

Biology Seminar

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Dynamic Regulation of cell adhesion and motility governs the formation of the embryonic axis in vertebrate embryos



How do vertebrate embryos develop to form the adult organism? Coordinated cell movements during gastrulation are key to laying down the early embryonic body plan. The cells migrate by two distinct mechanisms that I will describe. They can migrate on extracellular matrix *or* on their neighboring cells. In zebrafish embryos, endoderm cells migrate on the yolk extracellular matrix to form the organs of the gut. In contrast, we found that presomitic mesoderm cells, which form the muscles around the backbone, have little extracellular matrix and migrate instead on each other, a process of intercalating between their neighbors. The result is that they lengthen the embryo. Several proteins regulate this cell migration. We have studied how the phosphorylation state of the p120 catenin protein has a dual role regulating both adhesion and motility of the presomitic mesoderm cells to govern their migrations. The major research was done and published by many remarkable undergraduate students.

Seminar Speaker Host: Jeff Rasmussen

