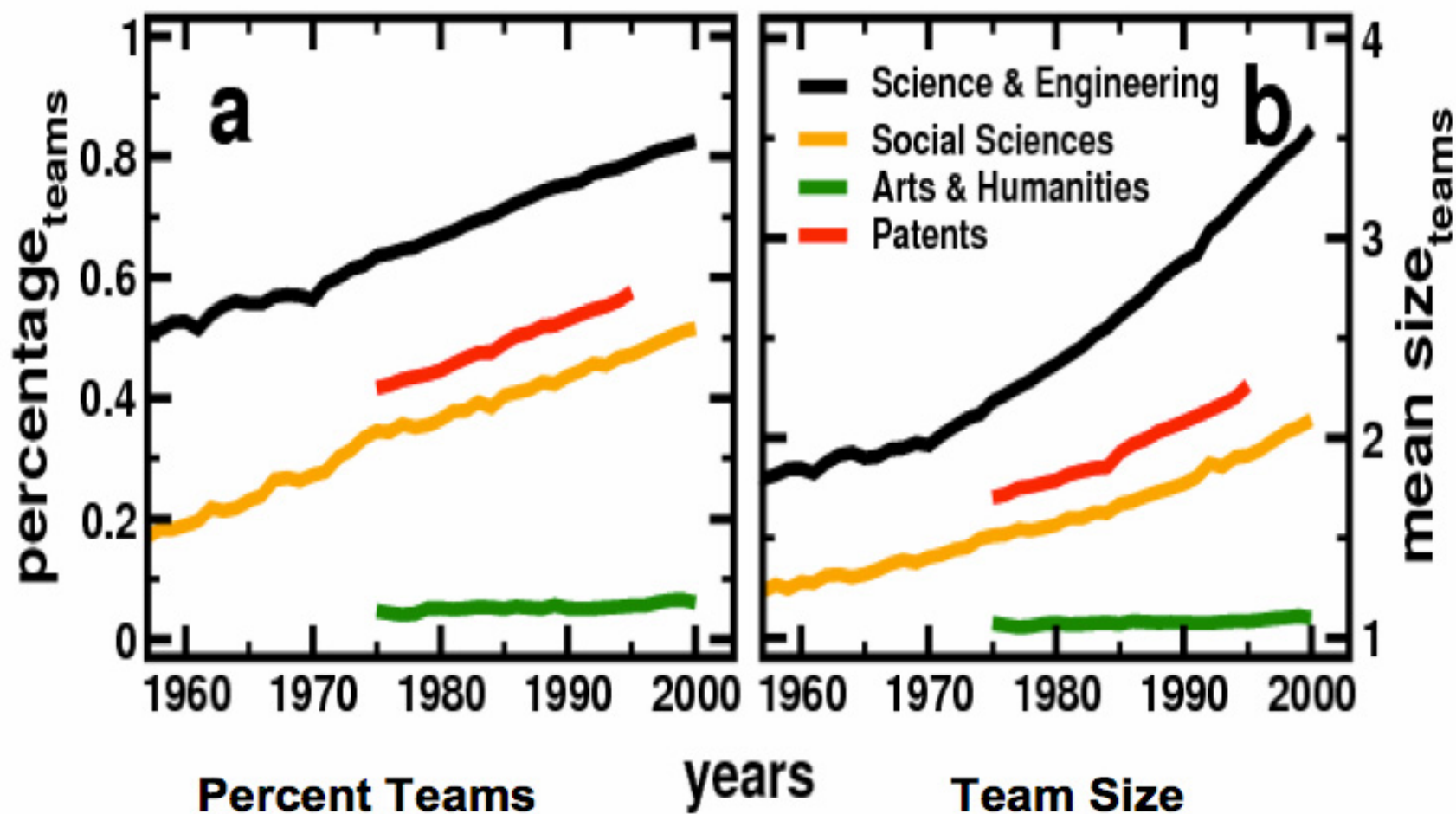

Modeling Productive Climates in Virtual Research Collaborations (SBE-0830254)

Jonathon Cummings
jonathon.cummings@duke.edu
Fuqua School of Business
Duke University

