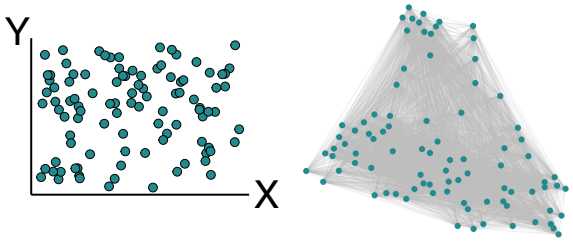
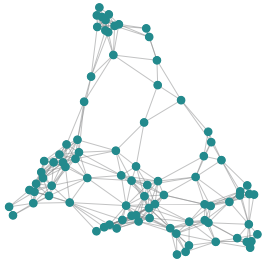
A. Simulating spatial networks

1. Simulate spatial coordinates and calculate pairwise distance



2. Prune the lowest weight edges until connectance (C) is 10%.

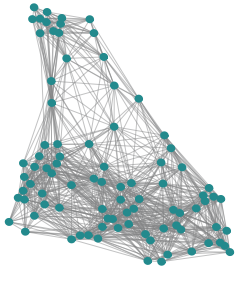
$$C = \frac{\#\text{ of edges}}{(\#\text{ of nodes})^2}$$

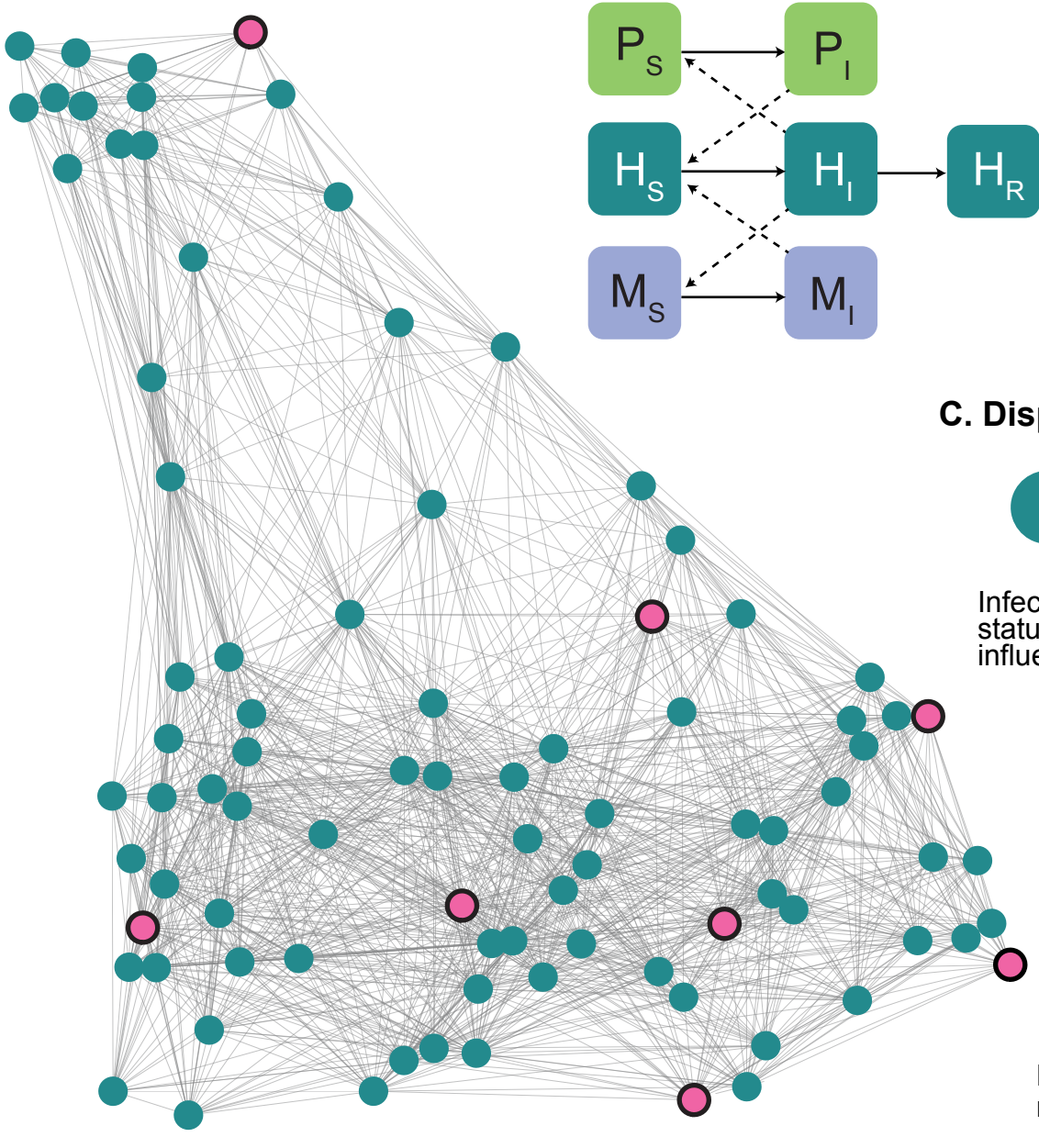


3. Recalculate pairwise distance; sequentailly add edges for desired connectance.

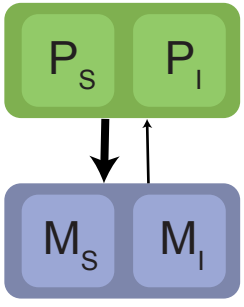
C = 10%

C = 15%



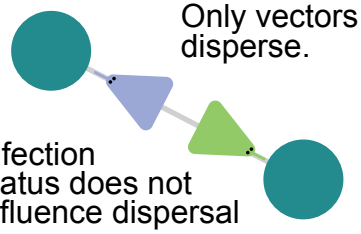


B. Disease dynamics within a patch



Strong asymmetric competition

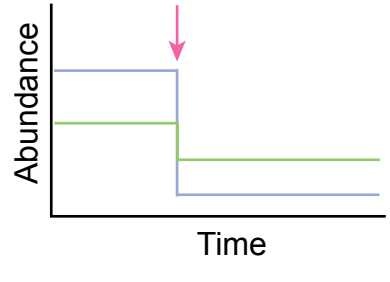
C. Dispersal between patch



Only vectors disperse.

Infection status does not influence dispersal

D. Disturbance in selected patches



Disturbance inflicts higher mortality on primary vectors