2-Minute challenge in the logbook. Guide lab members through the two-minute challenge in a conversational manner. Assign one person to record the main takeaways being shared in the discussion. Encourage a range of views on the scenario.

### Science Questions:

- What is the main reason for inconsistencies in experimental techniques? Differences in innate skill? Training?
- What are the standards for training in experimental techniques?
- What are the standards for clearly noting each step in a process such that it can be replicated?
- What kinds of things don't typically get recorded, but should, in the course of doing an experiment?

### Lab Manual Discussion Questions:

- What information would be helpful to include in the lab manual about how to record and share experimental procedures and techniques with lab members?
- What information should be included to prevent the situation that Harold is in?
- Where in the lab manual would you include this information?



### EPISODE 1.4

Episode summary: In an effort to remedy the delays with the collaboration, Dr. Malcolm Heideberg directs Darren to put grad student Meena Anand in charge of the collaboration under Darren's supervision.

### Logbook Activities: Career TRAGEDIES

Resources: Nature article, the animation video

### Program Reflection Questions (TRAGEDIES):

- Which elements of the TRAGEDIES would you say is most harmful to
  - the science?
  - the work of the lab overall?
  - our own professional and personal development?
- What systemic conditions in a lab might make these elements of the TRAGEDIES more likely to occur?
- Which of these conditions could be changed?

### Science Questions:

- What are some reasons for delays in obtaining results in a lab?
- Which ones can be solved by putting appropriate protocols and processes in place?
- Which protocols and procedures are particularly useful when working with collaborators?

### Lab Manual Discussion Questions:

- What information would be helpful to include in the lab manual about how to assign projects in a lab?
- Where in the lab manual would you include this information?
- Would it be helpful to have information that relates to working with collaborators in a lab manual? What information would be helpful and where would you include it?



### EPISODE 1.5

**Episode Summary:** Jules Sorenson returns to the lab. Lab manager Dr. Loretta Wenstrup brings up items requiring her urgent attention. Jayna talks to Jules about her frustration with the Heideberg lab. Jules throws the lead back to Jayna for resolving this issue and asks Jayna to take Ana Sofia under her wing.

**Logbook Activities:** And Stance

*Implementation tip: For this episode discussion challenge each other to use and stance, listen for it, hear the difference. At the end of the session, leave 5 min to talk about how that worked.*

### Program Reflection Questions (Mentoring):

During their meeting, Sorenson equates her own experiences with sexism with what Jayna is experiencing, saying "I've been there."

- Do you think that Jayna felt supported by Sorenson's statements? Would you, in her place?
- What are some ways in which Sorenson and Jayna's experiences in science are likely to be different, based on what you know about them? How the same?
- With the previous questions in mind, what might you rather or additionally have seen in Sorenson's interaction with Jayna?

## AND/OR

During their meeting, Sorenson tells Jayna that, once she's a PI of her own lab, there won't be anyone she can go to when she has questions/needs direction or guidance for making good decisions.

- Do you think this is accurate?
- Do you think this kind of advice is helpful? Why or why not?
- With the previous questions in mind, what do you think it would have been more helpful for Sorenson to say?

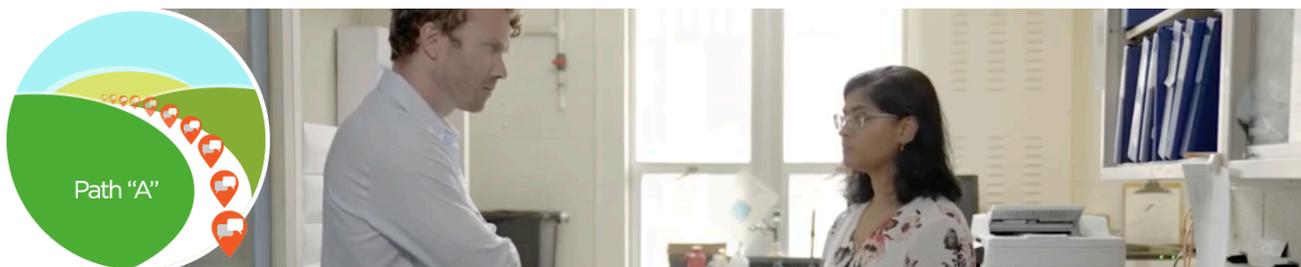
### Science Questions:

The episodes so far have centered around issues of inconsistencies in lab results. In addition to the questions you have discussed already, consider the following:

- How should replication be built into the work of a lab?
- Should there be a process of replication as a matter of course, rather than waiting for issues to be discovered? In other words, should replication be considered a part of a lab's usual quality control?
- What are the pros and cons for building in replication protocols and what would those look like?

### Lab Manual Questions:

- Should the lab manual contain any information on mentorship for lab members? What information would be helpful to have?



## EPISODE 1.6

**Episode Summary:** Darren informs Meena of Dr. Heideberg's decision to move responsibility for the collaboration with the Sorenson lab to her, in a major blow to Harold.

**Logbook Activities:** reflections on failure/thoughts and behaviors

### Program Reflection Questions (Failure in the lab):

- What is the difference between experiencing a failure and being a failure?
- Think about Meena and Harold's responses to not being able to make the compound. Can you identify any good or promising strategies? Can you identify any strategies that could have been effective had they occurred in a different environment?

- In an ideal lab, how would mistakes be handled such that lab members can learn and grow from the situation?

### Science Questions:

- In an ideal lab, what should happen when someone cannot replicate a procedure in a lab notebook? What protocols should be in place?
- What is the cost of not having these protocols in place?
- What aspects of lab culture might hinder attempts at rigor and reproducibility?

### Lab Manual:

- What information should be included in the lab manual about how to report and handle the inability to replicate a process or results?



### EPISODE 1.7

*Episode 1.7 can be grouped with episode 1.8 which is why there are fewer questions for 1.7.*

**Episode Summary:** Grad fellow Alex Park is struggling to find a starting point for his project—and the review for his fellowship is approaching. Loretta notices his struggles and suggests he meets with Jules. Alex is short with Loretta, but reluctantly agrees to a meeting. Alex is frustrated by Jules' mentoring style, as he is seeking “answers” for what to do.

**Logbook Activities:** Active listening & asking questions

*Implementation tip: For this episode discussion ask lab members to practice active listening. At the end of the session, leave 5 min to talk about how that worked.*

### Program Reflection Questions (Mentoring and career goals):

- In thinking about Alex's struggles to find a direction, how does one develop scientific independence? How does it change through the course of: 1) a graduate program, and 2) a post-doc career?
- Think of one or two questions you might want to ask a mentor or lab leader that would help you develop along the paths to independence in a graduate program or post-doc.



## EPISODE 1.8

Episode 1.8 can be grouped with episode 1.7. Pick questions from either episode and strands.

**Episode Summary:** Jayna feels time pressure and struggles to mentor Ana Sofia, giving her direction to replicate an old experiment to keep her occupied. Ana Sofia cannot understand the lab notebooks, so she consults Alex, who confirms that there is some disarray in the lab protocols. Alex makes a racist comment about Jayna. Acting as an “upstander,” Ana Sofia voices her disapproval.

**Logbook Activities:** personal scripts

### Program Reflection Questions (Personal scripts):

Begin the discussion by reading the following statement:

*Think of a situation you have faced in which you didn't know what to say, wished you had said something different, or perhaps even said nothing at all. What might have helped in that situation? With the benefit of hindsight, what would have been the right thing to say?*

Next, participants are going to create their own personal scripts. Prompt as follows:

*Now think of a situation you may face in the future that you are anxious about, not necessarily the most important one in your life but a simple one. We're going to spend a few minutes developing some scripts that you can use, to share and talk about.*

After giving a few moments to think, ask who is willing to share a situation and speak up about it, so that the lab members can help to generate scripts. This way you aren't making the script for people, people are making their own. Collect a few of the best, or designate a notetaker who records them for the group. Lead the room in a discussion as you decide together which are the best and most useful.

