Biomechanics Open Problem Development Project - GAA (Graduate Student) Job Opening

**Project**
A collaborative project is being completed among the instructors of several biomechanics related courses in Mechanical and Biomedical Engineering. There is generally a lack of resources and textbooks in the area of biomechanics that have practice problems for students, especially at the level required for undergraduate engineering courses. The goal is to create a database of biomechanics questions that would be useful for students to practice and study for exams. Our main goal is to have these question sets be open source and free for students, so we will input these into the WeBWorK open online homework system. WeBWorK is an open online homework system used globally in mathematics and used extensively at UBC in math and engineering. It has a shared open problem bank called the Open Problem Library. This project will expand the example biomechanics problems available in WeBWorK and has the added advantage of allowing for immediate feedback for students wanting to practice these topics. The problem sets will be developed for a range of complexity levels and will initially focus on content related to BMEG 230, BMEG 330, MECH 436, and MECH 435.

This work is being funded by a grant through the UBC OER Fund.

**Responsibilities**
The graduate student (GAA) will be developing new biomechanics WeBWorK problems. The GAA will work with a co-op student and later an undergraduate academic assistant (UAA), with each developing problems and checking each other’s work. The co-op student/UAA will illustrate the problems, and code/troubleshoot the WeBWorK problems. The GAA and co-op students will be creating solutions.

The graduate student should be capable of working remotely (such as access to internet and a suitable work environment that would allow the student to complete their tasks) until UBC’s remote work guidelines are lifted.

**Requirements**
- Excellent knowledge of the fundamentals of engineering biomechanics, including the mechanical fundamentals of statics, rigid body dynamics and solid mechanics
- Ability to create clear and systematic solutions for biomechanics problems
- Ability to work both independently and collaboratively
- Ability to help guide undergraduate students working on this project
- Excellent communication and interpersonal skills
- Responsible, professional, reliable
- Ability to track many small tasks, and make steady progress
- Interest in/commitment to open educational practices is an asset
- Interest in teaching and learning technologies is an asset
- Experience in WeBWork is an asset
- Experience in git/GitHub, and/or LaTeX is an asset

**Supervision**
The GAA will be supervised by Dr. Robyn Newell and will work closely with the co-op student/UAA.

**Term of work**
The start date is May 15th (or soon after, this is negotiable). This position will extend over two terms (May 2020 to Dec 2020) and is part-time (approx. 208 hours). It’s expected that the hours will be higher during summer 2020 (~10-12 hours/week vs. ~4-6 hrs/wk during school year – substantial flexibility is possible), and that the mix of activities will change over the project.

**How to Apply**
Candidates are asked to send a CV and cover letter to robyn.newell@ubc.ca.