



ReNUWIt

# Removal of bacteria from artificial stormwater using biochar



- Research Team Members

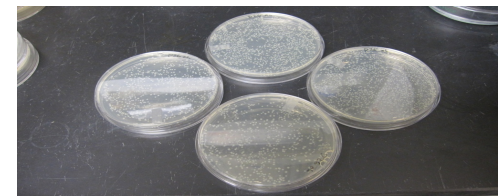
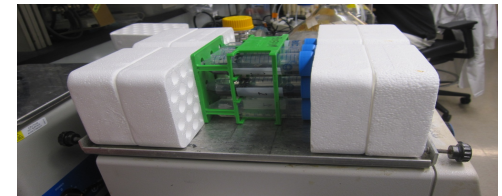
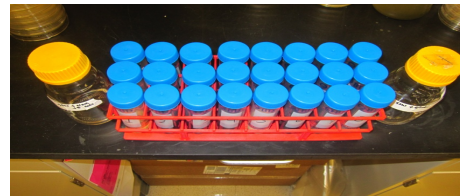
- REU Student, Herby Jean
- Mentor, Sanjay Mohanty
- Faculty Mentor, Prof. Alexandria Boehm

- Objectives

- To examine the capacity of biochars to remove bacteria (*E. coli*) from stormwater.
- Effect of Natural Organic Matter (NOM) on the removal capacity of biochars.

- Scope

- Growth of bacteria (*E. coli*) for 14-15 hours.
- Prepare synthetic stormwater solutions w/ and w/o NOM.
- Measure sand and biochar (5% by weight) for a total sand+biochar medium of 2 grams.
- Perform batch experiment for 1 hour, plate sample of each batch.
- Count bacteria colonies and compare with input synthetic stormwater solutions bacteria count.



# Removal of bacteria from artificial stormwater using biochar



- Outcomes
  - Bacterial removal capacity of biochars is significantly higher than sand.
  - The biochar pyrolyzed at 700°C is more effective compare to the other two biochars.
  - NOM has no impact on removal given the concentration of 20 mg/L.

