

## **Osteochondral Transplant System—Week 11, Progress Report**

**Client:** Dr. Brian Walczak

**Advisor:** Dr. Krishanu Saha

<b>Team:</b>	Rodrigo Umanzor (Leader)	umanzor@wisc.edu
	Nicholas Zacharias (BWIG & BSAC)	nazacharias@wisc.edu
	Eduardo Enriquez (Communicator)	eenriquez2@wisc.edu
	Bilin Loi (BPAG)	bloi@wisc.edu

**Date:** April 10, 2017

### **Problem Statement**

Osteochondral allografting is a common procedure performed on patients that require replacement of diseased bone. Current methods of implantation require the application of mechanical forces that have a detrimental effect on the live chondrocytes present on the implant. Maximizing the amount of viable tissue during and after the surgery is a crucial factor for the success of the procedure. Hence, the client requests a delivery system that will reduce the amount of mechanical forces required to securely place the implant into the donor site.

### **Previous Week's Goals**

- Research imaging protocols that use a DAPI stain to assess cell viability ✓
- Agree on a protocol that will be used for final testing and imaging ✓
- Seek out an alternative source on campus that can provide the team with tissue samples that are fresher than those previously obtained from butcher shops ✓

### **Summary of Team Accomplishments**

- Established an alternative source via Dr. Hacker for obtaining fresher bone samples, however we can only obtain porcine femurs at the moment
- The previously used protocol has been edited to take into account the use of a DAPI stain to assess chondrocyte viability in the case that we can obtain DAPI stains before our next round of testing

### **This Week's Goals (Team and Individual)**

- Test and image using fresh porcine femur samples on 04/12 and 04/14
- Draft an executive summary for the BME Design Awards

### **Project Difficulties**

- Our new form of obtaining fresh samples requires that we personally extract the femoral condyles from a recently deceased Landrace X pig. Given that no team member has experience butchering a pig, this may prove to be a difficult process.
- We were unable to obtain a DAPI stain to use for the tentative testing dates, so we will be using a Calcein AM stain instead.

### **Expenses**

No new expenses to report.

## Individual Activity Log

Member	Task	Time (hr)	Weekly Total (hr)	Semester Total (hr)
Rodrigo (Leader)	Weekly progress report	0.5	3	57.5
	Adviser meeting	0.5		
	Team meeting	1		
	Individual research & team work	1		
Eduardo (Communicator)	Team meeting	1	4	52
	Adviser meeting	0.5		
	Individual research & team work	3		
Nick (BSAC & BWIG)	Adviser meeting	0.5	3.5	30.5
	Team Meeting	1		
	Individual research & work	2		
Bilin (BPAG)	Adviser Meeting	0.5	3.5	35.5
	Team Meeting	1		
	Individual research & work	2		

