

Smoothing out group dynamics in undergraduate research - Guidelines and a sample intervention ¹

We know that rocky group dynamics can interfere with a successful research experience. We gather here some advice based on our discussion.

1 Discussion of diversity and inclusivity

Before generating a memorandum of expectations for the group's work, have everyone take an implicit bias test. Group members keep their results to themselves, but the group comes together to reflect on what they discovered.

Hand out some readings on the benefits of having a diverse group ², and discuss with the group. What experiences have they had working as a team? How was that experience? What was the team make-up?

If possible, invite an expert (from the communications department or other campus entity) to come and talk to the group about communication, group interactions, and bias.

2 Develop norms and expectations for interactions in their group

List for the students potential challenges in doing group work. For example:

- different skill levels in the group
- different cultural backgrounds in the group, resulting in different behaviors
- group members bring different assumptions of how people will react
- difficulty in listening to criticism
- group members might disagree on how to approach a problem
- group members prioritize time differently
- one group member wants to stay in control
- a group member might consider making a mistake as “wasted time” rather than an essential part of the process

After the expectations are documented, the group should decide on consequences for failing to meet the expectations. Some of these consequences may need to be implemented by the professor, or someone external to the project. For example, the professor controls letters of recommendation and sometimes paychecks.

3 Deal with group interaction problems head-on

If your group runs into problems, first speak to group members individually to see what the issues are. If there is an individual problem, such as someone not showing up or someone not doing their work, point

¹generated by the AALAC Workshop on Undergraduate Research in Applied Mathematics, Bryn Mawr, June 2017

²<https://www.scientificamerican.com/article/how-diversity-makes-us-smarter/>

to the Memorandum of Expectations, and the consequences that were agreed upon. If necessary, follow through. (For example, if the agreement was that someone who did not show up for a certain number of hours is removed from the group, then follow through on that).

If the issue is with the group dynamics (for example, the group is not functioning because they cannot agree on how to proceed), consider an intervention. This intervention could take the following form (based on a Posse activity).

3.1 Sample intervention to improve group dynamics.

Goal This workshop is designed to facilitate an open dialogue around interactions within the research group. Group members should use this time to explain that they may need to take the time and create a space to develop a positive attitude about the group.

Activity: Index Card Reader Handout two note cards to each group member.

Instructions:

1. Write one concern that you have about your research group.
2. Write one positive thing about your research group.

Once the group has completed the task, the professor collects the note cards (to be used later). The first note card will be used after the Human Barometer to gauge whether or not all of the issues have been discussed. The second note card will be used as a closure.

Activity: Human Barometer The professor has previously identified items in the memorandum of expectations that have been violated. These will be then read to the group as statements. For example:

- Everyone in the group listens respectfully to ideas of others.
- Group members are able to listen to criticism.
- One person controls the direction of the research.

A line is drawn on the floor (or taped on the floor). Each statement is read out loud, and, after each statement, group members position themselves on the line. The left-most position signifies “I strongly disagree” with the statement, and the right-most position signifies “I strongly agree” with the statement. We call this a Human Barometer because it measures pressure: we use people’s positions on the line to gauge where people are at within the research group. The group member’s job is to listen to the statements that are read, and then bolt immediately to the point on the line that best represents their point of view - this needs to happen really fast, so that people go with their first instinct. Once group members have positioned themselves, the group members are given a chance to explain *briefly* what they think and why they took that position. They are free to move if they hear someone say something that they hadn’t thought about before.

After everyone has had to opine, the facilitator says “Next Statement”, at which point everyone moves to the middle of the line. Then the next statement is read, and group members move quickly to the point of the barometer that best represents their position on the statement.

The **facilitator** can use a koosh: someone can only talk when they are holding the koosh. Cut off discussions at their most heated point.

The group should be reminded that everyone is going to have a chance to voice their opinion of the statement read. Make sure that the workshop is productive, but also make the environment a “safe space”. This means

that we challenge *ideas* but not people, and that we encourage people to speak their mind even if it may not be a popular idea. A “safe space” means that we may disagree on topics, but we try to practice empathy.

After all of the statements are read and reacted to, process the exercise. Ask the group members: “What do you think should happen from here?”

Before moving on, pull out the index cards with the concerns just to see if there are any topics that were not touched upon during the Barometer.

Pass out the first set of cards, one to each student and have them read what is on the card. If the concern has already been discussed, move on the next card. Do this until all concerns have been discussed.

Closure: Bring out the index cards with the positive notes. Pass out one to each student. Have them go around in a circle and read aloud.