



## Imposing Order in the Developing Eye of *Drosophila*



Specification of organ/tissue identity is a fundamental requirement of animal development as it is imperative that each tissue/organ be made in the right numbers, placed in the right location and constructed to function properly. A growing body of evidence, including several discoveries from my research group, strongly suggests that determination of organ and tissue identity has two requirements: 1) specifying the desired tissue and 2) repressing alternate fates. Our data suggests that primary gene regulatory networks that are tasked with promoting a retinal fate are also required to repress non-ocular programs in the eye field. Pattern formation is central to the development of metazoans since cells within a tissue/organ must be made in the correct numbers, specified accurately and positioned properly. In order to generate the requisite number of cells, the rate of patterning must be synchronized with the rate of cell proliferation. If the rate of pattern formation outpaces that of proliferation within the retina, then the eye will be very small and vision will be severely compromised. The HLH transcription factor *Extramacrochaetae* (*Emc*) ensures that proliferation and patterning rates are synchronized. Our data indicates that *Emc* achieves this by refining the activity of the Hedgehog signaling gradient.

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Host: Dr. Helen McNeill

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**Time:** 10AM

**Place:** 1 King's College Circle, Medical Sciences Building, Room 4171