

1116-92-2931 **Leah Edelstein-Keshet*** (keshet@math.ubc.ca), Dept of Mathematics, UBC, Vancouver, BC
V6T 1Z2, Canada. *Using mathematics and computation to address problems in cell biology.*

In this talk, I will highlight research carried out in my group over the past decade, focusing on problems motivated by cell biology. First, I will describe how we created models for cell polarization (determining front and back of a cell) and how we used those models to get insight into crawling motion of cells. I will describe new mathematical methods that we found useful in understanding the systems of PDEs that depict concentrations of regulators inside a cell. I will also discuss how the models were validated against experiments. In the second part of my talk, I will mention a few examples of how simplified models can be used to motivate undergraduate students in a Life-Science calculus class. (Received September 23, 2015)