

# MEASURES OF INTERDISCIPLINARITY

---

Kathy Schmidtke Felts, PhD

Assistant Director, MU Institutional Research

MidAIR 2011, Kansas City, Missouri

# What is interdisciplinarity?

- Faculty
  - Joint appointments
  - Research efforts
- Disciplines
  - Emerges from 2 or more other disciplines
    - Psychology + Neurology + Molecular & cell biology = Neuroscience
- Students
  - Interdisciplinary degree programs

# What is interdisciplinarity?

- “Interdisciplinary research is a mode of research by teams or individuals that integrates information, data, techniques, tools, perspectives, concepts, and/or theories from two or more disciplines or bodies of specialized knowledge to advance fundamental understanding or to solve problems whose solutions are beyond the scope of a single discipline or area of research practice.”
  - National Academies

# Benefits of interdisciplinarity

- Innovation
- Pushes fields forward and accelerates scientific discovery (NSF)
- We are not students of some subject matter, but students of problems. And problems may cut right across the borders of any subject matter or discipline.
  - Karl Popper

# Call to measure interdisciplinarity

- Mizzou Advantages
  - Food for the Future
  - Media of the Future
  - One Health, One Medicine: The Convergence of Human and Animal Health
  - Sustainable Energy
  - Managing Innovation: Navigating Disruptive and Transformational Technologies
  - Educational Programs
- National Research Council Interdisciplinarity - % Faculty Interdisciplinarity
- National Science Foundation

# Issues of measuring interdisciplinarity

- Collection of data
  - Joint appointments
  - Publications/citations
  - Grants – PI and CoPI
  - Dissertation committees
- Reporting tool
  - Matrices
  - Networks

