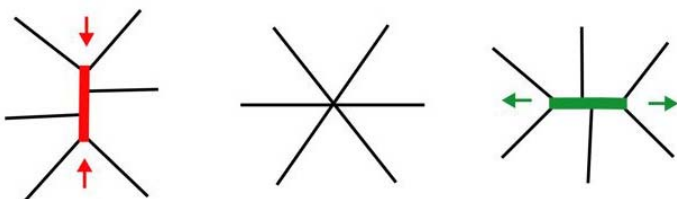
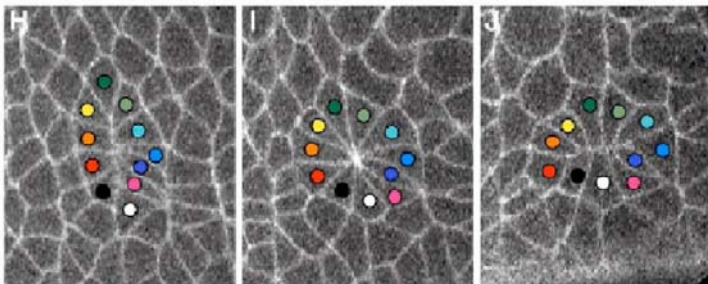


Prof. Dick Zallen
Virginia Tech Physics

***Morphogenesis for Physicists:
A Role for Topology***

Convergent extension is the name given to the initial elongation of embryo tissue which first establishes the body axis. This morphogenetic process is "conserved", meaning that it happens in flies, it happens in frogs, and it happened in you (otherwise you wouldn't be reading this). In *Drosophila*, convergent extension occurs primarily by cell rearrangement, without cell-shape elongation and prior to the onset of cell division. Recent work (see References) in the laboratory of J. A. Zallen at Sloan-Kettering, using live-imaging confocal microscopy, protein labelling, and genetics, has yielded new insight into this complex and subtle process. After a necessarily simple introduction to morphogenesis, the possible usefulness of topological measures (such as used, for example, in the physics of foams) will be discussed.

References: J.A.Z. and E. Wieschaus, *Dev. Cell* 6, 343 (2004); J.A.Z. and R.Z., *J. Phys. Condens. Matter* 16, S5073 (2004); J. T. Blankenship et al., *Dev. Cell* 11, 459 (2006); J.A.Z., *Cell* 159, 1051 (2007).



**Mon., Nov. 12
4:00 P.M.
304 Robeson**