Multiparameter Model for Innovation Diffusion with Varying Influenceability

- **What we know**

  Large cascades of influence are driven not by opinion leaders but by a critical mass of easily influenced individuals (Watts & Dodds, *JCR* **34,** 441–458 (2007))

- **What we want to know**

  How does the influenceability of brokers effect the spreading withing and between communities?

- **Model**
  - Based on McMullen et al, *SIADS* **12,** 515–535 (2013)

$$u_i(t) = I\left(\alpha_i p_i + \beta_i s_i(t) + \gamma_i m(t)\right)$$

Utility | Personal benefit | Cluster benefit | Network benefit

$I \in [0.5, 2]$ (Influenceability)

$$s_i(t) = \frac{1}{k_i}\sum_j^N A_{ij} x_j(t)$$

$$m(t) = \frac{1}{M}\sum_i^M x_i(t)$$