

UBC/UMC

the undergraduate mathematics colloquium

bennett • homsy • peirce • johnson-leung • hamieh • duncan

Anthony Peirce: *Mathematics at work in geomechanics:
Why miners and oilmen should learn PDEs*

I will introduce some of the concepts used to develop models for fracture processes around mining excavations. I will demonstrate on a simplified model problem how analysis of the governing PDE enables the prediction of fractures around deep gold mines. While miners are intent on avoiding fractures, petroleum engineers have found it profitable to create fractures by injecting high-pressure fluids into reservoirs to enhance production. I will demonstrate how to formulate mathematical models of these hydraulically driven fractures and demonstrate some of the subtleties involved in their solution.

UBC/UMC is on **wednesday**, march 3
3:00 to 4:00 in **MATH 105**
drinks and snacks will be provided

for more information check out www.math.ubc.ca/~fsl, and follow the link at the bottom