**Dr. Hayden Atkinson - University of Prince Edward Island**

*“Relationship between joint tissues and loading in knee osteoarthritis”*

Knee osteoarthritis is a multifactorial disease that can involve all tissues of the joint. Understanding the complex relationship between joint loading and structural changes is critical to developing interventions to target and minimize these structural changes. Join Dr. Atkinson to learn how cartilage, synovium, and bone shape can be viable treatment targets for biomechanical interventions in knee osteoarthritis.

**Dr. Michele Battie**

*“Quantitative MRI Protocols for Assessing Intervertebral Disc Degeneration”*

Back pain and related disability are a major burden on affected individuals, their families and societies, worldwide. Intervertebral disc degeneration is suspected as an underlying culprit. Yet widely available measures of disc degeneration are grossly inadequate, hampering related research. Our group aims to develop, assess, and standardize advanced quantitative MRI sequences with an eye toward developing tools to simplify and enable widespread use of the preferred measure(s) to advance knowledge of the causes, progression and clinical consequences of disc degeneration, as well as to evaluate the effects of disc therapeutics and provide reference values for histological, biochemical and biomechanical studies of disc degeneration.

**Dr. Tom Appleton**

*“Biological mechanisms of biomechanically-induced pain in knee OA”*

Pain during some types of physical activity is the cardinal symptom of knee osteoarthritis (OA). Although the biological mechanisms activated by painful physical activity are likely to be critical treatment targets, very little is known. Using state of the art technology to study the effects of gradual exercise on how people walk, combined with cutting-edge technology to measure changes in immune and other biological targets, this new collaboration will integrate gait biomechanics and biology of inflammation research to discover why OA makes our knees hurt when we “walk this way”.

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This showcase is open to the University Community. Please feel free to share this invitation with colleagues or members of your lab/department. Those interested in suggesting new workshop areas have an opportunity to so online at: [http://boneandjoint.uwo.ca/how_to](http://boneandjoint.uwo.ca/how_to)