# Matrix

# Networks

- Königsberg Bridge Problem

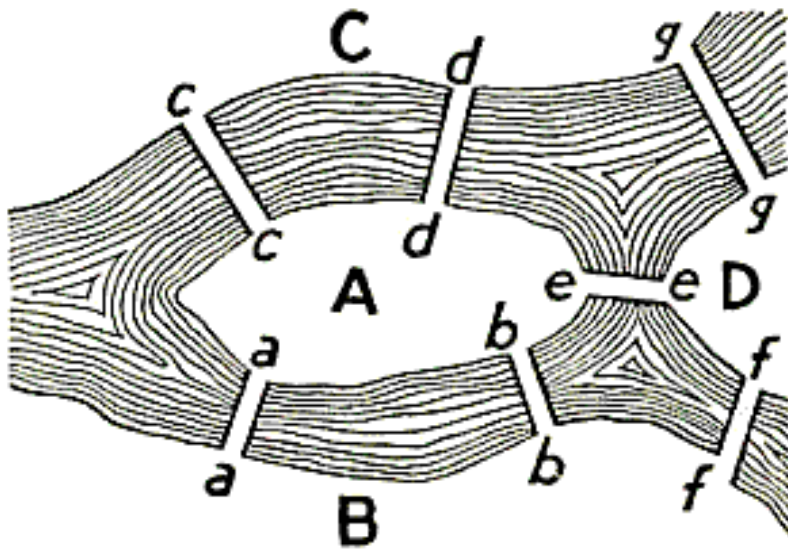
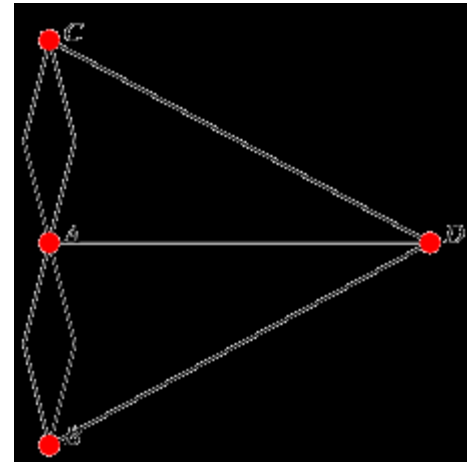
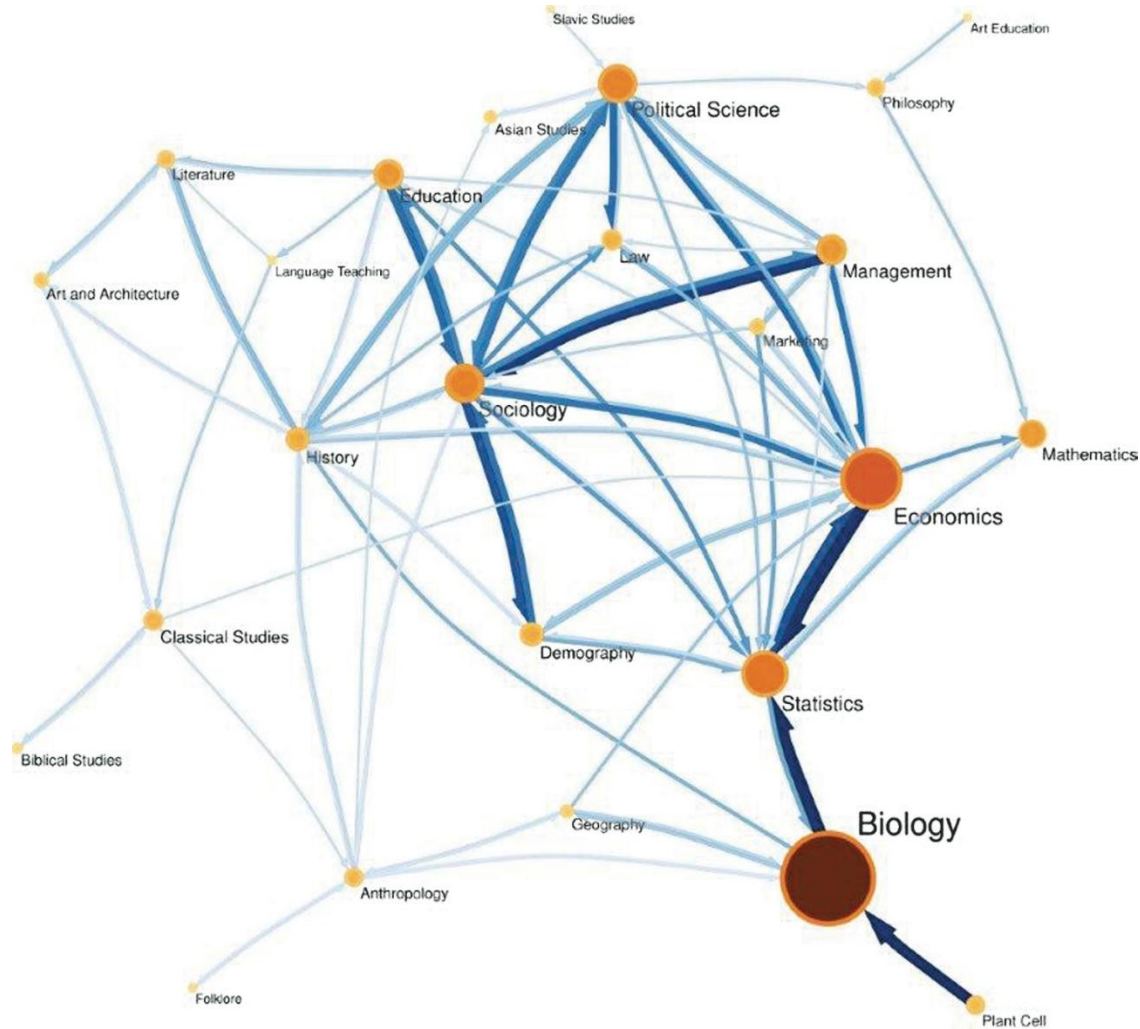


FIGURE 98. *Geographic Map:  
The Königsberg Bridges.*





# Network Analysis



# Questions/issues

- Data
- Is it possible to quantify matrices?
- How to describe visual networks?
- Other?

# For more information/ideas

- Email: [feltsk@missouri.edu](mailto:feltsk@missouri.edu)
- Presentation will be made available at:
  - <http://ir.missouri.edu/reports-presentations.html>