Defining Goals of the Project

* Build an autonomous system which has the ability to measure and observe, the interaction between Receiver and Transmitting antennas(radiation pattern, gain, etc).
* Design and Fabricate, an Omnidirectional Antenna to be used as a receiver, and tested.
* The Receiver shall be autonomously mobile around the space of preference
* The System should have the ability to, store the measurements
* The System should have the simplicity to be operated by Non-Technical individuals.
* The system should be easy to observe, and understood, by a Non-Technical Individuals
* The System will have the ability to visualize the radiation patterns of the Antenna.
* The System will cost under $800.
* The system will use low power equipment, to allow longer lifespan of the system.

**Refining goals into achievable actions**

* **Design and Fabricate a microstrip antenna to be tested, this antenna will be small in size, and weight around 1-2 ounce, Antenna have been designed and will be received before the New Year. And we will begin testing our system.**
* **The Measurement tools will use the USB, to connect to the Laptop for the data to be stored.**
* **A Drone, will be used as the receiver, which can autonomously move around a given parameter, while observing the effects of the positioning on the radiation pattern, and the accuracy of the measurement. The Drone is low cost, and have at least 10 minutes of fly time.**
* **The designed microstrip antenna will be used as the transmitter, given that the impedance, gain, intensity, etc., parameters of the antenna are known.**
* **By using this system, we will observe the radiation pattern of the antennas, without using expensive equipment, while allowing non-technical individuals to learn about radiation patterns, and electromagnetics.**
* **The Drone have been selected, and is being tested, the drone will use a pre-determined path.**
* **RF Measurement device is selected, and will be received before the New Year. And will be tested for its compatibility within the system.**
* **The wired connections between the RF Measurement equipment and the Microstrip antenna, will be done by a coaxial cable. Microstrip antenna will be designed and fabricate using coaxial feed.**
* **Inset-fed microstrip designed allowed us to reduce the need for impedance matching, while reducing the cost of the whole system**