### Science Questions:

- What controls should be in place to ensure that all relevant information makes it into a lab notebook?
- What IS relevant information [while that might differ project to project, are there any pieces of information that should ALWAYS be included in a lab notebook?]
- How can lab members hold each other accountable?

## AND/OR

- How do negative interactions among lab members or tensions in the lab affect the science being conducted?
- What controls can be put in place to reduce conflicts?

### Lab Manual Questions:

- What information should be in the lab manual about how to talk respectfully to other people in the lab
- Would it be helpful to include guidelines for discussions? Any other communication?

## ACT 2

### EPISODE 2.1

Episode Summary: The male members of the Heideberg lab watch the World Cup at a billiards lounge. Harold sinks the 8 ball and feels his lab status is in jeopardy. He asks Darren for another chance on the synthesis, to no avail. Ana Sofia takes materials to the Heideberg lab and meets Meena, who mentions preparing for an upcoming poster session. A friendship between the two starts to form.

**Logbook Activities:** identify biases; consider power

### Program Reflection Questions (Biases and power):

- “Bias doesn't require hostility”. [1] Why does it often feel hostile, then?
- Bias can come from preferring those things that are most familiar to us, or preferring people who are most like us, though -- however inadvertently and without intent to do harm -- such biases can deny full inclusion, equal access and equal opportunity. How can we manage the tension between intention and impact?
- [1] <https://adamgrant.bulletin.com/you-can-discriminate-without-being-sexist-or-racist>

## AND/OR

- In a recent examination of students' thoughts on mentor/mentee relationships, one student noted: “A key component to feeling confident about being a mentee is realizing that the relationship is symbiotic. This provides a frame to contribute to your mentor's experience either through contributing to their work or promoting learning in terms of unknown knowledge. Recognizing the nature of the relationship makes

me feel less guilty for seeking help as I now understand that it is a cycle that science development thrives on". [\[1\]](#)

- In any one of your mentoring relationships, how clear are you on what you're contributing to that mentor's experience, and how clear are you on what they're contributing to yours? Are her/his contributions meeting your needs?
- How can each of the parties help sustain continuing mutual benefit?

- [\[1\]](#) Wrighting DM, Dombach J, Walker M, et al. Teaching Undergraduates to Communicate Science, Cultivate Mentoring Relationships, and Navigate Science Culture. CBE Life Sci Educ. 2021;20(3):ar31. doi:10.1187/cbe.20-03-0052

### **Science Questions:**

- What are some of the ways in a science lab that some people may have more access to the lab head outside of the lab or in more informal settings?
- What are some of the impacts on the science and career of individuals who have more or fewer opportunities for such informal access?

### **Lab Manual Discussion Questions:**

- What information would be helpful to include in the lab manual about addressing bias and inclusion?
- Of the passages in the Sorenson and Heideberg lab manuals that you identified as particularly strong, what makes them so?
- Are those approaches to addressing bias and inclusion as noted in the manual supported by practices in the lab?

## **EPISODE 2.2**

Episode Summary: Jules receives an email from Malcom informing her that Darren will be leaving soon, and Meena will take over the collaboration. At the Sorenson lab meeting, Jayna is frustrated by the news, anticipating even more delay in her own work while Meena gets up to speed on the project. Sorenson tries to reassure Jayna, commits to meeting with Ana Sofia, and recognizes the need to meet with Alex again.

### **Logbook Activities: Communication**

#### **Program Reflection Questions (Communication):**

- How can a person's communication style be influenced/mitigated/constrained/freed by the mode of communication ( e.g., in-person, email, text, video, telephone).
- How can a person's communication style be influenced/mitigated/constrained/freed by their own status or role and / or the status role of the person with whom they're communicating?

### Science Questions:

- What are the ways in which competence in the lab/at the bench can be realistically/appropriately assessed?
- What are the ways in which competence in the lab/at the bench is often inappropriately assessed?
- How might competence [or incompetence] in the lab/at the bench be presumed, across an array of contexts [postdoc, graduate student, man or woman, white or non-white]?

### Lab Manual Discussion Questions:

- What information would be helpful to include in the lab manual about communication as it occurs in varying situational contexts and with different audiences?
- Are there some key points about appropriate, respectful and inclusive communication that you would include?

## EPISODE 2.3

Episode 2.3 can be grouped with episode 2.4. Pick questions from either episode and strands.

**Episode Summary:** Meena describes her experience at the poster session at a Heideberg lab meeting. Malcolm does not notice her visible discomfort about her interactions with conference attendees and with Dr. Brennan. Later, she describes to Darren and Harold Brennan's inappropriate behavior toward her. They do not give her support, and make it worse.

### Logbook Activities: upstander/bystander practice

#### Program Reflection Questions:

- How might the idea of science as a meritocracy undermine both the assessment and rewarding of performance?
- What are some examples of specific barriers that women and people of color might face which contribute to an uneven playing field?

### AND/OR

- If Harold were a true ally for Meena, what might an appropriate and supportive response to Meena's experience have been?
- If Harold were to be an upstander, what might an appropriate response to Darren have been?

### Science Questions:

- In what ways are poster sessions valuable to your research or your career?
- What are some helpful things you can do in preparation of a poster session and/or during?
- How can a lab head help support a lab member who will be presenting at a poster session?

### Lab Manual Discussion Questions:

- Would you want to have a section in the lab manual about upstanding and bystanding?
- Would you include this in the communication section, or would you devote a distinct section to this issue?
- Would you want to add the examples of scripts provided in the workbook to the lab manual section on upstanding and bystanding?

## EPISODE 2.4

Episode 2.4 can be grouped with episode 2.3. Pick questions from either episode and strands.Episode

**Summary:** Jules Sorenson has a mentoring meeting with Alex. She fails to hear or understand Alex's concerns. Alex leaves feeling frustrated. Ana Sofia and Jules still have not had their meeting.

### Logbook Activities: Using questions effectively

#### Program Reflection Questions (mentoring):

- Research has described six behaviors that effective mentors exhibit: 1. aligning expectations; 2. assessing understanding; 3. communicating effectively; 4. addressing equity and inclusion; 5. fostering independence; and 6. promoting professional development<sup>[1]</sup>. A recent article suggests that "quality four, addressing equity and inclusion.... should be used in developing a set of practices for the other five behaviors" (ibid.). How might you imagine that analytic being used in:
  - aligning expectations?
  - communicating effectively?
- How might that orientation – addressing equity and inclusion – impact the questions we ask our mentees and the way we listen to and hear their responses?
- [\[1\]https://arxiv.org/pdf/2203.11518.pdf](https://arxiv.org/pdf/2203.11518.pdf)

### Science Questions:

- When you consider your scientific career, what are the advantages and disadvantages of having more or less direction from your lab head?
- How do you navigate the tension between learning to become an independent researcher versus being part of someone else's lab? Does it change depending on your career stage and level of expertise?

### Lab Manual Discussion Questions:

- What is the one thing you would include in the lab manual about mentoring or mentoring meetings?
- Why did you choose that one thing?

## EPISODE 2.5

Episode Summary: Meena talks to Ana Sofia about her frustrations with the poster session. Ana Sofia coaches Meena on personal scripts, helps her process the experience, and gives her resources going forward.

### Logbook Activities: personal scripts for upstanding

#### Program Reflection Questions (DMF):

- Now that you've used the Decision Making Framework in a couple of instances, which one of the six questions would be most useful to find an answer in a situation similar to Meena's?

