

Title of Program: Orthopaedic Engineering Research

Dept/Center/Lab: Orthopaedic Engineering Research Laboratory
Department of Orthopaedic Surgery

Principle Mentors: Richard D. Peindl, PhD
Director, Orthopaedic Engineering Research
Department of Orthopaedic Surgery

Nahir A. Habet, MSc
Research Engineer II
Orthopaedic Engineering Research

Other Faculty: Rachel Seymour, PhD
Senior Research Scientist
Orthopaedic Clinical Research

Summary Description:

The Orthopaedic Engineering Research Laboratory is currently engaged in a wide-ranging, externally-funded technology development program involved in measuring human kinematic activities for medical assessments and outcomes analyses purposes. The program, which is currently entering pre-clinical trials, uses commercially-available inertial sensors as the base technology. Systems integration projects of current interest, however, involve such things as hardware and software assessments, modifications of sensor packages and software development for kinematic data analysis. The student will also be able to participate in patient kinematic testing in our clinics. The project is a real-world example of the ever-increasing use of sensor technologies for providing important medical assessment and outcomes data pre- and post-treatment.

Expectations and Role of Student:

The student will be an active member of the engineering research team and will provide direct support of the ongoing activities. While being exposed to the entire research program, he/she will be primarily working on a project related to the applications listed above. The ability to program in various types of C++, C# or MATLAB is required. The student will work closely with the research team and will be required to prepare and present an abstract of their work and final presentation summarizing the project.