



Welcome to the 9th Annual Vermont EPSCoR Student Research Symposium



**Thank you for a successful completion of
the RACC grant and a great start to BREE.**
Your passion and dedication make this event possible!

March 28th, 2017

3:00 - 8:00 pm

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





9th Annual VT EPSCoR Student Research Symposium Agenda

2:30 Registration

3:00 Welcome and Introduction to BREE

Arne Bomblied, VT EPSCoR Senior Associate Project Director,
and Mike Winslow, VT EPSCoR Center for Workforce
Development and Diversity (CWDD) Coordinator

3:30 Oral Presentations

See titles on page 2

5:00 Poster Session

See titles on pages 3-6



2016 RACC Undergraduate Interns

30. *Nathaniel Dooley, Saint Michael's College* - **Utilizing the Relationship Between Agriculture and Total Phosphorus to Study the Efficacy of Best Management Practices in Vermont Watersheds**

31. *Cristina Gandia-Vice, University of Puerto Rico, Rio Piedras Campus* - **Hydrology Model for Educational Purposes**

32. *Meara Heininger, Jack Koskinen, Nicole Gorman, Champlain Valley Union High School* - **The Effect of Species Diversity on the Presence of the Stonecat**

33. *Zachary LaPoint, Saint Michael's College* - **The Effect of Storm Disturbance on Macroinvertebrates**

34. *Anna Meeks, Courtney Kondi, Dalton Gomez, South Royalton High School* - **The Effects of Land Use on Phosphorus and Sediment Concentrations in the Lake Champlain Basin**

35. *Rebecca Roman, University of Vermont* - **Examining the Effect Grazing in Ross Brook on Phosphorus Levels**

36. *Olivia Kuk, Ali McCostis, David Spero, Ph.D, Burr and Burton Academy* - **A Comparison of Macroinvertebrate Populations in the Battenkill and Mettawee Rivers: A Story of Two Watersheds**

37. *Laura Albino Díaz, University of Puerto Rico* - **Evaluating Cover Crops' Ability to Reduce Phosphorus in Agricultural Runoff through Meta-Analysis**

38. *Grace Hemmelgarn, Sarah Clauss, Michelle Pinaud, Champlain Valley Union High School* - **The Effect of Land Use on Total Suspended Solids and Discharge**

39. *Gavin Farnsworth, Alex Valley, Meghan Wilson, Hartford High School* - **Comparing Macroinvertebrates from Dothan Brook and Bloody Brook in 2016**



20. *Adamaris Muñiz Tirado, Paige Fernandez, University of Puerto Rico, Mayagüez Campus, Middlebury College* - **Quantification of Phosphorus Release Potential from Various Fractions via the SEDEX Extraction**

21. *Maxwell Landsman-Gerjoi, University of Vermont* - **Does Vegetation Diversity in a Bioretention Cell Affect Soil Microbial Activity and Nitrate Levels in the Effluent?**

22. *Nasser Abdel-Fatah, Johnson State College* - **Historical Comparisons of Summer Storm Events from St. Johnsbury and Burlington, Vermont**

23. *Wileyshka Rivera Santiago, Universidad Metropolitana* - **Green Stormwater Infrastructure Efficiency on Biofiltrating TSS and TP from Runoff**

24. *Hannah Giesing, Eliza Goodell, Richard Rosten, Carl Hildebrandt, Oxbow Union High School* - **Dam Sediment**

25. *Mariah Witas, Saint Michael's College* - **The Impact of Land Cover on Habitat Assessment and Nitrogen Levels in Vermont's Lake Champlain Basin**

26. *Camelia Iturregui, Julyanice Cruz, Yiria Muñiz-Costas, Academia Maria Reina* - **Correlation Between *Enterococci* and Macroinvertebrate Population as Water Quality Indicators in Urban Streams**

27. *Efraín Y. Carcaño Ramirez, University of Puerto Rico* - **Perception of Impervious Cover in Lake Champlain Basin**

28. *Hallie Hoffman, Bailey Halliday, Thomas Lane, Bellows Free Academy, Fairfax* - **Phosphorus Loading in the Lake Champlain Basin**

29. *Nichole Montero Marin, Interamerican University Of Puerto Rico* - **Bioretention Cell Capacity at Decreasing Total Phosphorus and Nitrogen to Improve Water Quality**