### Lab Manual Discussion Questions:

- What additional resources [organizations, activities] similar to those you identified in the logbook would you include in the lab manual for various members of your lab? If not problematic, consider a group share to get a sense of the range of experiences/concerns in your lab.

## EPISODE 2.6

Episode Summary: Jayna encounters racial microaggressions in the department mailroom. Loretta commiserates and provides support. Darren maintains that the scientific problems are on Jayna's side.

### Logbook Activities: personal scripts as an upstander

#### Program Reflection Questions (culture):

- Scientific culture has been described as the "culture of no culture" [objective, rational, without context, "without loose ends, without temperament, gender, nationalism"] [\[1\]](#),

[2]. What are some of the most compelling repudiations of this that you've seen thus far in the film?

[1] Traweek, Sharon. 1988. *Beamtimes and Lifetimes: The World of High Energy Physicists*. Harvard University Press, Cambridge, MA

[2] Subramaniam, B., & Wyer, M. (1998). Assimilating the "Culture of No Culture" in Science: Feminist Interventions in (De)Mentoring Graduate Women. *Feminist Teacher*, 12(1), 12–28. <http://www.jstor.org/stable/40545803>

### Science Questions:

- Darren asserts that the two samples are the same molecule; on what basis does he make that statement?
- What is the science that allows him to know this?
- Why/how might he be in error? What are some checks against the error?

### Lab Manual Discussion Questions:

- From the sample lab manuals, which elements/sections did you particularly like for building your lab culture of excellence?

## EPISODE 2.7

**Episode Summary:** Meena fails, as Harold did, to make the compound. She seeks help from Darren, who insists that all necessary information is in the notes. Harold arrives late to lab and is called out by Malcolm for his tardiness. Meena persuades Harold that the two of them should talk to Malcolm tomorrow to ask for help.

**Logbook Activities:** practice self-talk and THINK framework

### Program Reflection Questions (Failures):

- One thing that is certain in science is that there will be mistakes in the work we're doing. How can a lab leader set the tone for using those mistakes as a learning opportunity?
- How can the kind of feedback you get about a mistake inhibit or encourage true learning?
- How can a lab head reasonably balance the expectation of good science [accurate results] with compassion for/acceptance of human fallibility?

## AND/OR

- What's a daily THINK mantra -- not tied to any specific mis-step -- that you might use to help keep you centered as you go about your work in the lab?

### Science Questions:

- When reproducing an experiment, how careful are you about recording each step in each attempt?
- How do you account for what might be different from attempt to attempt in trying to reproduce an experiment?

### Lab Manual Questions:

- What kinds of resources might you include about feedback (both giving and receiving) in the lab manual?
- How will you practice that in the lab?

## EPISODE 2.8

Episode Summary: Ana Sofia looks over the electronic notes for her lab and cannot make sense of them. She shows Jules the online materials she finds confusing. Jules and Loretta agree this is a problem and decide to overhaul the lab's data management protocols.

**Logbook Activities:** 2MC grad student dilemma

### Program Reflection Questions:

After going through the 2MC in the logbook, compare your responses to each step to those developed by others in your discussion group. Did you or others distinguish between

- finding support for the stress and fear of raising an unwanted conclusion, and
- the process of bringing it forward

### Lab Manual Discussion Questions:

- For the specific projects in your lab, which of the data domains need the most work?
- Which of the domains do you imagine being the easiest to address?
- The most difficult?

## EPISODE 2.9

**Episode Summary:** Loretta notices that Alex is still struggling to get started on his project. She gets to the bottom of his struggles and persuades him to have another conversation with Jules with her there to help. Jules is surprised, as she'd thought the previous meeting with Alex went well. Loretta suggests that Alex might need more direct guidance.

## Logbook Activities: asking questions

### Program Reflection Questions:

- Think about the last substantive question you were asked. Was it confrontational, influential, problem-solving, curious, or some combination of these? If the question didn't quite work (e.g., the purpose wasn't clear, or it made you feel uncertain in your response, or it felt aggressive), how would you re-phrase that question to be a more effective one?
- What did the last question you were asked help you learn?
- Thinking back to feedback you've received when you made a mistake, how might that feedback have been more effective if posed in question form? How might an approach of questioning, rather than telling, help you better learn from your mistake?

## AND/OR

- Discuss the following 2MC using the DMF. (Refer to the logbook section for episode 1.3 for instructions on the DMF.)
  - "You began working in a new lab a few weeks ago. You met with your new lab head in your first week to discuss the project you'd be working on, but you realize now you didn't ask as many--or the right--questions to really understand the work. After a few weeks of working, you do not have much to show for your time. You are supposed to present your work at next week's lab meeting, and you are afraid that, because you do not have much to show, your new lab head will think you have not been working hard enough. You feel that it is too late to ask for additional direction or help because you have waited so long. You haven't gotten to know any of your new colleagues well enough to feel comfortable asking them for advice, or whether any of them are doing work close enough to yours that you could ask for help."
  - What do you do?

### Lab Manual Discussion Questions:

- How could this specific aspect of communication -- asking effective questions -- best be addressed in a lab manual?

## EPISODE 2.10

**Episode Summary:** Meena works all night in the lab. Later, she tries to convince Harold to talk with Malcolm about the project, but he cannot face it and hurries away. Meena talks to Malcolm about needing Darren to help figure out the synthesis problem. He reluctantly agrees and puts the responsibility back on them.

## Logbook Activities: supporting mental health

### **Program Reflection Questions:**

- It seems clear there is no sense of psychological safety in the Heideberg lab. Thinking about the places where you feel like you belong, and feel accepted and valued, what are elements in that environment that are missing from the Heideberg lab? How are those missing elements part of a lab culture?
- If you were to become a lab leader yourself, what would you do to foster psychological safety in the lab?

### **Science Questions:**

- In what ways does the science being conducted in a lab suffer, if lab members do not feel safety to speak about their struggles and concerns?
- What protocols/processes/support can be put in place to make sure that lab members can do the best science?

### **Lab Manual Questions:**

- What resources will you include in your lab manual to address issues of mental health and wellbeing?
- What resources and actions might increase the feeling of the lab's psychological safety?
- How might you meaningfully integrate support [through words, actions, and written expectations/policies] into the work of your lab for the benefit of both those who might be struggling, and those who want to be supportive?

## **EPISODE 2. 11**

**Episode Summary:** Jayna continues to be frustrated by the lack of compounds from the Heideberg lab and seeks intervention from Jules. Jules advises that Jayna use this as practice for the kind of problem-solving she will need to do when she has her own lab. Jayna reluctantly accepts this plan.

**Logbook Activities:** mentoring network map

### **Program Reflection Questions:**

- In a recent contribution to Letters to Young Scientists, a column which is a regular feature of Science, the authors note: "Mentors may try to provide the type of mentoring they wished they had received in graduate school, failing to realize different students have different needs and require individualized guidance" [1].
- How aware are you of what type of mentoring you wish to receive, and perhaps aren't? How would you guard against mentoring trainees on the assumption that the same things that are important to you are also important to them?
- It's also true that many mentors adopt practices that their mentors used, without realizing that the individual in front of them may need something completely

different. How could you work to recognize that not every approach may be appropriate for every lab member?

[1] doi: 10.1126/science.caredit.abf7598

## EPISODE 2.12

**Episode Summary:** Elliot Barr, the Director of Graduate Studies for the Chemistry Department, visits Malcom to inform him about Harold's attempted suicide and departure from the university. Malcolm is dumbstruck and suggests Harold hasn't been doing well in the lab. Elliot Barr explains that the lab will start a program focused on healthy and inclusive labs.

