ECE Capstone program
Spring 2018
Project Abstract & Info

Please provide the following information to be shared with on capstone information exchange platform:

1. Project number:

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2. Project title (as will appear on the poster):

Smart Drip Irrigation

3. Team members:

Corey Norton

Masataka Takahashi

Elena Mikhaylova

4. Adviser(s) name(s):

Dr. Hana Godrich

Dr. A.J. Both

5. Up to 5 keywords that will help to classify the project scope:

Water Distribution

Sustainability

Information Processing

Data Aggregation

Energy Efficiency/Optimization

6. Project abstract (up to 250 words) to be shared with judges:

Our project was inspired by the water distribution system that the Rutgers chapter of Engineers Without Borders performs for the community gardens in Camden, NJ. Camden is considered as a food desert, meaning its citizens do not have access to fresh produce. These community gardens allow them to grow their own food, but the citizens run out of water during the summer months due to unoptimized water usage. The Camden Project, which our team is currently involved in, is conducting design work consisting of a rainwater catchment and a solar-powered drip irrigation system. Our team specifically will have the distributions system utilize a sensor network to detect rain, soil moisture and water tank levels. The 40'x80' plot will consist of a maximum size of four 10'x10' beds that the drip line will be distributing water to. Our team will set up an Arduino to retrieve information read by the rain and soil moisture sensors and interface with a mobile device via Bluetooth. The application will allow the system to be adjusted and will provide the Arduino with weekly weather prediction data to aid the water distribution algorithm. A valve switch system will be set in place to control the water pipes to each bed while also being constrained on the readings of the tank level sensor to ensure resourceful water usage.