Sara Kiesler
Human-Computer Interaction Institute
Carnegie Mellon University

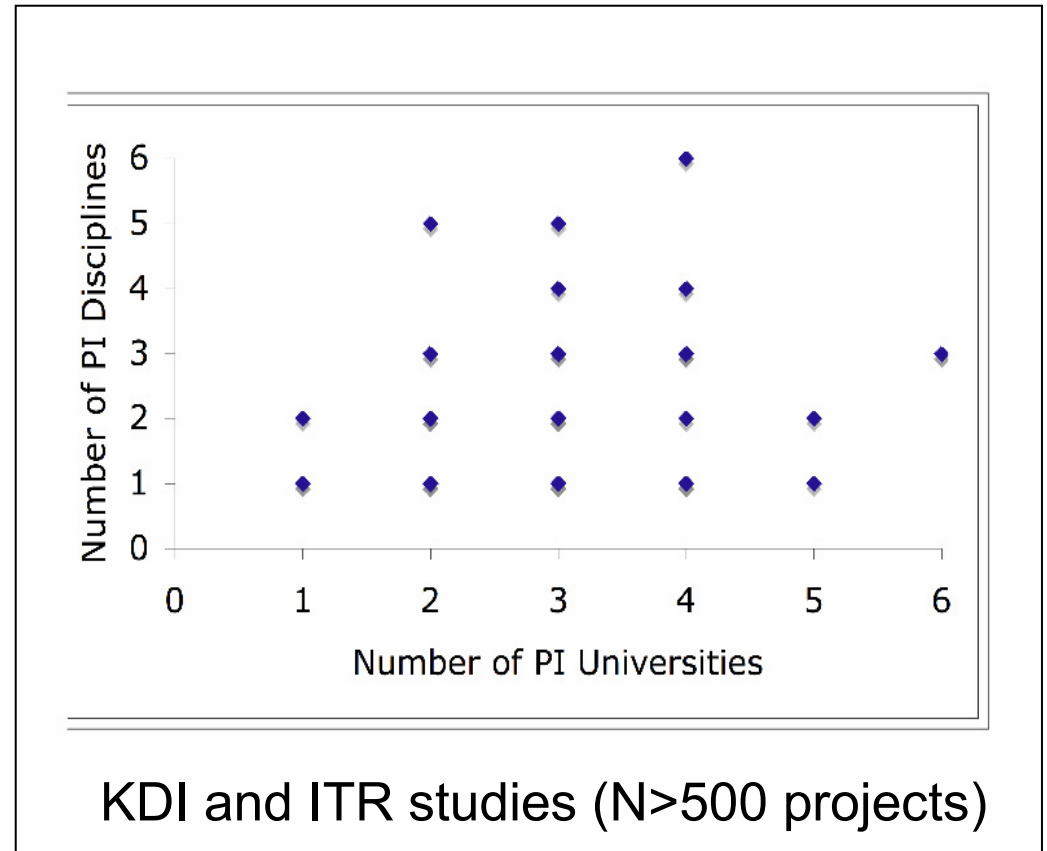
Dramatic shifts in science



Wuchty, Jones, and Uzzi (2007)