**Logbook Activities:** identify resources for mental health and wellbeing

### Program Reflection Questions:

- The logbook asks you to consider, if you were in charge of the lab, what you would include in a manual or strive to make part of the working climate to support lab members to deal with difficult emotional issues.
  - If you were in charge of a department or research institution, what would be different?
  - How would you create an institution-wide safety net for struggling lab members?
  - How would you suggest knitting together all the various and silo-ed programs that might currently exist to strengthen that net?

### Lab Manual Questions:

- Share with others the resources you've identified for fostering mental health and creating a positive and inclusive working environment.
- What's still missing?
- Did others identify resources you didn't?

## ACT2 INTEGRATION

## ACT 3

### EPISODE 3.1

**Episode Summary:** Malcolm Heideberg tells his lab that Harold has left without mentioning why, though some lab members– including Meena–know the truth. Malcolm requires Darren to work through the synthesis with Meena to root out the problem that is holding things up.

**Logbook Activities:** applying tools to different scenarios

**Program Reflection Questions:**

- What can a lab group reasonably do to respond to instances like what happened with Harold?
- What might an honest stock taking of lab culture look like?
- Think back to the logbook activities for Episodes 1.7 (Listening as Leadership), 2.9 (Power and Questions), and 2.10 (Recognizing Others' Stress). Knowing what you know now about the costs to Harold of the Heideberg lab culture, discuss what you might have said to the Harold you met in episode 2.7. How would you have used effective questioning, active listening and supportive behaviors to reach out to Harold?

**Science Questions:**

- Heideberg tells Darren to help Meena so they can "find out where she's going wrong". What are the assumptions being made in that statement?
- How can you better anticipate and keep track of possible sources of error?

**Lab Manual Questions:**

- As a group, discuss this question from the logbook: "How do sections in a lab manual "live" so that they are used and can inform daily interactions?"
- What can be done by leaders in the lab (whether that is the PI or members of the lab) to make sure these sections not only accurately reflect lab interactions, but also shape those interactions?

## EPISODE 3.2

**Episode Summary:** Jules Sorenson engaged in self-reflection and realizes that her students have gotten a bit lost in the shuffle. She and Loretta agree to work together to create a better mentoring system and data management protocols.

**Logbook Activities:** apply tools to different scenarios

**Program Reflection Questions:**

- What do you perceive might be some differences between a lab leader/research advisor and a mentor?
- How might those differences impact the relationships?
- What might be some differences between an a grad student/postdoc and a mentee?
- How might those differences impact the mentor/mentee relationship?

### Lab Manual Questions:

- Discuss this prompt from the logbook: "At the beginning of this program, you reflected on what a culture of excellence is and where you have seen such a culture in labs. Review your notes on the lab manual sections you have been developing through Acts One and Two. Reflect on how the iREDS approach to deliberative lab conversation, and other methods of communication, fit into your lab values. Consider how mentoring relationships can be most effective."
- Keeping all this mind, what might your lab philosophy -- a kind of mission and vision statement -- look like? How will it describe your expectations of and your contributions to a culture of excellence? Will you review and revise this on an annual basis with your lab?

## EPISODE 3.3

**Episode Summary:** Darren and Meena go through the synthesis together and discover an error made by Darren. It doesn't explain everything; the compound's color is still off. Together, they discover that the base material is incorrect. Darren doesn't want to share that with the Sorenson lab, but Heideberg insists on transparency. Darren realizes the complications of this as it relates to Harold and rationalizes that he would have washed out anyway. Meena calls Harold to explain the issues with the compound.

**Logbook Activities:** transparency, reflecting on mistakes

- data management lecturette better here than 2.8

### Program Reflection Questions:

- Discuss the following 2MC using the DMF. (Refer back to episode 1.3 for directions).
  - "You have just become a post doc for a lab head who gave you data to analyze that was collected from 50 subjects. However, the research coordinator, who is resigning, told you that the fMRI scans had only been done on 6 of the 50 subjects and that the results did not support the lab head's hypothesis. You felt like you've just been handed a smoking gun, and want out of this project immediately."
  - What do you do?

### Science Questions:

- Why do you think Darren did not try to address the discrepant results that Jayna found as a scientific question, but rather assumed that Jayna, and then Harold, and then Meena were doing something wrong? How common is Darren's approach and why does it happen?
- How can lab leadership best model how to be transparent about mistakes, and work as a team through the specific implications of any given mistake?

### Lab Manual Questions:

- Thinking about the various sections in your lab manual, consider how you will articulate how you want mistakes handled in your lab.

## EPISODE 3.4

**Episode Summary:** Malcolm emails Jules to explain the delays with the synthesis. The two of them have coffee to discuss the issues with the collaboration. They work together on more clarity about how the collaboration will work; Jules raises the issue of the disrespectful treatment Jayna experienced in the Heideberg lab.

**Logbook activities:** practice difficult conversations

### Program Reflection Questions:

- Discuss the following 2MC using the DMF. (Refer back to episode 1.3 for directions).
- "Your lab, along with other labs at different institutions, collaborates frequently with a field researcher who periodically sends you data for analysis. Although you have never met this scientist, your name appears on several papers with her because you helped with some sections of the manuscripts. But now you are concerned. This week, you and colleagues at other institutions received an email from a reader pointing out a troubling discrepancy in the data in one of those articles, which was recently published in a top journal. The field researcher, who is on a research trip in Bolivia at the moment, has insisted by email that everything is fine, but you are not so sure. After all, you think, how hard would it be to fabricate results if no one else has access to the full data set? Meanwhile, your colleagues at other institutions --most of whom are tenured, unlike you --do not seem to be in a hurry to address the problem."
  - What should you do?

### Science Questions:

- Why do you need to collaborate in your work?
- Think about some of the collaborations you have been involved in. What has worked or not worked?
- Are there best practices for initiating a collaboration and keeping it on track?
- What are some red flags?

### Lab Manual Questions:

- What information would you include in a lab manual about initiating a collaboration and with keeping it on track throughout its lifespan?

## EPISODE 3.5

**Episode Summary:** Jules meets with Alex and Loretta. Alex explains how he needs a firm hand to help kickstart his project. Jules realizes that she needs to adapt her mentoring style. Alex apologizes to Loretta.

**Logbook Activities:** mentoring philosophy

**Program Reflection Questions:**

- Thinking about the essential 4 Rs of an apology, discuss what you think Darren needs to say to Jayna and Meena about his assumptions about the source of the discrepancy in the data? What he needs to say to Drs Heidberg and Sorenson about the collaboration?
- Is there any meaningful apology that Darren can make to Harold?

**AND/OR**

- Jen Heemstra, an associate professor of chemistry at Emory University in Atlanta, started to ask her research group for feedback in 2015, around the time she went up for tenure. Up to that point, she'd thought that "if I know what sort of culture I want in my lab, if I know what kind of mentor I want to be, I can just lead from that notion and everything will work out," she says. After 5 years as a faculty member—at a point when Heemstra's research group had grown and become more established—she had gained enough experience to realize that setting out to be a good mentor "helps, but that only gets you so far," she says. To become a truly great mentor, "it really takes a lot more intentionality; it takes a lot of intentional learning and growth and things like critical feedback" [1].
  - How can the kinds of feedback Heemstra is talking about best be sought and given?
  - What are some concerns about giving and receiving feedback in this situation?
  - [1]. doi: 10.1126/science.caredit.aax8575

**Lab Manual Questions:**

- Review the mentoring section of your lab manual. Have you included information about how to solicit and share feedback about the mentoring relationship?

**EPISODE 3.6**

**Episode Summary:** Jules talks to Ana Sofia about their mentoring relationship and taking the lead on a data management plan. Ana Sofia is excited to start her first major project.

**Logbook Activities:** personal scripts for mentoring conversations

**Program Reflection Questions:**

- Review the people you included in your mentoring map (see logbook section for episode 2.11). Would different types of mentoring (one-on-one, group/collective

based, peer based, situational, networked, etc.), be more effective from different mentors and/or for your different needs?

