

Research and Development

Research

[Greenhouse - Mission of Mary](#)

[Lincoln Hill - Mission of Mary](#)

[Green Roof Monitoring - Hanley Sustainability Institute](#)

[Soil Moisture Sensor System for Drought Monitoring and Paleoclimate Data Calibration](#)

[Green Learning Station - EPA, Cincinnati MSD](#)

Development

[LtSense and Datazar integration - Andrew Rettig, Sumit Khanna](#)

[Phidget and LtSense integration - Sumit Khanna](#)

[Json update - Sumit Khanna](#)

Pedagogy

Open innovation, living labs and hands-on experiences lowers the entry level of environmental sensor networking research and development.

Traditionally sensor networking has been researched with a top down approach due to the cost and expertise required. The standards that resulted from this approach were large sensor platform primarily developed for remote satellite sensing. Recently, with the advancement of supporting technologies these approaches are changing. The current trends within the Internet of Things (IoT) are from the bottom up, both in smaller size and a more manageable entry level. The standards are defacto causing a lag in interoperability. All business, government and academic entities are beginning to envision the possibilities of IoT but are at a loss of how to go about it. Our work strives to improve and create the academic pedagogy associated with the research and development of IoT. Similar to the R&D, no longer is the traditional top down researcher/student innovation sufficient, students must be enabled through hands-on experience supported with living lab exposure and team collaboration.

Confident and inquisitive students drive the innovation needed for IoT research and development. These students support IoT within the business, government and academic entities of tomorrow.

Classes

[Environmental Sensor Networking and the Internet of Things](#)

[Advanced Internet of Things](#)

[Lab Student Examples](#)