

Idaho Incubation Fund Program

Progress Report Form

Proposal No. IF13-007
Name: Trevor Lujan
Name of Institution: Boise State University
Project Title: A Computational Method to Advance the Clinical Care of Bone Fractures

Information to be reported in your progress report is as follows:

1. Provide a summary of project goals/milestones for the period just completed, accomplishments for the period just completed, and plans and goals for the coming quarter: Substantial progress was made on project milestones 1 and 2 during the last period. The first milestone was to automate callus measurement in OrthoRead software, and this work is now 70% completed. A mechanical engineering undergraduate, Evan Rust, developed, implemented and tested a new method to maintain accuracy independent of radiograph resolution. Evan also identified a new method that will greatly reduce user interaction when segmenting callus. This method is now being implemented by Stephen Porter, a computer engineering undergraduate that joined the project in April. Milestone 2 is to develop a graphic user interface (GUI), and Stephen has made considerable progress in this area. Stephen has ported the matlab software to a Java interface that permits professional GUI development. The Java code uses a dynamic thresholding algorithm that has improved automation (adaptive), run time (10x faster) and accuracy (10% more accurate). A mock-up GUI has been developed and is being actively used and evaluated. A graduate student, Christina Sundgren, has assisted in the supervision and implementation of these tasks. In the next month, Milestone 1 will be completed and the GUI will be refined prior to a pre-release of OrthoRead to third party users.

2. Provide a summary of budget expenditures for the period just completed: The expenditures for the period just completed are estimated at \$15,000. It is projected that the full \$27,000 budget will be spent by the project completion date (June 30, 2013).

3. List patents, copyrights, plant variety protection certificates received or pending:
None at this time (see item 6)

4. List invention disclosures, patent, copyright and PVP applications filed, technology licenses/options signed, start-up businesses created, and industry involvement: None at this time (see item 6)

5. Include funding burn rate: \$2,500.00

6. Any other pertinent information: The director of the Institute of Biomechanics in Murnau, Germany, has invited Dr. Lujan to write a section about OrthoRead software for a 2014 supplemental issue of Journal of Orthopaedic Trauma. In addition, research related to OrthoRead software has been invited as a podium presentation for the 2013 Orthopaedic Trauma Association Meeting (Dr. Lujan is a co-author on this paper).