**Lab Manual Questions:**

- Revisit the mentoring section of your lab manual to determine if it has all the necessary information it should have about how different needs are met by different mentors and different mentoring approaches.

## **EPISODE 3.7**

**Episode Summary:** The Heideberg lab has figured out the problems; Jayna is vindicated. Jules advises Jayna about next steps in the collaboration and suggests a colleague of color to augment Jayna's network. Jayna happily agrees to guide Ana Sofia's work to research the stereoisomer.

**Logbook Activities:** individual development plan

**Program Reflection Questions:**

- What use could the different characters in this story have made from this curriculum? Pick one character from each lab and describe moments where having practice with professional development skills would have been helpful
- What do each of you most want to pay attention to over the next year, and what supports will you each need to be successful in those areas? Are those supports readily available to you? What can/will you do if not?

**Lab Manual Questions:**

Create a lab manual section which details the need for IDPs. How often will you require those to be reviewed and revised?

## **Act Based Discussion Sessions**

*sample slide decks are provided for your use and adoption*

## SESSION 1: INTRODUCTION TO THE COURSE

### Session Goals

- Set expectations for the discussion sessions.
- Agree on guidelines of behavior for discussion sessions.
- Identify and reflect on personal goals for this program.
- Identify and discuss the characteristics of cultures of excellence.

### Suggested Preparation

Watched Introduction videos

Completed logbook activities for these episodes.

- Read "As you begin..." section
- Read "How to Use this Professional Development Logbook" section

**Length of Session:** This session is designed to take about 90 min including a 5-10 min break. The suggested times for each discussions are there to help you plan for the session. However, times will vary depending on the size of your lab and lab members.

#### 1. Introduction (5min)

- Review goals of the LTW program and of the discussion sessions
- Provide an agenda of what will occur in this particular session
- Answer questions

#### 2. Openings/Introductions (5 To 10 Min Depending on Size of Group)

- Even if lab members know each other, get them comfortable sharing something about themselves
- See page x (First Discussion Session) for ideas

#### 3. Discussion Guidelines Group Agreement (Suggested Time: 10-15 Min)

Develop guidelines for discussion that everyone agrees to. Make a list of possible discussion guidelines (see page x for suggestions) and share them with the group. Then ask the group:

- Is there anything you would like to add or remove?
- Is there anything you would like to word differently?

*Tip: One way to hear from everyone is that after you have shared the list of possible guidelines, you ask each person to make their suggestions. If you cannot come to a consensus in the time scheduled, you can resume this discussion at the end of the session. You may want to assign a person in the group to take notes and make revisions in a shared document.*

Once you have a list of guidelines ask lab members:

- Is this something we can all agree on?
- How should we hold each other accountable?

#### 4. Structure and Logistics (5)

If you have not already done, let participants know about how these discussion sessions will be structured and facilitated, and how you plan to communicate.

*Tip: You can omit this part if you have already shared this information in an email or will share it in a follow up email.*

#### 5. Setting Personal Goals (Suggested Time: 15 Min)

This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.

##### **Discuss the following questions in small groups (10 min):**

- What are your personal goals for this program?
- How do you think this program will help you in your work and your career?
- What would you like the goals for the lab to be?

*Tip: One person in each group may lead the discussion (making sure that everyone has a chance to speak), one person may take notes, and another person or the same one who took notes will report out key takeaways to the whole group.*

##### **Share takeaways with the bigger group (5 min).**

*Tip: Depending on the size of the group you may want to limit the sharing out to one takeaway per group or just take 3-4 takeaways total. Groups can also share their notes with the whole group so that you can see the main takeaways.*

#### 6. Cultures of Excellence (Suggested Time: 20 Min)

This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.

Ask participants to share their answers to these questions in small groups (15 min):

- What does "culture of excellence" mean to you?
- What characteristics would you expect in a workplace with a culture of excellence?
- How does your own lab institution illustrate cultures of excellence?

Share takeaways with the bigger group(5 min) Depending on the size of the group you may want to limit the sharing out to one takeaway per group or just take 3-4 takeaways total.

## 5-10 Min Break

### 7. Lab Manual (15 Min)

This discussion will prime participants' thinking into building a lab manual and larger lab culture, and the eventual assignment to write an orientation section of a lab manual.

Ask lab members the following question:

- What information would be helpful to have in advance, or available on your first day joining a lab?

Make a list of the information that would be helpful to have as participants share their answers.

*Tip: You can assign a person to be in charge of writing down the suggestions in a shared document that you will revisit in subsequent person. Make sure that you don't always ask the same person to be the notetaker.*

Have lab members vote on the preferred way to have this information available, among the following suggestions:

- Website? Lab manual? Written? Oral? Ongoing editable wiki?

Tally and record the votes. If you have time you can have a short discussion of the pros and cons of different methods.

*Tip: If you are meeting online you can use Zoom polls or tools like Poll Everywhere or Mentimeter.*

### 8. Wrap Up (5-10 Min)

- Give everyone an opportunity to share what worked well for this session and any suggestions for future sessions. Give the options to lab members to share additional suggestions by email.
- Revisit the Discussion Guidelines and ask lab members whether they would want to make any changes to the agreement based on this first session.

### 9. Personal Reflection (5 Min)

Ask each lab member to write for 5 minutes about their personal goals for this program, what they hope to get out of it, and how they commit to engage with this program and their personal goals. They can also do this in pairs.

You can also give participants other prompts for the final reflection (see Menu of End-of-session Reflections.)

## ACT 1 DISCUSSION SESSION

### Session Goals

- Share reflections from individual work on the LTW program.
- Practice active listening skills in communication with a large group.
- Practice applying personal scripts to responding to a request to do something you don't want to do.
- Discuss what sections to include in a lab manual.
- Discuss the process for creating a data management plan for the lab.

### Suggested Preparation

Watched episodes 1.1 to 1.7

Completed logbook activities for these episodes

**Length of Session:** This session is designed to take about 90 minutes to 2 hours including one 10-15 min break. The suggested times for each discussions are there to help you plan for the session. However, times will vary depending on the size of your lab and lab members.

### Workbook Activities Summary

Participants should have already gone over these content areas and tools in the LTW programs:

- Reflecting on cultures of excellence
- Reflecting on your career
- Articulating your values
- Identifying and reflecting on career TRAGEDIES in your life
- Reflecting on the characteristics of an effective leader and their relationship to values
- Using DMF to address an interpersonal issue
- Practicing active listening and asking good questions
- Practicing upstander skills
- iREDS and data management plans

### Suggested Structure

1. Introductions (5-10min)
  - Session goals
  - Reminder of guidelines of discussion

- Warning about potentially triggering content
  - Agenda (how the session will be structured)
  - Questions
2. Discussion: Act 1 reflection (15-20 min)
  3. Lab Commitment to Skills Acquisition (5-10 min)
  4. Activity: decision making framework (15-20 min)
  5. Activity: practice active listening and asking questions (15-20 min)
  6. Discussion: lab manual and data management (15-20 min)
  7. Wrap up (5 min)
  8. Reflection (5 min)

### **Implementation Tips:**

- *The introduction should be quick if you have already had an introductory session.*
- *Some labs will be taking part in an iREDS lab management discussion facilitated by a Labs That Work program lead. The discussion will likely occur after this Act 1 Discussion session. In case the iREDS discussion occurred before this session, discuss main take aways during the Lab manual discussion.*
- *Depending on your goals, you may only have time for one activity. You could ask participants to vote on whether they would want to practice the decision making framework or active listening or both.*
- *It's best to include at least one break.*

### **1. Introductions (Suggested Time 5 Min)**

### **2. Act 1 Reflections (Suggested Time: 15-20 Min)**

Ask participants to share the main takeaways from watching the videos in Act 1 and completing the workbook. You may consider the following prompts to get the conversation going:

- Which situations in the film resonated with you?
- Have they caused to think differently about your own behaviors or lab dynamics?
- Which tools (career tragedies, decision making framework and personal scripts, listening intentionally) were most valuable to you?
- Which tools will you continue to use? How will you apply them?

