

"Climate Buddies"

Supporting Student Engagement in Authentic Environmental Research While Building Connections Between Middle School Classrooms and Post-Secondary Research Teams Through Science Fair Projects



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A native Alaskan from the village of Beaver, Darcy works to build positive and respectful relationships between researchers and the communities in Alaska who are experiencing climate change first hand.

Darcy has her B.S. in Environmental & Organismal Biology from Fort Lewis College and is currently focusing on climate change issues such as microbial genomics and CH₄ & CO₂ emissions in the Arctic and Subarctic. She has participated in the Polaris Project for the past two summers along with others students and researchers from the Woods Hole Research Center in Massachusetts. Communicating these climate changes to Alaska Native communities, and documenting indigenous knowledge is a paramount for Darcy and future generations.

Olivia is looking into different types of plastics and how they breakdown in the environment. Her science fair project "The Evaluation of the Bio-degradability of Bio-plastic utensils



in Various Outdoor Environments" shows her interest in protecting the local and global ecosystems by applying the lessons she has learned from her classes and her buddy.

"Thank you for creating such a wonderful program!"



Thank you to all of the mentors and to all of the students!



Olivia is a 7th grader who is concerned about the plastics that are entering the world's oceans and waterways.

Finding a renewable fuel source from compost and leaves is what interests Molly for her science fair question.



As a senior at Berkeley, Annie is looking at thawing in Alaskan permafrost and mapping the potential carbon emissions that are changing the Yukon-Kuskokwim Delta.



Middle school students collaborating and learning from college undergraduates. Here are three examples of how these kinds of opportunities promote S.T.E.A.M. education while passing on a deeper appreciation for the environment.

The research that Annie is presenting this year is entitled "Mapping Potential Carbon Emissions in Thawing Permafrost Soils and Sediments in the Yukon-Kuskokwim Delta", which is a result of the 2018 Polaris Project expedition this past summer. Nothing terrifies me more than the thawing of the permafrost, and the release of the carbon gasses stored therein, which is why I believe cultivating an interest in arctic research is so important.



"Can a Mixture of Kitchen Waste Compost and Leaves Be Burned and Used as a Sustainable, Renewable Fuel Source?" is the science fair questions that Molly is asking this year. She sees her education in S.T.E.A.M. (Science, Technology, Engineering, Arts, Math)

as a path to future career opportunities and greater knowledge of life skills. "It has been wonderful to work with a mentor! I have access to so much feedback and advice from someone

who was once at the same place I am. I am so lucky to have her."

"My science fair project has definitely enhanced my education!"



"My buddy mentor has been really helpful! She has given me great advise and insight for my science fair. She also has access to papers from her college that helped me in my research."



As a second year undergraduate student at Hampshire College, Natalie is studying environmental public policy. "Wildfires are expected to increase in frequency and severity due to global climate change and the biogeochemical functions of the Arctic ecosystem." "Science can be intimidating in primary and secondary education and that tends to, unfortunately, push students from the field. Programs where younger students can work with mentors in the field and can ask questions of their own, are fundamental."



A special thank you to my mentor and dear friend Sue Natalie to whom I own so much!