

## Dr. F.C. MacIntosh Lectureship Seminar

### GUEST SPEAKER

#### Dr. Svetlana Komarova

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 **FRIDAY, OCTOBER 27, 2023**  
**11:00AM**

**MCINTYRE MEDICAL  
SCIENCES BUILDING  
ROOM 1034**

**OR JOIN ZOOM**  
**[HTTPS://MCGILL.ZOOM.US/J/827882658](https://mcgill.zoom.us/j/827882658)**  
**70 PASSCODE: 491928**

***“The role of extracellular ATP and its derivatives in responses of bone cells to physical forces “***

Physical forces are critical for the development, maintenance, and adaptation of various tissues in the body including bone. Bone adapts to mechanical loads through actions of bone cells: osteoclasts that specialize in bone resorption; osteoblasts that produce bone; and osteocytes embedded in bone matrix that sense mechanical forces and coordinate bone adaptation. ATP is a ubiquitous intracellular molecule critical for cellular bioenergetics, which is also one of the first signals released from bone cells that experience mechanical stimulation. Extracellular ATP is degraded by ecto-ATPases to form ADP and eventually adenosine. I will discuss our studies investigating how spatiotemporal signals provided by extracellular ATP and ADP may encode the information regarding severity, scale and proximity of the mechanical stimulus, allowing for a well-choreographed tissue responses to physical forces.