Hepatocellular Carcinoma: EphA2-EGFR signal convergence on AKT regulates metastatic behavior

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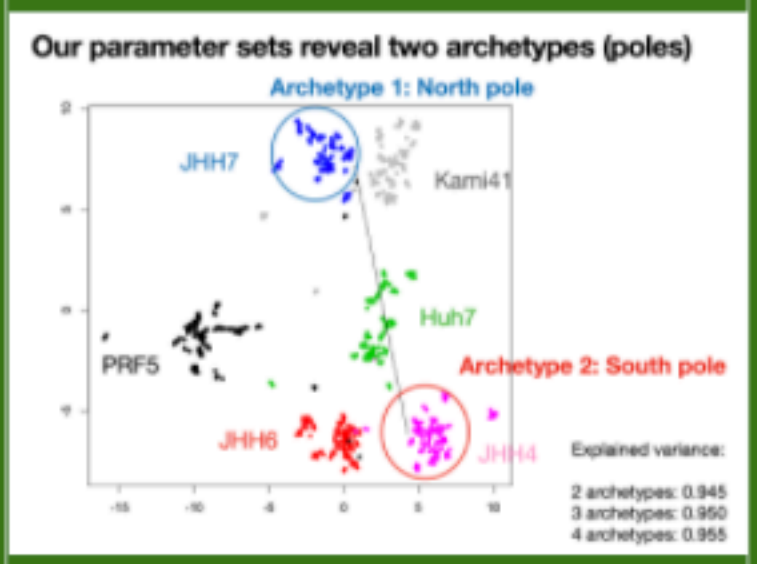
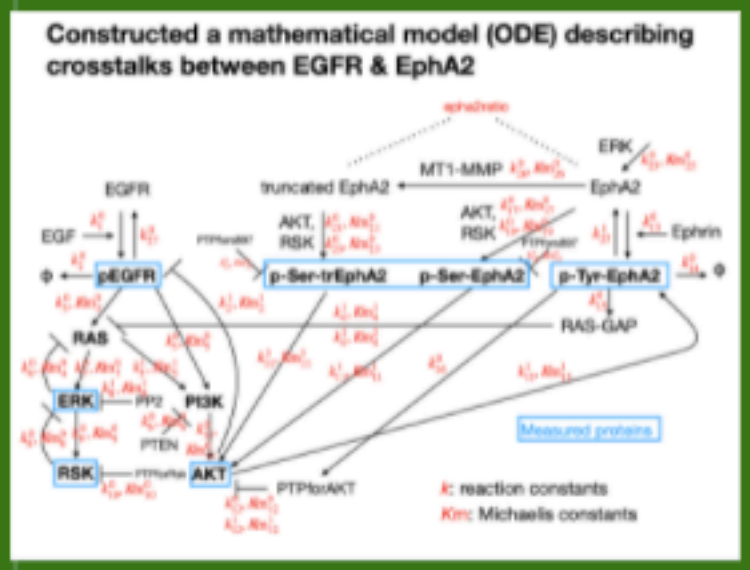
HCC cell lines belong to two distinct archetypes

Archetype analysis reveals 2 subgroups among HCC cell lines – EpCAM+ and CD90+ (with a neutral, transitional group).



Archetype 2 motility depends on AKT activation



We constructed a mathematical model of EphA2-EGFR signal convergence based on time series RPPA data, using PySB modeling. Model highlights AKT dependence for cell mobility in archetype 2.

AKT inhibition decreases cell motility in archetype 2 and not in archetype 1

Treatment of HCC cell lines with MK2206 found 18% decrease in cell speeds for archetype 2 and no significant change for archetype 1.