

# Reviewer Feedback Guidance

Ocean Sciences Meeting 2024



Providing effective, supportive feedback for student science research is important to help students grow and develop in their research. Students are seeking feedback that not only helps them grow as a scientist, but also encourages them to develop and continue to pursue the science that they are interested in.

Feedback on student research should be constructive and critical, focused on the actual research and information provided. At the same time, it should encourage students and make them feel that there is a place for them and their research in the world. That balance requires thoughtful wording and specific attention to the research presented and avoidance of personalizing or making personal judgments about the researcher beyond the scope of the research presented.

**Reflect on your own boundaries and biases:** Identify your disciplinary, geographical, and/professional background and relevant expertise, as well as the limits to that expertise and try to identify the extent to which these may, or may not, be aligned with those of the student. In cases where they are not, acknowledge this at the outset and provide whatever feedback you perceive as most helpful from your expertise. AGU is a global community and has student participants from many different countries. Ensure that your feedback recognizes that we are an inclusive and welcoming community that values the diversity (regional, cultural, language, ethnicity, etc.) that students bring and does not discriminate against students coming from diverse cultures (e.g., non-native English speakers or first-generation students).

**Be specific and constructive:** Feedback like “great job” doesn’t tell the student what was done well, and likewise, a statement like “not quite there yet” doesn’t give any insight into what could be better next time around. Provide specific information on exactly what students did well and what needs improvement. Be intentional about balancing praise and suggestions for improvements. Avoid over-commenting or “picking apart” students’ work. Provide specific feedback on the strengths and areas for improvement in the research project. For example:

**Strengths:** "You effectively explained your research question and the significance of your study. Your introduction is very clear and engaging."

**Areas for improvement:** "I suggest that you provide more detail on your methodology to ensure that your results are replicable. Specifically, you may consider adding information on the variables you controlled for and the statistical tests you used."

**Orient your feedback toward the future and offer opportunities for growth:** Suggest opportunities for students to expand their knowledge and experience in science research. When providing feedback on how to improve, suggest what you’d like students to address, change, or focus on in future work. Prompt new considerations or ask questions that students can consider when they conduct work in the future or encourage them to present their research at other conferences or to apply for research positions. For example:

**Feedback on implications and future directions:** "Your research has interesting implications for understanding the effects of climate change on the local ecosystem. I suggest that you consider exploring these implications further and potentially developing recommendations for future research."

**Opportunities for growth:** "I think your research project has the potential to be presented at [specific conference in addition to the AGU Annual Meeting]. You may want to consider submitting an abstract to the upcoming [specific conference in addition to the AGU Meeting]. It's a great opportunity to get feedback from other researchers and share your work with another audience."

**Provide feedback on the presentation content and not just the delivery of the presentation:** Many students are looking for feedback not just on the presentation style (e.g., visuals, figures, delivery) but also on intellectual or practical merit of their work, appropriateness of approach/methods, additional expertise/literature to lean on, novelty of their results or work as compared to other peers, etc. Please take time to provide feedback on the content and substance in addition to the delivery of the material. To do this:

**Feedback on the research question:** "Your research question is interesting, but it would benefit from further refinement. You may want to focus more specifically on a particular aspect of your research question to make it more manageable and answerable."

**Feedback on methodology:** "Your methodology is clear and well-described, but I suggest that you add some more detail on the data collection process. This would help ensure that your results are replicable and could help strengthen your conclusions."

**Feedback on data analysis:** "Your data analysis is clear, but I suggest that you consider using a different statistical analysis to ensure that your results are more robust. You may want to consult with your advisor on this issue."

**Encourage attention to detail:** In scientific research, attention to detail is crucial. Offer feedback on the details of the research project, including the accuracy and precision of the data collected, as well as the quality of the analysis. For example:

**Feedback on attention to detail:** "Your research is impressive, but it would benefit from more attention to detail in the data collection and analysis process. Consider double-checking your data to ensure accuracy and precision, and reviewing your analysis carefully to ensure that it is accurate."

**Recognize their achievements:** Acknowledge the student's achievements and progress made in their research project, regardless of the level of difficulty or resources available to them. For example:

**Recognizing achievements:** "You have made great progress in your research project. I am impressed by your commitment to your work and your ability to navigate challenges along the way."

In summary, providing feedback to students on their research requires focusing on the research question, addressing the methodology, analyzing the data, discussing implications and future directions, and encouraging attention to detail, and it requires providing constructive feedback that encourages students and encourages them to be part of the larger research community.