CGBF'S GREEN ROBOTICS SPRING CAMP

9am – 12 noon, March 25-29th, 2018
Easton E3 Learning Lab, New Albany – Plain Local School District
Cost: $95 *Contact: reed.11@napls.us*

THE PROGRAM:

- Open to all High School students; and advanced Middle School students by permission.

- Integrate STEM & technology based learning with environmental science:

- Engineering – learn robotic applications for water monitoring and build robotic "Chinampas".
- Physics – understand how energy is generated from Wind, Solar, Fuel cells with hands-on activities.
- Computer science – employ basic coding for the robotic "Chinampas".
- Environmental science – decipher issues impacting water quality, Point & Non-Point sources of pollution, impacts of pH, Ammonia, Phosphorus, Temperature, Dissolved Oxygen on stream water quality.
- Botany – discover native plant species and beneficial effects of wetland plants on water treatment.

- Learn about the process of designing & building an autonomous water monitoring robotic raft created for CGBF that recently received awards at two major Hackathons.

- Work in groups to put together a small robotic prototype, from supplied robotic parts, of a plant-based "Chinampas" (a South American invention for a plant body that floats on water) with beneficial native wetland plants.

- Monitor the water body with the help of sensors that provide wireless feedback to servers on the health of the body including Temperature, pH and Ammonia levels.

- Understand how the data from the water monitoring robotic raft is fed into servers so that there can be further learning opportunities for the students by analyzing the information and hypothesizing potential issues & solutions.