Problem definition review presentation on 09/10/2015:
Comments and questions from the audience

Question: Does your team need to purchase a high speed camera, and is that purchase considered in your budget?
Response:
The lab has more than enough cameras for us to use. We will probably upgrade from the Keyence in the lab to a Photron - they can shoot higher frame rates at higher resolutions. The programs are open source and can be found online as well. These cameras are also really expensive so the possibility of getting a new one is slim to none.

Question: Will your team be allowed to use the supplies and equipment in the TAμFL lab?
Response:
Oh yeah, absolutely! We have a million fittings, piping, tubing, spare materials, tools, pretty much anything we need. However, keep in mind that a lot of the fittings and materials are older or have been used before so might not be as great quality as a brand new package of Swagelok fittings, but they'll do.

Comment: The engineering requirements need to be completed so that they reflect maximum and minimum values that your team can test towards; you cannot test ideal values. If for some reason, you are unable to meet the customer requirements, then you should work with the customer to re-establish the customer requirements and reach some sort of agreement.

Question: How will you know if your system is providing a correct voltage reading?
Response:
We will compare the results from multiple trials and perform sanity checks.

Comment: Do not assume that your system will utilize a piezoelectric oscillator. Remember to look into alternatives.

Question: What do plan to do for benchmarking? What type of components are you going to compare to?
Response:
Studying papers from different subsystems. This experiment has never been done before, but there has been a lot of research into the various subsystems. We can benchmark those! We'll compare to other papers studying film thickness, oscillating water, controlling flow rate, etc.

Question: How do you plan to provide the AC power?
Response:
That is something we are going to be designing, but we will likely use a DAQ device.

Comment: Remember that this MSD class focuses on the design process. Be careful that this doesn't turn into a research project; we need a design by the end of this first semester.

Comment: Currently, we have no knowledge about oscillating meniscuses. Therefore, I predict that your list of project concerns will increase as you work on your design. You will likely encounter problems that you could not have anticipated. There are lots of limitations that you haven't accounted for yet because you don't know what they are.

Comment: Individually test each subsystem during the design phase in order to determine what works. Do this before integrating all the systems together. You can assign a portion of your budget towards "breadboarding." Don't hesitate to buy stuff ahead of time.

Question: It seems that half of your project is mechanical while the other half is electrical. How do you plan to handle the lack of electrical engineers on your team?
Response:
A lot of asking and pleading with experts in the EE department. We all had to take circuits so we at least know some of the EE professors. I [Alyssa] spent a lot of time with my EE teacher at his office hours so he still knows who I am. We will rely on the only resources we have!
Oh and Youtube and Google. Lots of internet things.

Comment: There is a list of subject matter experts online that are available for MSD teams to utilize.

Question: How long is the run time?
Response:
It really depends on what the particular person is studying. Right now we estimate 1-2 hours at max. Maybe even 3 hours if they're waiting to reach steady state. But really they should be shorter tests.

Question: What data will you be collecting?
Response:
Lots of videos footage in order to study oscillations, film thickness, perhaps heat flux, and water temperature. This is mostly dependent on the doctoral students who will be using the device.