

Cellular Bioengineering Project 3 – Due 4/10/2014

As we have been discussing in class, and will continue to discuss, the cellular environment in an important mediator of cellular function. In this project, you will investigate the role of matrix type, stiffness and/or binding site density on behavior of cells in 2D or 3D. Here you are responsible for designing and conducting an experiment and interpreting the results. Given the time and material constraints of the course, your experiment will likely be rather small in scope and may absolutely be a validation of previously published results. Your analysis should be quantitative if possible. You will be provided with cells, reagents, and basic protocols – your group of 2 (or 3) must work with me proactively to determine your needs.

My learning objectives for you are to strengthen:

- Your ability to design experiments to test your ideas
- Your ability to write protocols
- Your ability to perform literature research

Timeline

- Choose a concrete approach and have an outline of your experimental plan by 3/13/2014
- Be prepared to discuss experimental protocols in more detail in class 3/24/2014; they must be finalized with me shortly after and before you begin experiments
- Work on experiments in class 3/24/2014 and 3/37/2014
- Drafts due by 4/3/2014
- Final project due 4/10/2014*

Your final deliverable is a paper no more than 4 pages which includes the following:

- Brief abstract
 - Should have a few sentences reflecting each of the following sections
- Background and significance
 - Motivate the work by telling the reader why they care and presents the work done previously done in the area
- Materials and methods / Experimental Design
 - Succinctly lays out methods used
 - Don't forget to include appropriate controls
 - Sometimes experimental grids or schematics are useful!
- Results and Discussion
 - Combine these 2 (some journals let you)
 - Could include future work
- References
 - reference all of information in your report that is not your own.
- Formatting should be IEEE style

*A 20%/day grade decrease will be applied late papers. Requests for extensions will be generously considered if they are made in a timely manner.