WASHINGTON STATE UNIVERSITY
**NIH Protein Biotechnology
Training Program**

**Today's Objectives**:
1. Explore how a growth mindset can be integrated into mentoring
2. Practice communication skills for providing constructive feedback
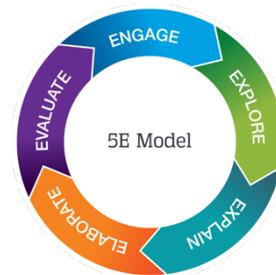
**Activities for Today:**
1. ENGAGE: Growth mindset from *LIFT: Learn. Inspire. Foster. Transform*
2. EXPLORE: Entering Mentoring "In Over His Head"
3. ELABORATE: Active Listening and your personal mentoring case studies
4. EXPLAIN: "Mentor Interview About Making Research Posters" to use with undergrad mentees

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**ACTIVITY 1. ENGAGE—What's a growth mindset?**
*(Adapted from WSU LIFT, co-facilitated by Cara Hawkins-Jedlicka, Matt Peck, Janet Peters)*

1. We are going to set up a continuum space with panic, growth, and comfort zones along a number line.
2. Move along the continuum to indicate what "zone" are you are in when…
   a. Trying a new food.
   b. Rewatching a favorite show on TV.
   c. Repairing an instrument.
   d. Meeting somebody new.
   e. Not knowing the answer.
   f. Telling somebody you don't know the answer.
   g. Setting research goals for yourself.
   h. Setting research goals for others.
   i. Receiving feedback from others.
   j. Giving feedback to others.
   k. Giving feedback to yourself.

3. Why do folks often feel incompetent when they are starting something new?
4. What can a mentor do (for better or worse) to monitor or change a mentee's zone?

**ACTIVITY 2: EXPLORE**—"In Over His Head"
*Source: Entering Mentoring*

## Learning Objective:

Implement varied approaches to foster their mentees' independence in scientific research.

**Case Study** **In Over His Head**

An eager undergraduate student works in a team led by a theorist and a mass spectroscopist, along with other undergraduates as well as graduate students. The undergraduate's job is to model organometallic reactions under study by the mass spectroscopists using a code the theorist wrote. He tears into the task, learns how to interpret the output which is in a rather obtuse format, and decides to test the validity of the code on his own before getting down to actual modeling. He builds a He2 molecule, which the code correctly shows falls apart. Everyone is happy and says, "Great, keep going." Later, during an open house in the department, the undergrad sees some fantastic 3-D visualization software used by the X-ray crystallographers and realizes that if they could figure out how to get the output of the modeling code into a format usable by the X-ray crystallographers the group would have a much better visualization tool for the modeled molecular bonds. The team says, "Great idea!" and encourages the undergraduates to work on it, but no one has the time to help him in any significant way. The undergraduate hasn't even had a coding class yet and feels this would be a monumental effort for him. He's a bit shy about asking random people in the department for help, so while he thinks about the problem somewhat, the idea languishes.

### Guiding Questions:

1. How do you determine what level of independence your mentee is ready for? How do you support their growth and balance that support with the other needs of the research lab?
2. How do mentees know what level of independence they are expected to achieve? Do they understand that this will change throughout their careers? How can you help them understand this better?
3. What is the mentor's responsibility in this case for communicating the level of support needed and available?

Extra Question: Identify moments in the case when the mentee <u>and</u> mentoring team are demonstrating signs of being in the comfort, growth, and panic zones?

**ACTIVITY 3. ELABORATE: Growth Mindset and Active Listening in Three Variations**
*Combining "games" from three sources*

*Purposes:*
1. Practice active listening, and observe non-verbal communication used by others.
2. Foster growth by giving and receiving feedback about mentoring relationships.

*Tasks:*
*A. On your own (do a quick write or meditation):*
1. Identify a challenge that you are having in a mentoring relationship where you could use advice.
2. Plan to describe this challenge in about three minutes while protecting the privacy of others.

**<< If you are having trouble identifying a mentoring challenge, look at some examples of common mentoring challenges in the "Sticky Situations" appended to the end of this packet.**

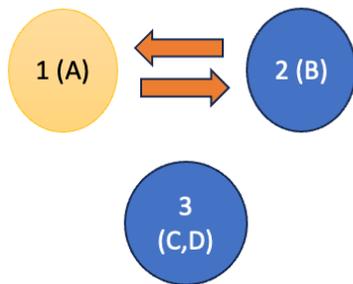*B. In groups of three or four. Communicating in three variations:*
*Groups of three: Assign and use the #1, #2, and #3 labels*
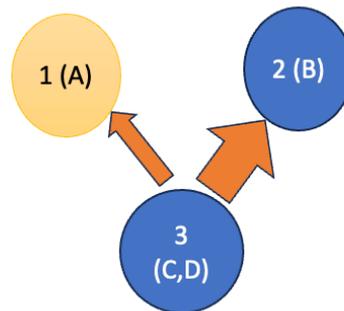*Groups of four: Assign and use the A–D labels.*

