

## Senior Project – BioPrinter

09/26/2012

### GOALS FROM LAST WEEK

- Presented Flow Diagram
  - Dr. Hall will review it and leave comments for next week.
- Electrical Safety considerations for humidifier
  - Circuits around water consideration
    - Consider: design of microenvironment
    - Design of microenvironment includes placing circuit isolated/away from water reservoir
    - Sensors for leakage

### ADVANCES FROM THIS WEEK

- Crosslinking
  - Needed to create the linking where fibers have not been created
  - Does PCL need to be crosslinked?
    - Consider collagen in HCL, washing with PBS – which needs to be crosslinked
  - PPF – considered but problematic
- Collagen II - \$500 for 10 mL
- Sterilize before seeding
  - Ethanol PBS washes
    - 5 min –twice – collagen coating
    - Autoclave
  - Ethylene oxide + residue testing - not an option
- Syringe pump swivel
  - Consider designing one
  - Ones from market: >\$700
- Isolation of cells
  - Aseptic vs sterile environment
- Produce a preliminary layer
  - Yeast, mold, or bacteria
- <10 single layer scaffold
- Have a list for materials that are borrowed from Dr. Hall
  - Figure out for budget

- Kendra will be responsible of sterilization if PCL is enough and cross linking is not necessary.

#### GOALS FOR NEXT WEEK

- Tangible budget /breakdown
- Testing for PCL/sterilization
- Start update of Gant Chart
- Ordering of PCL
  - o Sigma
  - o Forward PDF of MSD to hall
- Ordering Arduino Mega
- Wed October 3<sup>rd</sup> at 4:30 – 5:30 PM meeting with Hall (safety)