

Dear Students,

Do you know someone suffering from back pain or spinal deformities? Now is your opportunity to research one of the issues associated with spinal degeneration. The Musculoskeletal Tissue Engineering and Advanced Mechanics Lab (M-TEAM) is looking for a student researcher to improve our understanding of tear formation in the intervertebral disc. Students will be asked to develop a finite element model of the intervertebral disc at the moment of tear formation. This position allows students to gain hands-on experience in biomechanics, finite element modeling, and experimental data analysis. The position is available for students to begin during the semester with the opportunity to continue into the summer.

**Preferred qualifications** include:

Fundamental understanding of:

- Calculus
- Linear algebra
- Mechanics of materials
- Biosolid mechanics
- Finite element methods

Proficiency in:

- FEA software (ABAQUS, FEBio or equivalent)

Fundamental courses:

- Intro to mechanics I-II
- Biosolid mechanics
- Applied finite element analysis
- Computational solid mechanics

Applicants, please send a single PDF with a cover letter describing your interest and qualifications for this position to Professor Jill Middendorf of the Department of Mechanical Engineering at [jmidden1@jh.edu](mailto:jmidden1@jh.edu).

Students can earn academic credit for this work through either EN.530.501 Undergraduate Research or EN.530.823 Master's Graduate Research, which would be graded by Prof. Middendorf. 40 hours of work = one academic credit. Note: minimum enrollment in EN.530.823 is three credits per semester.

Thanks,

Jill