# ACTIVE LISTENING: Variation X

**3 minutes; #1 explains mentoring situation.**
**3 minutes; #2 and #1 then discuss a potential plan of action.**

**3 minutes: #3 (C,D) shares notes on tone, body language, facial expressions observed during the interaction**
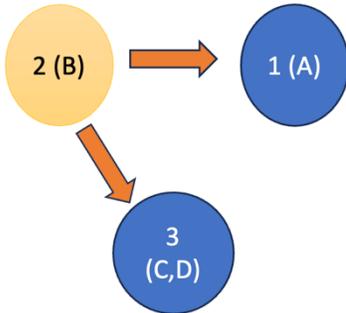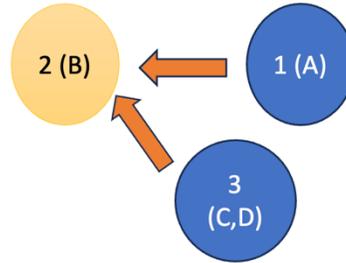
*Source: Entering Mentoring "Active Listening"*
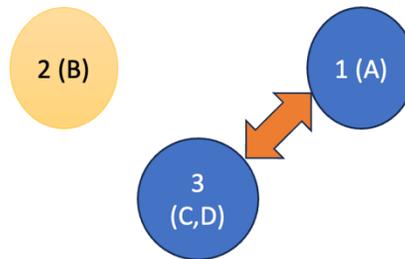
ACTIVE LISTENING Variation Y

**3 minutes: #2 talks about their situation with #1 and #3 listening but not interrupting**

**3 minutes: Listeners each ask one clarification question for #2 to answer.**
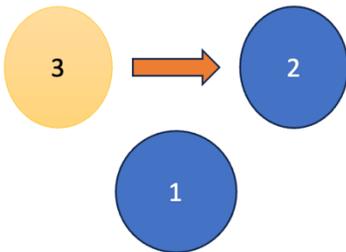
**4 minutes: #1 and #3 discuss a plan of action for #2 with #2 listening but not talking**
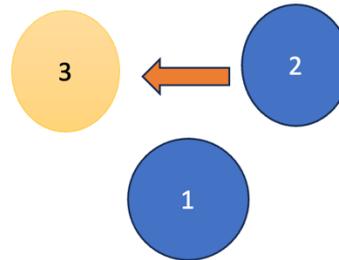
*Source: ABRCMS 2023; Weiwei Xu and Caleb McKinney*

ACTIVE LISTENING Variation Z

**3 minutes: #3 tells #2 about their situation and #1 and #2 listens without interrupting.**

**3 minutes: #2 retells #3 situation as if they were #3 (using first person perspective)**

**4 minutes: #1 leads a discussion of the non-verbal communication observed**

**Groups of 4 break up into two pairs:**

*Source: Collete Taylor, VauLTS conference 2023*

**DISCUSSION QUESTION: What themes are emerging from these conversations and exercises?**

<u>ACTIVITY 4. EXPLAIN/ELABORATE</u>—"Mentor Interview About Making Research Posters"
Tool from *Entering Research (2019) contributed by K. Eskine (2018)*

- Research poster-making is a common growth area for undergraduates and new grad students.
- Do you think the following tool would help you foster a growth mindset and align expectations with one of your mentees?

## MENTOR INTERVIEW ABOUT MAKING RESEARCH POSTERS

### Learning Objectives

Trainees will:
▶ Learn how to create a research poster.
▶ Learn disciplinary norms for graph or image construction.
▶ Set deadline(s) for poster completion.

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Before you begin creating your research poster, interview your mentor to learn about the policy and formatting standards that you should use as a member of the research group.

1. How independent would you like me to be in making this poster (do you want to see the intro, then the methods, etc., or are you happy to see a completed poster for edits)?

2. Is there a template our research group uses that I should use? Is there an example that I can refer to?

3. What software program does the research group use to make posters? Are there particular parameters that I need to set, like height and width?

4. What software program does the research group use to make graphs? Do you have any tips or are there any formatting conventions that I should use to make the graphs?

5. What software program does the research group use to manipulate images? Do you have any tips or are there any formatting conventions that I should use to create images?

6. I will present the poster on [insert date]. By what date would you like to see the poster so that you have enough time to review it and provide feedback for revision?

7. What research funding sources should I cite on the poster? Are there any specific funding agencies or grant numbers that I should include?

Notes:

Deadlines: