



Welcome to the 10th Annual Vermont EPSCoR Student Research Symposium



Thank you for a successful year of BREE

Your passion and dedication make this event possible!

March 20th, 2018

3:00 - 8:00 pm

Dudley H. Davis Center, University of Vermont
Burlington, Vermont





10th Annual VT EPSCoR Student Research Symposium Agenda

2:30 **Registration**

3:00 **Welcome and Introduction to BREE**

Dr. Arne Bomblies, Senior Associate Project Director, VT EPSCoR

Dr. Veronica Sosa Gonzalez, Coordinator, VT EPSCoR Center for Workforce Development and Diversity

3:30 **Oral Presentations** - See titles on page 2

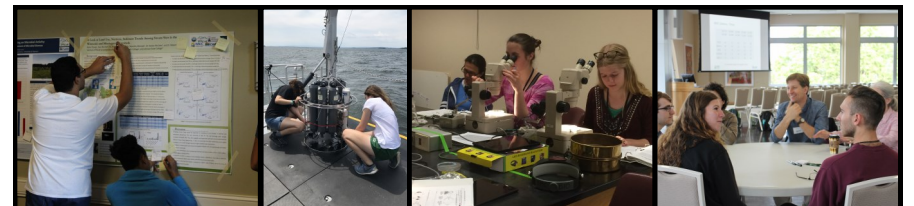
5:00 **Vermont PBS "Saving Our Waters"**

5:30 **Poster Session** - See titles on pages 3-6



2017 BREE Undergraduate Interns

29. Thomas Adler, University of Vermont - **Optimizing Fluorescence Spectroscopy Methods in DOC Analysis**
30. Toby Smith, University of Vermont - **A Comparison of Inter-Annual Variability of Nutrient Dynamics in St. Albans and Missisquoi Bays**
31. Grace Brouillette, Nathan Wu, Erin Bessy, Essex High School - **Land Usage Impact On Nitrogen and Phosphorus Levels**
32. Emily Piersiak, University of Vermont - **Quantifying nutrient levels of agricultural and forested soils in the Lake Champlain watershed**
33. Camelia Iturregui, Julyanice Cruz, Yiria Muñiz-Costas, Academia María Reina - **Correlation between water quality & macroinvertebrate population in urban streams after Hurricane María**
34. Benjamin Frechette, Lyndon State College - **The Effect of Era-Interim Resolution on Simulated Rainfall by a Regional Climate Model Over the Lake Champlain Basin**
35. Ilán Nieves Gómez, University of Puerto Rico, Rio Piedras - **Analysis of Large Precipitation Events in St. Johnsbury, Vermont from 1900 to 2016**
36. Ángela Vega Pérez, Bryan Carrasquillo Llamas, Yomaira Ortiz Pastor, Pedro Falú Orellano High School - **Macroinvertebrates as Bioindicators of the Mameyes River**
37. Lillith Sweet, Malachi Witt, Tom Lane, Bellows Free Academy Fairfax - **A View of Water Quality Characteristics Pertinent to Phosphorus Movement in a 2nd Level Tributary to Lake Champlain**
38. Adrian Heath, Colgate University - **Resilience of Stormwater Infrastructure to Extreme Precipitation Events in the Potash**

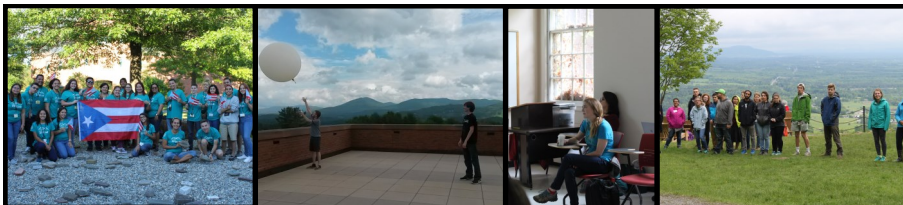


19. Amanda Jackson Mojica, University of Puerto Rico, Mayagüez - **Investigating the Effects of Land Use on Carbon and Nitrogen Fluxes: An Analysis of High-Frequency Sensor Measurements in the Lake Champlain Basin**
20. Heily Chavez, Sabrina Ruiz, Britney Rivera, and Daniela Contrera, Oluwanifemi Mabayoje, Kristen Cacciatore, East Boston High School - **Effects of Land Use on Water Quality in Two Massachusetts Streams**
21. Bridger Banco, University of Vermont - **Inter-Annual Variability of Discharge & Cyanobacteria Blooms in St. Albans & Missisquoi Bay**
22. Hannah Giesing, Eliza Goodell, Carl Hildebrandt, Oxbow Union High School - **Effects of Increased Sediment on Biodiversity**
23. Yahaira Sánchez Viruet, University of Puerto Rico, Rio Piedras - **Geological features in St. Albans Bay, Lake Champlain**
24. Mikayla Castillo, Arizona State University - **Using Total Suspended Solids and Total Phosphorus Data to Compare Forested and Agricultural Streams in Vermont**
25. Jordan Finkelstein, Ethan McCabe, Sharon Boardman, Rice Memorial High School - **An 8-Year Comparison of Insect Populations in Potash Brook**
26. Gabriela Handal, Andrea Salellas, Marcel Torres Alacalá, Robinson School - **Resistance and Resilience of Macroinvertebrate after Drought and Hurricane Disturbance of Two Streams in San Juan, Puerto Rico**
27. Sara Nethercutt, Tulane University - **Sediment Characterization in St. Alban's Bay, VT**
28. Sionánn Harrington, Zachary Lee, Scott Worland, Long Trail School - **An Evaluation of Current Stream Discharge Measurement Methods & an Analysis of the Relationships Between Accompanying Parameters**

Oral Presentations

3:30-5:00pm

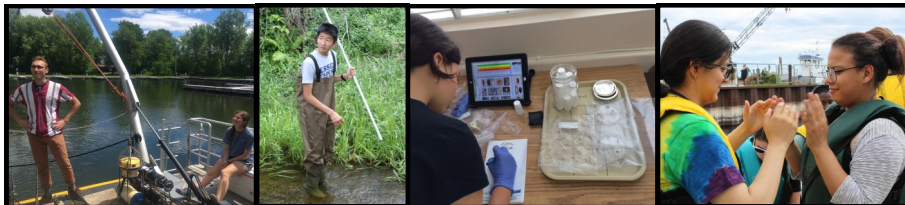
- 3:30 Grace Hemmelgarn, Sarah Clauss, Michelle Pinaud, Champlain Valley Union High School
The Effect of Land Use on Salinity and Total Suspended Solids
- 3:40 Krisha Sachdev, Katherine Slawinski, Ann Marie Mahar, Rutland High School
Comparison of Temperate vs Tropical Total Phosphorus: Total Suspended Solid Ratios
- 3:50 Cameron Pratt, Castleton University
Network Analysis of Missisquoi Action Arenas
- 4:00 Natalia Rodriguez, Natasha Ramos, Rose Trinidad, Juan Ponce de León High School
The Mystery of NO₃ in La Venta River
- 4:20 Molly Duncan, Oliver Bijur, Nicole Gorman, Champlain Valley Union High School
The Effect of Average Annual Precipitation on Macroinvertebrate Biodiversity
- 4:30 Matthew Reale-Hatem, Pomona College
The economic effects of algal blooms in the Lake Champlain basin
- 4:40 Juan Melendez, Dariany Santiago, Elliot López, Juan Ponce de León High School
Hurricane Impact and Macroarthropods Resilience at Yunes River
- 4:50 Kunal Palawat, Collen Yancey, University of Vermont
Understanding the biogeochemical role of soil microbial communities in VT agricultural riparian zones connected to Lake Champlain



Poster Presentations

5:30-7:00pm

1. Alexis Doreste, Boston University - **The Significance of Wealth and Education on the Institutional Preparedness of Vermont Towns to Extreme Events**
2. Antonio Landrau Suazo, Jean Ortiz Calo, Rosaliz Rodríguez, José Aponte de la Torre School - **Drought vs Hurricane Maria**
3. Maria Culotta, Townsend University - **The Major Lake Segments within Lake Champlain that are affected by the Excessive Levels of Phosphorus Polluting the Lake Champlain according to the 2016 TMDL Plan**
4. Shareily Vázquez Lago, Universidad Metropolitana - **Post-Storm Event Comparisons of Discharge and Total Suspended Solids in Sites of Various Land Uses and Sizes in Vermont, USA**
5. Tatum Duba, Richard Vincent, David McNally, Winooski High School - **Comparison Between Low and High Impacted Streams**
6. Anna Juarez, Nisha Patel, Dr. Thomas Townsend, Indian Land High School - **The Effects of Development on Macroinvertebrate Populations and Water Quality in Local Streams**
7. Karla Larios, Rutgers University - **The effects of wetlands on river concentrations of particulate and dissolved phosphorus**
8. Carla Ayala Crespo, University of Puerto Rico, Rio Piedras - **Effects of Rainfall on Water Quality Parameters in Potash Brook**
9. Celia Fisher, Lyndon State College - **Spatial Patterns in Summer Precipitation Changes across Complex, Mountainous Terrain in the Northeastern United States**
10. Elijah Orland, Middlebury College - **Sedimentary Pockmarks in Missisquoi Bay**
11. Guillermo Rivera Rodríguez, Graciela Martínez Torres, Glenda Almodóvar-Morales, Specialty School Of Fine Arts Ernesto Ramos Antonini - **Changes in streams in Yauco River and Duey River in Yauco, Puerto Rico**
12. Gemma Del Rossi, University of Vermont - **Farmer perceptions of agri-environmental programs: A look at the institutional design of EQIP and CREP in the Lake Champlain Basin**
13. Kevin Ziegler, University of Alabama - **Impacts of Differing Resolutions on Precipitation using the Weather Research and Forecasting Model**
14. Sionánn Harrington, Zachary Lee, Scott Worland, Long Trail School - **An Evaluation of Current Stream Discharge Measurement Methods and an Analysis of the Relationships Between Accompanying Parameters.**
15. Jeralyn Carmichael, Columbus State University - **Dimensions of Prior Experience as a Factor in the Creation of Resiliency and Hazard Mitigation Measures**
16. Ashley Sanders, Castleton University - **Effect of Photochemical Transformation on Dissolved Organic Carbon Concentration and Bioavailability from Watersheds with Varying Landcover**
17. Ángel Estruche Santos, Melanie Pérez Castillo, Pablo Hernández García - **Resilience of Streams Macroinvertebrates and the effect caused by a Reservoir after Hurricane María over San Juan, Puerto Rico**
18. Ernesto Vázquez Nevárez, University of Puerto Rico, Rio Piedras - **Study Of Bioavailable Carbon And Its Concentrations Due To Photochemical Activity In Agricultural, Forested And Urban Streams That Disembogue At Lake Champlain After An Extreme Event**



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