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Cortical thickening and negative curvature may position the Par protein boundary in the early C. elegans embryo

Many cell types have the capacity to polarize by segregating specific proteins to opposite ends of the cell. In embryos of the nematode worm *C. elegans*, the proteins of interest are the Par proteins. The Par proteins bind to the actin cortex, a thin structure just below the cell membrane consisting of polymers of the protein actin which are crosslinked by the contractile protein myosin. Shortly after fertilization, the single cell embryos stably polarize, with distinct Par proteins occupying opposite ends of the cell, and the boundary between the Par domains is placed near the centre of the embryo. In this talk, I will discuss possible mechanisms for spatial positioning of the Par protein boundary and demonstrate how the boundary position may depend on both cortical thickening and negative curvature during polarization. This work is joint with David Iron (Dalhousie University)