Make a list of the most useful tools mentioned by participants and ask them for ways in which they could continue practicing them.

### **3. Lab Commitment to Skill Acquisition (Suggested Time: 5-10 Min)**

Consider asking everyone whether they would commit to applying one skill to an upcoming lab meeting for a specific period of time, say one month, for all to be able to practice and master the skill. At the end of that period, have a quick check-in to collect comments and insights. For example, you might use the And Stance in the lab meeting or during discussions in the lab.

#### 4. Decision Making Framework (Suggested Time: 15-20 Min)

In this discussion lab members share something they completed on their own in the logbook with other lab members. Let them know that they don't have to share what they have written word-for-word or share everything they wrote. They choose what they want to share.

*Implementation tips:*

- *This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*
- *It may be helpful to have a slide with the scenario that the lab members will discuss.*

Each group should go through the following steps:

Read the following scenario:

"You have recently joined a lab and were assigned to take over the lead on a project using techniques with which you are not completely familiar. You are happy to be getting the experience, though you have concerns about putting the project and your reputation at risk from your lack of in-depth experience with the technique. You come to understand that the PI replaced one of the more experienced lab members with you—and this other person seems really unhappy about it. You are not sure if you or the PI is the focus of the feelings. What you do know is that the relationship between the two of you is strained. What do you do?"

#### Discussion (suggested time: 10-15 min)

- Walking through each step using the DMF and share your responses with others in your small group.
- Share some of your personal scripts from the logbook (page 15) or come up with new ones, if someone asks you to do something you're not sure you want to do for whatever reason (time, interest, other conflicts).
- Discuss which personal scripts resonate the most with everyone's experiences.
- Share takeaways with the bigger group (5 min).

#### Break (Suggested Time: 10-15 Min)

#### 5. Active Listening and Asking Questions (Suggested Time: 15-25 Min)

*Implementation tips:*

- *This activity may work well in pairs, where one person is talking and the other person is the listener. You could also do it in groups of 3. In that case each person takes one turn as a speaker, one person takes turns being the listener, and the other observes.*
- *Share the instructions below with participants as they go through the activity.*

Once participants are in groups they should go through the following steps.

- Each person will select a challenging situation that they are facing related to work or home. Examples may include an experiment not working, deciding on where to publish a paper, balancing family and work demands. You will then choose who will speak and listen first and who will observe.
- Set a timer to two minutes (120 seconds) for each speaker to talk about their situation.
- As the person speaks, the listener poses clarifying questions to help understand the challenge and encourage sharing. The listener should not give advice or their opinion. Example questions/responses:
  - “Can you tell me more about that?”
  - “Help me understand more about..”
  - “I heard you say “x”, can you tell me more what you mean by that..”
  - “How did that make you feel?”
  - Nodding and affirming (“yes...”, “uh huh”)
- When the timer goes off, the listener should briefly repeat back what they heard. The observer (if there is one) should take notes about what they heard and saw.
- The group will then select another speaker, listener, and observer, until everyone has had a chance to speak and play the different roles.
- At the end, everyone in the group should discuss the following:
  - Which role (speaker/listener) was working harder? Why?
  - How did it feel to be listened to that intently?
  - How did it feel to listen to someone intently?
  - What seemed to be good ways of listening/asking questions?
  - What did you notice that surprised you?
  - If listening was on your list of areas to improve, did this practice help you?
- Share your main takeaways with the whole group.

## **6. Lab Manual & Data Management (Suggested Time 10-15 Min)**

1. Revisit from the previous discussion session the list of information it would be helpful to have in advance, or available on your first day joining a lab. Ask participants what revisions they would make to that list based on the work they have now done in the LTW program.

2. If your lab has had an iREDS discussion, you may ask participants:

- What were some key takeaways from the iREDS discussion?
- What protocols or strategies have you implemented following the iREDS discussion?
- Is there additional information you would add to the lab manual based on the iREDS discussion?

3. Make the necessary revisions to the list of information to include in the lab manual as participants share their ideas.

## 7. Wrap Up (Suggested Time 5 Min)

- Ask for any general takeaways from this session, questions, or concerns.
- Give everyone an opportunity to share what worked well for this session and any suggestions for future sessions. Give the options to lab members to share additional suggestions by email.

## 8. Reflection (5 Min)

Ask each participant to write for 5 minutes about the session using the 3-2-1 summary format:

- What are 3 ideas that have captured your attention from today's discussion?
- What are 2 questions that you are thinking about related to today's discussion?
- What is 1 thing you will try to implement right away?

You can also give participants other prompts for the final reflection (see **Menu of End-of-session Reflections.**)

labs that are doing LTW by Acts should be holding a facilitated iREDS discussion at the end of Act one as well--we should reference that and include pretty clear directions and references for arranging and holding those.

## ACT 2 DISCUSSION SESSION

### Session Goals

- Share reflections from individual work on the LTW program.
- Discuss bias and power dynamics in your institution and science in general
- Practice personal scripts for difficult conversations
- Practice upstander/bystander skills.
- Discuss what sections to include in a lab manual.
- Discuss the process for creating a data management plan for the lab.

### Expected Preparation

Watched episodes 2.1 to 2.12

Completed logbook activities for these episodes

### Logbook Activities

- Reflect on bias and power, and how they show up
- Reflect on mentoring relationships
- Reflect on being an upstander versus a bystander
- Personal scripts for being an upstander
- Personal scripts for mentor meetings
- Practice asking good questions
- Practice using the decision making framework
- Reflect on microaggressions
- Practice self-talk
- Apply THINK framework
- Discuss data management protocols
- Recognize stress and support mental health
- Build a mentoring network
- Identify resources for mental health

### Suggested Structure

1. Introduction (10 min)
  - Session Goals
  - Reminder of guidelines of discussion
  - Warning about potentially triggering content
  - Agenda
  - Questions
2. Discussion: Act 2 reflection (15-20 min)
3. Lab Commitment to Skills Acquisition (10-15 min)
4. Discussion: bias and power (10-15 min)
5. Activity: personal scripts for grad student dilemma (15-20 min)

### OR

5. Activity: personal scripts for upstanding and bystanding (15-20 min)
6. Discussion: lab manual and data management (20 min)
7. Wrap up (5 min)
8. Reflection (5 min)

## Implementation Tips

- In the Introduction mention that Act 2 covers a lot of difficult topics (such as microaggressions, incivility, mental health) that may bring up strong feelings. If at any time anyone needs to step out and take a break they should feel free to do so. No one should have to share their experiences if they do not want to.
- Make sure to go over the guidelines of discussion and refer to Appendix B for ways to handle potential conflict during the discussion.
- During the discussion session, be mindful about putting any educational burden on traditionally excluded or marginalized groups; it's not the job of students in the room to educate their peers about various elements
- You have a choice of two suggested activities. Pick one or the other, or if you have enough time, do both. Ask participants to vote on which activity they would rather do.

### 1. Introduction (5min)

### 2. Act 2 Reflections (15-20 Min)

Ask participants to share the main takeaways from watching the videos in Act 2 and completing the workbook. You may consider the following prompts to get the conversation going:

- Which situations resonated with you?
- In thinking about some of the situations that the film characters found themselves in, how could they have acted differently?
- Which tools (career tragedies, decision making framework and personal scripts, listening intentionally) could they have used to handle the situations they were in?
- How has your thinking or behavior changed after completing this Act and the logbook activities?

