

U.S. GLOBE Student Research Symposium (SRS) Project Review Form

Project: Do Chemical Processing Plants Emissions Affect
Local Water Quality?

Review from Brendan OConnor, Space and Technology Corporation

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Brendan O'Connor

Brendan is a Support Scientist for the GLOBE Program. Originally from Ireland, Brendan is a NASA contractor with Science and Technology Corporation Inc., at Goddard Space Flight Center. Brendan works on a range of projects to help support the GLOBE Program.

Brendan has a background in environmental science and biological oceanography. He worked as a biologist for 8 years in Florida before joining the GLOBE Program.

In his spare time Brendan loves to kayak, play with his dog Angus, and is learning how to paddle board.



Research Question

- Objectives are clear and focused and answerable

Your objectives are clear and focused and demonstrate a knowledge of an issue that affects your local community.

Research Methods

- **GLOBE protocols or data are used**
- Defines what is being observed or measured
- Well-designed research plan

Using pH to test water samples is a great start for your research. Would you consider adding more sample locations? Having a control site that may not be affected by the emissions is a great scientific approach. It sounds like your next steps will be determined by the initial results from your pH samples. How long do you plan to collect and test samples? You mentioned during the virtual SRS that you might include microplastics as a topic which would greatly expand your research and continue to inform your local community on important environmental issues. This demonstrates a willingness to expand your research question and is a great demonstration of applying new ideas.

Results

- Shows or summarizes observations through text, graphics, mathematics, statistics, stories and/or illustrations
- Interpretations are supported by data

You don't have any results yet but it will be interesting to see any differences in the pH results of your two sample locations. Are there any companies discharging into the Caddo Lake that might affect the pH of your samples?

Discussion/Conclusion

- Puts findings in context
- Described future plans or research possibilities
- Includes acknowledgement of scientific literature, data and/or local knowledge

Your proposal is a good start and we commend you on moving forward with your project after some of your initial team decided not to proceed.

Presentation

- Logical organization, visualizations are clear
- Demonstrates understanding of project science and local relevance to community

Your presentation was good. Using a map to show the locations of your different sampling locations was very useful. You clearly explain how often you are going to collect samples and how the results of your pH analysis will inform your next steps. You might want to consider using additional water quality tests that are detailed in the GLOBE Program such as water temperature, water transparency or dissolved oxygen.

Specific areas in which the project excelled (select all that apply)

- ☐ Use, Analysis or Visualization of GLOBE Protocols/Data
- ☒ Community Impact
- ☐ Research Process
- ☒ 21st Century Skills
- ☒ Community Knowledge (stories, values, language, history)

Further comments or questions

Good luck with your research project!

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