# 04/09/2019 - Capstone Meeting Notes

**Discussions:**

* When creating the mathematical, use the explosion technique to adequately describe what is going on in each plane initially

**Progress:**

* Parker
  + Started digging through ANSYS AIM, and I’ve found it to be useful for learning workflow via ANSYS
    - Its solid modeller is awkward, but it works well
    - It makes setting up initial meshes pretty easy
    - Organization is well done for it as well
  + Running another sim on the PSAS computer currently, Griffin and I chatted about the hollow cube model
  + Let’s talk about the math model and what I mean by it, since I know I’ve been pretty broad and unclear about it, and I want to have *reasonable* expectations for it
    - The math model is important so we know what is affecting what, and we know how ANSYS is solving our sims
      * Allows us to adjust parameters accordingly without taking shots in the dark
      * It’s important we have this so others that we are demonstrating to know that we have done the research and put in the time to know what we are talking about
    - The math model is *not* for numerical solving. I realize I have said things that contradict this, and I want to rescind those statements. It is unrealistic to receive numbers from hand calcs for this, and I understand that.
    - The papers in our drive have done the heavy lifting for the math models used in CubeSat science.
  + Spending $$$:
    - Griffin and I went to the ANSYS thing on Tuesday, and it introduced us to the full ANSYS suite and what we can achieve with it (hence me looking into ANSYS AIM)
    - I think it could be worth our time to invest in a *nice* video card for the PSAS computer with a load of vram in order to use ANSYS Live, which will allow us to toy with a simulation as its occuring/solving
  + Tomorrow at OreSat I plan on presenting/discussing:
    - How we want to spend our money
    - Our math model
    - Our conduction experiment from Monday
* Katherine
  + Done
    - Wrote team agreement
    - Got ribbon
  + Will do
    - Create exploded 3D math model that Parker wants
    - Go through GitHub and collect all information relevant to completeness of the model.
* Tom
  + yup
* Jeremy
  + Began trying to import model into Star-CCM+, several issues regarding incompleteness of model.
    - batteries,PCB locations
    - How were heat values calculated? 3W, 7.5W
      * Current drawn from batteries & internal resistance p=I^2\*R
      * Current through each processor and each resistance.
  + Finished reading up MIST research paper.
* Griffin
  + Ran sim of the model with no heat flux from sun, after 5 min model dropped 10 degrees kelvin
  + Conducted experiment of conduction through a PCB (results in Drive)
  + Planning on trying to develop sims using OreSat geometry
  + Might try to model PCB in ansys (similar to experiment)
* Tyler

**Tasks:**

* Update GitHub Tom
* Final mock Starccm model Jeremy / Parker

**Important dates:**

* Tuesday, April 23rd - Peer Evaluation
* Tuesday, April 30th - Progress Presentation
* Tuesday, May 28th - Progress Presentation
* Friday, May 24th - Poster design due
* Thursday, June 6th - Capstone Showcase
* Friday, June 7th - Final Report Due
* Tuesday, June 11th - Peer Evaluation