

## Progress Report 9

**Date:** 27 October to 3 November, 2005

**Project:** Bioactive Interference Screw

**Client:** William Murphy, Ph. D

**Members:** Katherine Davis (BSAC)  
Aaron Huser (BWIG)  
Cole Kreofsky (BSAC)  
Dana Nadler (Communicator)  
Joe Poblocki (Team Leader)

### Problem Statement:

Currently, during an ACL reconstructive surgery, titanium or partially degradable interference screws are used to secure the graft within the femur and tibia. These screws or parts of these screws will remain in the patient's knee for the rest of his or her life and can cause problems. The current screws are also not conducive for tissue re-growth. It is, therefore, our client's desire to develop a biphasic interference screw for ACL reconstruction that will promote and foster the growth of surrounding bone tissue, as well as limit any potential problems a patient may incur due to these screws in his or her body.

### Summary of Accomplishments:

We talked to the machine shop on campus regarding the capabilities that they possessed in rapid prototyping a screw mold. They said they could probably get one relatively quickly for less than \$100. We met with our client to discuss the progress of our project. A suggestion was made to test feasibility of displacing plastic on hardware bolt. Also, we are continually researching PLGA/PLLA properties with further contacts given to us by our client. Finally, SolidWorks drawings have been finalized for the RP.

### Hours:

#### Group:

Researched PLGA/PLLA properties	<b>1.0 hour</b>
Talked to ME shop re: RP possibilities	<b>0.5 hours</b>
Met client to discuss progress of design	<b>1.0 hour</b>
Finalized drawings in SolidWorks	<b>1.0 hours</b>
Researched mineralizing surface of screw if current design is not possible	<b>1.0 hour</b>
<b>TOTAL:</b>	<b>28.5 hours</b>

### Goals for 11/3/05-11/10/05:

- Place RP order in machine shop
- Test feasibility of mold idea with hardware materials
- Consider incorporating details into mold design/process (i.e. transverse holes)
- Begin designing/fabricating plug to create shaft and alginate pockets