More disciplines → More universities

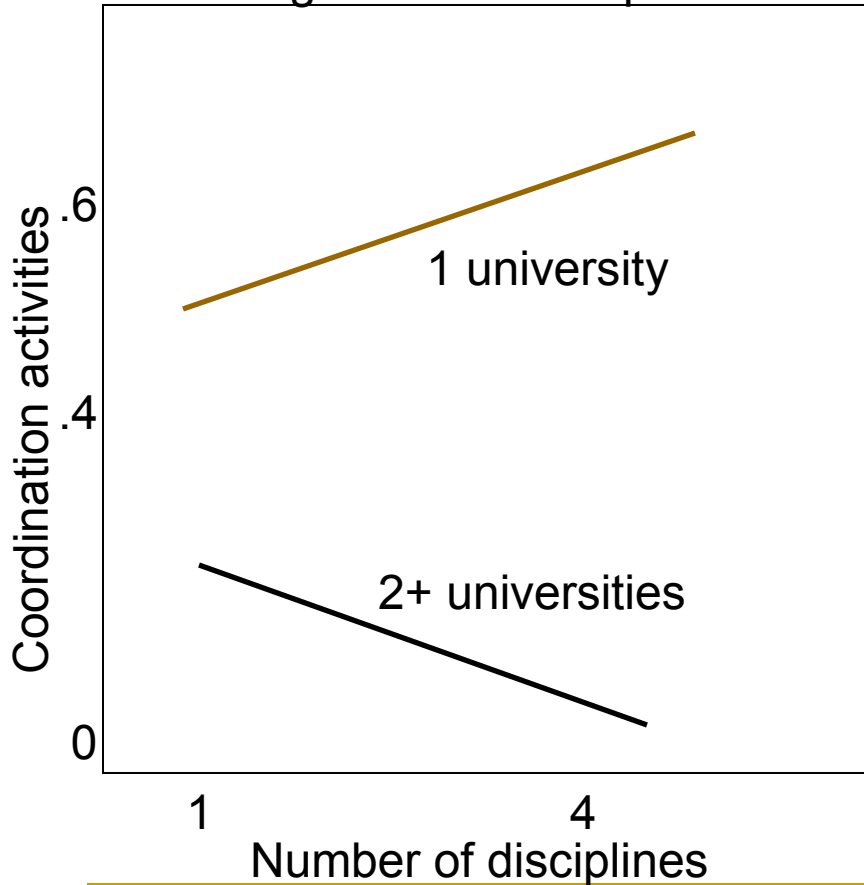
- A single organization does not always have relevant expertise (Kogut & Zander, 1992)
 - Consistent with the knowledge-based view of the firm, researchers often look outside of their organization to build collaborations



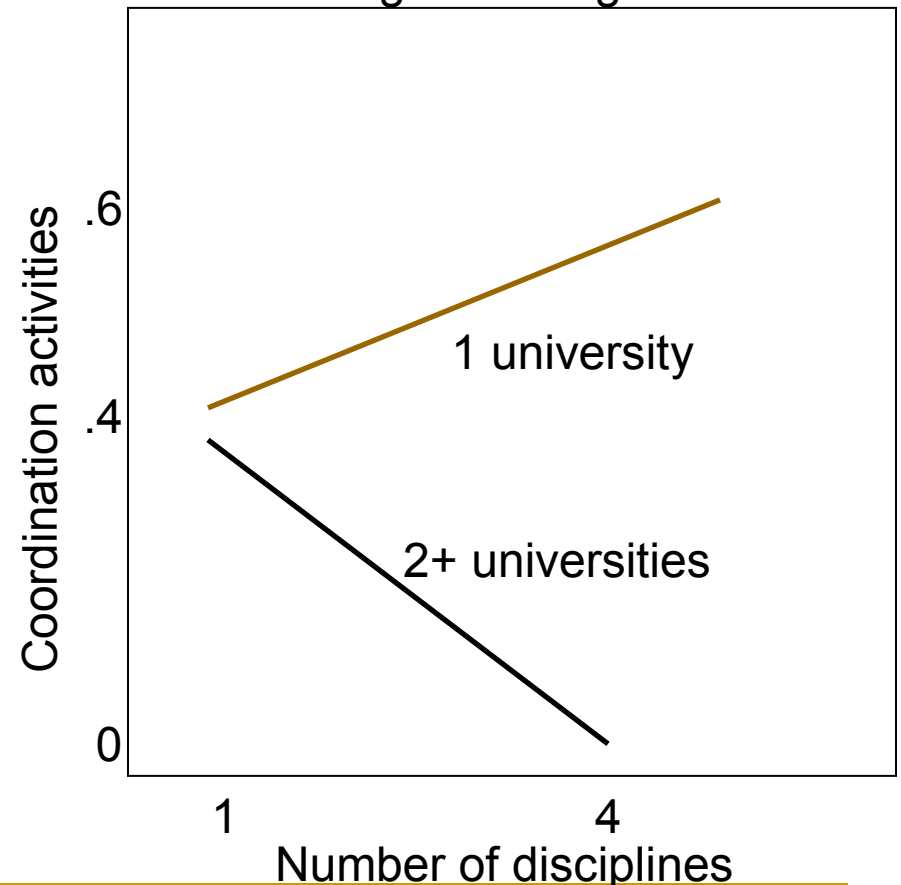
Correlation between more disciplines and more universities is $r = .29$