### 3. Lab Commitment to Skill Acquisition (15-20 Min)

If you committed to practicing a skill as a lab at the last session ask everyone to comment how it went.

- What did they notice?
- What was challenging?
- What worked? What did not work?
- How did the lab conversations/interactions change?
- What changes would you make if we continue this practice?

After listening to the responses, consider committing to practicing a new skill or continue practicing the same one and hold each other accountable.

If you did not commit to practice a skill as a lab at the last session consider doing it now.

- Ask everyone whether they would commit to applying one skill to an upcoming lab meeting and/or class, or for a specific period of time, say one month, for all to be able to practice and master the skill.
- At the end of that period, have a quick check-in to collect comments and insights.

#### **4. Discussion: Bias and Power (15-20min)**

*Implementation tip: This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*

Ask participants to share their answers to these questions in small groups (15 min):

- Which biases, implicit or explicit, are present in your work environment?
- How might these biases impact people working in the lab and/or the lab culture?
- How do these biases create barriers to inclusivity?
- How do expressions of power in your lab or institution affect inclusion?

Share takeaways with the bigger group (5 min). Depending on the size of the group you may want to limit the sharing out to one takeaway per group

#### **Break (Suggested Time: 10-15 Min)**

#### **5. Activity: Practicing DMF and Personal Scripts (15-20min)**

In this discussion lab members discuss an activity they completed on their own in the logbook.

*Implementation tips:*

- *This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*
- *It may be helpful to have a slide with the scenario that the lab members will discuss.*

#### **Read the following scenario:**

"Your first thought was: "I can't be right. I'm just a grad student, after all. Could an entire sub-field of research really be based on a fundamental error?" And yet, the conclusion is unavoidable. You've checked and rechecked your analysis, and a central analytical approach your group used in several publications (indeed, one used by scores of other research groups, as well) is vulnerable to bias. It dawns on you that the problem could compromise hundreds of related articles from other labs. What do you do?"

Discussion (10-15 min):

- Walking through each step using the DMF and share your responses with others in your small group.
- Share some of your personal scripts from the logbook or come up with new ones, if someone asks you to do something you're not sure you want to do for whatever reason (time, interest, other conflicts).
- Discuss which personal scripts resonate the most with everyone's experiences.

Share takeaways with the bigger group (5 min).

## 6. Activity: Bystander/Upstander (15-20min)

*This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*

Ask participants to take 5 min to think of a situation in which they experienced an incivility or harassment or take one of the situations from the Sorenson and Heideberg labs. They should then each share the situation and pick one to discuss.

- Apply personal scripts to that situation for the person experiencing the incivility to stand up for themselves.
- Next, ask participants to think of a situation in which they were a bystander to incivility or take one of the situations from the Sorenson and Heideberg labs. They should then each share the situation and pick one to discuss.
- How could they have changed their script to be an upstander?

Share main takeaways from this activity with the bigger group (5 min).

## 7. Discussion: Lab Manual (20 Min)

Revisit the list of information would be helpful to have in advance, or available on your first day joining a lab from the previous discussion session.

- What revisions would you make to that list?
- Are there practices you could add for reducing incidents of harassment and incivility?
- Are there practices you could add for supporting lab members who are experiencing mental health issues?

If your lab has had an iREDS discussion, you may ask participants:

- What were some key takeaways from the iREDS discussion?
- What protocols or strategies have you implemented following the iREDS discussion?
- Is there additional information you would add to the lab manual based on the iREDS discussion?

Make the necessary revisions to the list of information to include in the lab manual as participants share their ideas.

## 8. Wrap Up (5 Min)

- Ask for any general takeaways from this session, questions, or concerns.
- Give everyone an opportunity to share what worked well for this session and any suggestions for future sessions. Give the options to lab members to share additional suggestions by email.

## 9. Reflection (5 Min)

- Revisit your entries page 42 in the workbook and reflect on how your thinking has changed after today's discussion. What were 3 key take aways, 2 things you would like to think more about, 1 thing that you were confused about or you are not clear about.

## ACT 3 DISCUSSION SESSION

### Session Goals

- Share reflections from individual work on the LTW program.
- Identify ways to take care of people's physical and mental health and list available resources
- Discuss how to reset a collaboration
- Reflect on leadership and mentorship roles
- Discuss what sections to include in a lab manual.
- Discuss the process for creating a data management plan for the lab.

### Expected Preparation

Watched episodes 2.1 to 2.12

Completed logbook activities for these episodes

### Logbook Activities

- Apply decision making framework and personal scripts to various scenarios
- Write lab manual sections on wellness and inclusivity, lab philosophy, transparency
- Consider different management practices
- Review different collaboration agreements
- Consider your mentoring philosophy
- Start your individual development plan

### Suggested Structure:

1. Introduction (10 min)

- Session Goals
  - Reminder of guidelines of discussion
  - Warning about potentially triggering content
  - Agenda
  - Questions
2. Discussion: Act 3 reflection (15-20 min)
  3. Lab Commitment to Skills Acquisition (10-15 min)
  4. Discussion: mental health
  5. Activity: Personal Scripts for Managing Stress (15-20 min)

**OR**

5. Activity: personal scripts for collaborations (15-20 min)
6. Discussion: lab manual and data management (20-30 min)
7. Wrap up (5 min)
8. Reflection (2 min)

**Implementation tips:**

- *In the Introduction remind participants that if at any time anyone needs to step out and take a break they should feel free to do so. No one should have to share their experiences if they do not want to.*
- *Make sure to go over the guidelines of discussion and refer to Appendix B for ways to handle potential conflict during the discussion.*
- *You have a choice of two suggested activities. Pick one or the other, or if you have enough time, do both. Ask participants to vote on which activity they would rather do.*

**2. Discussion: Act 3 Reflections (15-20 Min)**

Ask participants to share the main takeaways from watching the videos in Act 3 and completing the logbook. You may consider the following prompts to get the conversation going:

- Which situations resonated with you?
- In thinking about some of the situations that the film characters found themselves in, how could they have acted differently?
- Which tools (career TRAGEDIES, decision making framework and personal scripts, listening intentionally, asking good questions) could they have used to handle the situations they were in?
- How has your thinking or behavior changed after completing this Act and the logbook activities?

### 3. Lab Commitment to Skill Acquisition (10-15 Min)

If you committed to practicing a skill as a lab at the last session ask everyone to comment how it went.

- What did they notice?
- What was challenging?
- What worked? What did not work?
- How did the lab conversations/interactions change?
- What changes would you make if we continue this practice?

After listening to the responses, consider committing to practicing a new skill or continue practicing the same one and hold each other accountable.

If you did not commit to practice a skill as a lab at the last session consider doing it now.

- Ask everyone whether they would commit to applying one skill to an upcoming lab meeting and/or class, or for a specific period of time, say one month, for all to be able to practice and master the skill.
- At the end of that period, have a quick check-in to collect comments and insights.

### 4. Discussion: Mental Health (Suggested Time: 20 Min)

*This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*

Ask participants to share their answers to these questions in small groups(15 min):

- What is most challenging about balancing productivity and scientific excellence with mental health and wellbeing?
- What characteristics would you expect in a workplace that values the mental health and wellbeing of its lab members?
- How can lab members support each other in lab, particularly when they are experiencing challenges and setbacks?
- What kinds of supports are available in your lab institution that support people's mental health and wellbeing?

Share takeaways with the bigger group(5 min) Depending on the size of the group you may want to limit the sharing out to one takeaway per group or just take 3-4 takeaways total.

