Team meeting w Gary Woods

* Need to characterize how power usage and charge cycle
  + That way we can monitor the battery’s availability to do sensing/
* Can’t attach battery and not the solar cell (it discharges the battery quickly)
* Brady was able to charge, got data (graphs from Elvis board)
* EH chip will boost up using battery (up to 200mA from battery)- no way solar cell can provide what’s needed momentarily
* Rachel- lots of the pmics have unnecessary features
* GW: is it a good idea to have a PMIC?
* BT: could it damage anything if it reaches max 4.2-ish V
* Brady/Rachel’s graphs- spikes 1.4 to 2.2V
  + IC was changing perceived load by solar cell
  + Collected data for ~7 hours
  + GW: boost converted upstream of battery- you were probably aliasing since that’s at 100kHz.
  + BT: we can LPF the data to get a nicer plot
  + GW: first charge @ constant current, then at constant voltage until I=0
  + BT: we can put back the setup to see if it gets to 4.2V now
  + LPF analog, then sample faster than corner freq, then in digital LPF down to 1Hz
  + Maybe have regulator off battery for the more voltage sensitive requirements
* Solar cell
  + Real life light is better than a lamp- yay
  + ~factor of 10x comparing lamp to sunlight
  + Current at noon is about ⅔ of that quoted on the data sheet
  + Maybe need to angle to sun (if flat, then ~20\* angle) to get that datasheet value
* Comms
  + Paired w/ phone and sent data
  + Peak ~12mA, but that peak is just the ping. The data is constant current (Oscilocope data ~6ms). Baseline ~20mV/15ohm
  + Avg current draw while tx data ~4.5mA (but this is not the entire cycle)
  + Peripheral mode on Bluefruit- cannot initiate a connection. Makes figuring out the wakeup time complicated
  + Aggregator, peripheral node
    - Periph wakes up and cannot set up its connection but it does send out pings to have others know it exists
    - We can have agg pickup on pings
    - Cannot do chaining from from periph to periph, but can have hub + spoke model
    - Keep using the bluefruit unless we find something else to work with
  + Need to test in several modes
* Next steps: processor turn off and turn on power avail, then wakes up the msp430, bluetooth and tx
* Interrupt to wakeup when power good (or have power always good)