Oral Presentations

3:30-5:00pm

3:30 *Kaylee Jackson, Saint Michael's College*
Effects of Riparian Buffers on Nitrogen, Phosphorus, and Total Suspended Solids

3:40 *Emilie Lucy, Tiancheng Wang, Scott Worland, Long Trail School*
Correlation of Macroinvertebrates with Watershed Characteristics

3:50 *Chelsea Cole, Amanda Keilty, Dan Wilkinson, Johnson State College*
The Effect of High Flow Events on N:P Ratio within the Missisquoi and Winooski Tributaries

4:15 *Alana Quiles-Trinidad, Darissy Matías-Serrano, Rose Trinidad, Juan Ponce de León High School*
Effects of Agricultural Activities in Physico Chemical Parameters and Benthic Macroarthropods

4:25 *Francisco Pérez-Vargas, Tanairí Reyes-Pérez, Elliot López, Juan Ponce de León High School*
Facing the Stream: The Challenge of Evaluating the Periphyton Growth in Flashy Rivers

4:35 *Richard Moyer, Albright College*
Evaluating Cover Crops' Ability to Reduce Phosphorus Runoff through Meta-Analysis



Poster Presentations

5:00-6:30pm

1. *Nicole Mehr, University of Vermont - Impacts of Agriculture on Greenhouse Gases and Nitrogen Cycling*
2. *Robert Beauregard, Johnson State College - Mount Mansfield, Vermont - Microclimate Analysis from 2000-2016*
3. *Sarah Eustis, Kathleen Garret, Sharon Boardman, Rice Memorial High School - A Leaf Pack Analysis of Potash Brook*
4. *Carly Robbins, Clark University - Verification of the Sedimeter as a Turbidity, Erosion, and Scour Sensor*
5. *Dakota Steele, University of Vermont - Network Relationships Within a Governance System: Vermont's Phosphorus Budget and the Way Systems Interact*
6. *Shanick A. Pagán Fred, Jean P. Ortiz Calo, Rosaliz Rodriguez, José Aponte de la Torre School - Macroinvertebrates vs. Drought Effects*
7. *Mike Greenough, Community College of Vermont - Matric Suction Measurements in Soils*
8. *Andrea Rivera-Rodríguez, Jaleisha Vélez-Velázquez, Glenda Almodóvar-Morales, Ernesto Ramos-Antonini School of Fine Arts - Macroinvertebrates as Indicators of Water Quality in Yauco River and Duey River at Yauco, Puerto Rico*
9. *Joanne Velez Otero, Interamerican University of Puerto Rico - Soil Moisture and Path Loss Signal in Agricultural Soil with Remote Sensing*
10. *Elise Prehoda, University of Vermont - Utilizing Benthic Macroinvertebrates as Indicators of Fecal Contamination in Streams*

11. *Hector A. Fuertes, Jose Antonio Ramirez, Felix Torres Alcala, Robinson School - A Two Year Comparative Study of Water Quality Levels Before and After Drought of Two Streams in San Juan, PR*
12. *Valeria Santana-Pruna, University of Puerto Rico, Mayaguez Campus - Watershed and Lake Bio-Geochemistry: Movement of Phosphorus and Sediments from Forested Areas into Water Bodies*
13. *Rory Cummings, Community College of Vermont - Validation of a NN Weather Generator Methodology Based on North American Regional Reanalysis Historical Data*
14. *Henrique Chang Queiroz, University of Vermont - Development of an R Package to Enable Global and User-Friendly Access to Weather Generators: Software Design Approaches*
15. *Anna Singer, Katie James, Keegan Fitzgerald, Bryan Hirschman, Essex High School - Changes in Stream Health Indicated by Macroinvertebrates*
16. *Colleen Yancey, University of Vermont - Northern Forest Mesocosm (NForM) Climate Change Experiment: An Analysis of Nutrient Loss Based on Frequency of Soil Freezing and Snow Cover*
17. *Brianna Klauer, Hartford High School - A Comparison Between Total Suspended Solids Levels in 2013 and 2016 in Dothan & Bloody Brook in VT*
18. *Jonah Fanelli, Saint Michael's College - Proposed Changes to the Scope of Act 250 and Their Impact on Development in Vermont*
19. *Mackenzie Matchie, Emily Spencer, Don McDowell, Stowe High School - The Impact of Instream Water Temperature Variability Upon Larval Ephemeroptera Population Density in Two Vermont Streams*