### 5. Activity: Personal Scripts for Managing Stress

*Implementation tips:*

- *This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*
- *It may be helpful to have a slide with the scenario that the lab members will discuss.*

Read the following scenario:

"You are working in a lab, and serve as a graduate research assistant. Your position requires you to give direction and advice to undergraduate students throughout the semester. You have recently experienced a family loss outside of the lab. This has been an additional stressor in your life and is impacting your quality of work. Some peers have also begun to notice your change. You know a large group of students is dependent on you, however it is becoming increasingly difficult to focus." How would you navigate this situation?

Discussion (10-15 min):

- Walking through each step using the DMF and share your responses with others in your small group.
- Share some personal scripts for communicating with your boss and/or the students you are advising that you are having difficulties focusing on work because of personal issues.
- If you were the lab head and a lab member is struggling getting their work done because of stress, how can you be supportive?

Share takeaways with the bigger group (5 min).

## 5. Activity: Personal Scripts for Collaborations

*Implementation tips:*

- *This discussion can either be done in small groups or as a whole group. If you do the discussion as a whole group ask the discussion prompts below to the whole group. If you break the lab into smaller groups of 3 to 4 people follow the protocol below.*
- *It may be helpful to have a slide with the scenario that the lab members will discuss.*

Read the following scenario:

"Your lab, along with other labs at different institutions, collaborates frequently with a field researcher who periodically sends you data for analysis. Although you have never met this scientist, your name appears on several papers with her because you helped with some sections of the manuscripts. But now you are concerned. This week, you and colleagues at other institutions received an email from a reader pointing out a troubling discrepancy in the data in one of those articles, which was recently published in a top journal. The field researcher, who is on a research trip in Bolivia at the moment, has insisted by email that everything is fine, but you are not so sure. After all, you think, how hard would it be to fabricate results if no one else has access to the full data set? Meanwhile, your colleagues at other institutions --most of whom are tenured, unlike you --do not seem to be in a hurry to address the problem. What should you do?"

**Discussion (10-15 min):**

- Walking through each step using the DMF and share your responses with others in your small group.
- Share some personal scripts for raising concerns about a collaboration with your collaborator and/or other colleagues.
- If you were the lab head and a lab member is going to be involved in a collaboration what advice would you give them?

Share takeaways with the bigger group (5 min).

## 6. Discussion: Lab Manual (20 Min)

Revisit the list of information would be helpful to have in advance, or available on your first day joining a lab from the previous discussion session.

- What revisions would you make to that list?
- Are there practices you could add for supporting lab members who are experiencing mental health issues?
- Are there practices you could add for mentoring conversations and collaborations?

If your lab has had the second iREDS discussion, you may ask participants:

- What were some key takeaways from that iREDS discussion?
- What protocols or strategies have you implemented following the iREDS discussion?
- Is there additional information you would add to the lab manual based on the iREDS discussion?

Make the necessary revisions to the list of information to include in the lab manual as participants share their ideas.

## 7. Wrap Up (5 Min)

- Ask for any general takeaways from this session, questions, or concerns.
- Give everyone an opportunity to share what worked well for this session and any suggestions for future sessions. Give the options to lab members to share additional suggestions by email.

## 8. Reflection (2 Min)

Write everything that comes to mind for one minute straight: What is the most useful, novel, or meaningful think you learned from today's discussion? Why was it useful, novel, or meaningful to you? How has it changed your thinking?

# Appendix

## APPENDIX A: TEMPLATES

Sample email

Sample agenda

Sample slide deck

## APPENDIX B: PERSONAL SCRIPTS FOR DIFFICULT CONVERSATIONS

### When There's Conflict Between Two People in the Room:

- Reflect back what you are hearing from each person in a nonjudgemental way to clarify what the concern might be.
  - "Is what you're saying... did I get that right?" Turn to the other person, "It also sounds like what you are saying is..." "It seems like both of you have expressed concerns about..."
  - "Let me make sure I've heard you right... have I left anything out?"
- Acknowledge the conflict or tension:
  - "It seems to me like you both are daylighting the crux of the issue here. I just want to acknowledge that this topic is really difficult and also normalize it's important to be able to share our frustrations with one other productively."
  - "Our goal here isn't necessarily to agree with each other. It's to be able to understand what's important to each of you and recognize those are real."
  - "I realize this is a difficult topic and hard work..."
- See if you can get each person to put themselves in the shoes of another:
  - "Could you explain in your own words what you just heard \_\_\_\_\_ say?"
  - "Is there something you think \_\_\_\_ should understand that you don't think is being heard?"

### If Someone Is Taking Up Too Much Space:

- Gently interrupt, and say "Thank you for sharing. I wonder what others think?"
- "I really appreciate you touching on this point. I'd like to invite others to share who I haven't heard from yet."
- "I'm sorry to interrupt, and I'm noticing that others haven't had a chance to weigh in."
- turning it to others "that's interesting; what do others think?"

- "It sounds like that is really important to you. Do others share the same opinion, or have a different perspective to share?"
- "So far we have heard about....are there other perspectives on this topic?"
- "We need to hear what others think about this. I think \_\_\_\_ has been waiting to say something."

### **If a Particular Issue Is Not Able To Be Resolved in the Moment Due to Time, or the Conversation Is off Topic:**

- Suggest a particular timeframe to circle back:
  - "I just want to highlight that this is a really important conversation happening, and I also want to acknowledge that I don't think we have enough time to resolve this issue today. How about we put this on the agenda for a future lab meeting?"
- Collaboratively seek a reasonable timeframe to circle back:
  - "I just want to highlight that this is a really important conversation happening, and I also want to acknowledge that I don't know that we have enough time to resolve this issue at the moment. When would be a reasonable timeframe for our group to circle back on this?"
  - "I'm noticing there's a lot of energy around this topic and I don't know that we have time to fully resolve this today. How would we like to proceed with this issue as a lab together?"
- Inviting a side conversation:
  - "This is a really important conversation that is occurring right now and I wonder if we three want to take this offline after the lab discussion."
- Redirecting:
  - "We seemed to have gotten a bit off topic here. Can we go back to..."

### **What To Do When Someone Says Something Derogatory or Offensive:**

- Respond immediately with a prepared personal script:
  - "I'm not comfortable with that."
  - "Our goal is to have an open discussion with each other about hard topics, and that makes it harder. We're interested in what you have to say; could you rephrase in a way that will make it easier for us to concentrate on the point you're trying to make?"
  - "Our ground rules call for us to grant each other courtesy and respect. The way I heard that, it didn't sound like it fit our ground rules and could be hurtful or offensive. Can you try without that element?"
  - "We welcome questions in good faith. I'm wondering if you you have a question in your statement?"
  - Whatever you intended, the effect of the way you said that is coming across offensive/derogatory. I'm going to rule that out of order and bring us back to our ground rules.

## Holding People to the Community Agreements:

- "I just want reminder ourselves of the community agreement/ground rule to..."
- "It would help that we ....., as the group agreed to earlier in our lab discussions."

## APPENDIX C: SKILL PRACTICE

In this program were introduced to several communication tools and skills:

- Decision Making Framework for making better decisions
- And Stance for better communication
- Personal scripts for difficult conversations
- Active listening and asking good questions
- Being an upstander

Maybe you may practiced these skills in the logbook and/or with other program participants, and feel additional practice would help you master the skill for application to real-life situations. This approach is meant to help you do just that.

### 1. Commit to practicing one skill.

Pick one of the skills that you would like to practice more. Make sure that you completed the logbook exercises and reflections related to this skill.

Skill to practice:

### 2. Commit to a timeline.

Commit to practicing the skill over a month or so. Write down the dates that you will start and end your practice.

Beginning date:

End date:

Keep track of your practices, whether on your phone or in a spreadsheet that records the day, how many times you used the skill or the hours in which you were practicing, and, as it occurs to you, any comments. For example:

Day / #

Times Practiced