Multimodal Imaging of Embryogenesis
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Our research aims to dynamically visualize and characterize embryonic development and intracellular virus movements at sub-cellular resolution. We have used modified viruses to generate transgenic avians as an experimental system in order to study brain and heart formation. Our fluorescent toolbox relies on XFPs to label cells in order to dynamically follow their movement using multispectral imaging. The gene expression and cell migration data collected using multispectral imaging is subsequently integrated within MRI collected datasets in order to understand the complex informational interactions that are occurring during development within the spatial and temporal context of the maturing embryo.