But more universities increases coordination costs, especially in projects with more disciplines involved

Predicting division of responsibilities



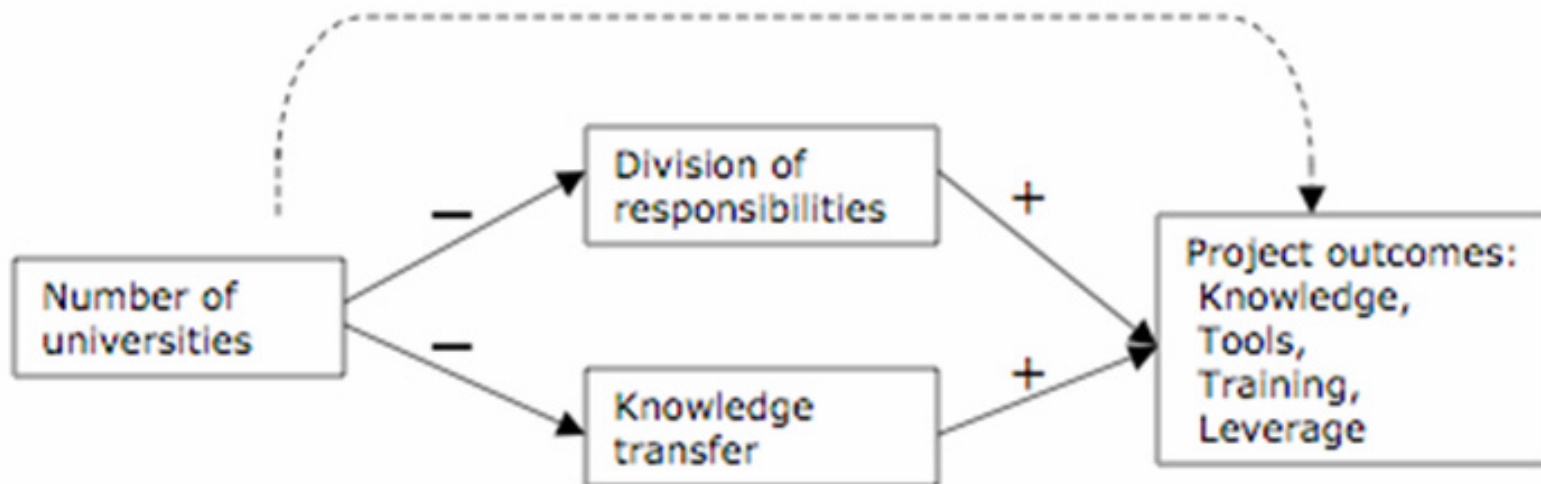
Predicting knowledge transfer



Higher coordination costs reduces project coordination



Full Mediation Model



Current study

- To what extent do institutions create a “productive climate” (social and technical context that supports performance and innovation) for distributed interdisciplinary research projects?
 - collaborators perceive they have institutional resources (e.g., human, technological) to collaborate effectively
 - collaborators see a link between their achievements (e.g., publications) and institutional rewards they receive (e.g., raises)
 - collaborators note minimal conflict between the collaboration (e.g., interdisciplinary, distributed) and their career and their institution’s values.

Sample institutional differences

- “A”-list journals (general, field)
- Publication authorship (first, other)
- Promotion (disciplinary, interdisciplinary)
- Teaching schedule (semesters, quarters)
- Teaching load (preps, students)
- Grant writing (primary, secondary)
- PhD student funding (RA, TA)
- IRB procedures (protocols, consent forms)
- IP agreements (licensing, patenting)

Methodology

- First stage – conduct interviews in a subset of sample to identify dimensions of productive climate and institutional factors that lead scientists to perceive the climate as productive or not (Summer 2009)
- Second stage – use information from interviews to collect archival and survey data, and to quantify the linkages between the productive climate of collaborations and project outcomes (Summer 2010)

Previous papers on this topic

Cummings, J. N., & Kiesler, S. (2005). Collaborative research across disciplinary and organizational boundaries. *Social Studies of Science*, 35(5), 703-722.

Cummings, J. N., & Kiesler, S. (2007). Coordination costs and project outcomes in multi-university collaborations. *Research Policy*, 36(10), 1620-1634.
