

Molecular Imaging and Bioactivateable Contrast Agents

Spatial organization of interacting components is crucial to the understanding of mechanism.

- Fate mapping/ Lineage analysis
- Elucidating neuronal connectivity
- Anatomical structure

Molecular Imaging facilitates the study of gene expression and protein function in the context of whole cells *and* living organisms non-invasively.

Control complex regulatory mechanisms:

- *Developmental pathways vs. adult homeostasis*
- Transcription
- Alternate splicing of mRNA
- Post-translational modifications of proteins
- Environmental and external cues