

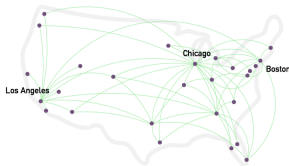
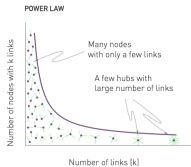
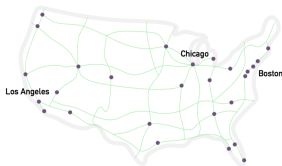
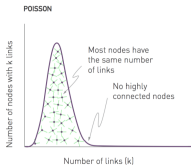
real networks models

introduction to *network analysis* (*ina*)

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spring 2016/17

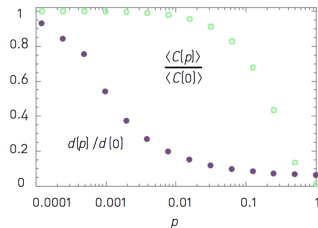
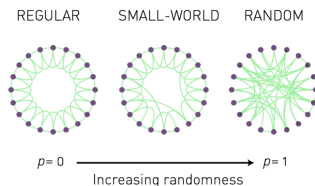
networks *scale-free*

- *power-law* degree distribution $p_k \sim k^{-\gamma}$ [Pri65]
- *preferential attachment scale-free* model [BA99]



networks *small-world*

- *coexistence* of $\langle C \rangle \gg 0$ and $\langle d \rangle \simeq \frac{\ln n}{\ln \langle k \rangle}$
- *link rewiring small-world* model [WS98]



networks *references*



A. L. Barabási and R. Albert.
Emergence of scaling in random networks.
Science, 286(5439):509–512, 1999.



A. L. Barabási.
Network Science.
Cambridge University Press, 2016.



D. J. de Solla Price.
Networks of scientific papers.
Science, 149:510–515, 1965.



D. J. Watts and S. H. Strogatz.
Collective dynamics of 'small-world' networks.
Nature, 393(6684):440–442, 1998.