Becoming Entrepreneurial: The Role of Relationships in University Technology Transfer

Janet Bercovitz
University of Illinois

Universities as Economic Drivers: Measuring and Building Success
Technology Transfer Activities

- Significant increases in the level & formalization of transfer activities at the University-Industry interface
  - 5X Growth in Technology-Transfer Offices
  - 14X Growth in University Patenting
  - Over 30,000 Active Licenses
  - Over 279,000 Jobs Created from Licensed Tech, 1996-2007

- Yet, there remains great variation in tech transfer activity across and within universities

Sources: AUTM Licensing Survey, 2007; Roessner, Bond, Okubo, Planting, 2009
Fundamental Questions

- Why Are Some Universities/Departments More Active than Others?

- How Do Organizations Change to Become More Entrepreneurial?

- Given Entrepreneurial Activity, What Contributes to Commercial Success?
The Likelihood of Disclosing. . .

- Inventive Capacity Matters
  - Each additional publication + 0.1%
  - Dual Degree (MD/PhD) +13%
  - Boundary Spanning +4%

- Training Matters
  - Pro Tech Transfer Institution +2%
    for every 10 patents
  - Stanford Degree + 27%
  - Experience -1% per year since graduation
The Likelihood of Disclosing...

- **Leadership Matters**
  - Chair active +4% (weakly significant)

- **Peers Matter**
  - 1% increase in the percentage of faculty disclosing within the relevant cohort increases the probability of an individual disclosing by 12%.
Context Matters: Dissonant Situations

- What happens when training and current work environment provide mixed signals?

- Social Learning Trumps Training
  - If not trained with entrepreneurial expectations, local cohort can catalyze
  - If trained with entrepreneurial expectations, local cohort can suppress
  - If neither training nor local pressure then entrepreneurship is a very rare event
**Activity ≠ Success:**
The Role of Collaboration

- Research & Invention are Team Activities
  - Teams are Becoming More Pervasive
  - Teams are More Successful than Solo Efforts
  - Significant Performance Differences Across Teams

- What Factors Influence Team Performance?

“Rita, you and I are good, but together we are wonderful.”

Stanley Cohen to Rita Levi Montalcini talking about their work on Nerve Growth Factor, which was awarded the 1986 Nobel Prize in Medicine
Who You Know Matters

Most Teams Are within Institution, but External Members Add to Productivity
- Patents, Licenses, Royalty $s

For Teams with External Members
- Performance increases with Prior Social Ties
  - Prior Students for External Academics
  - Prior Co-Location for External Industry Team Members
- Prior Social Ties Support Distance
University-Industry Sponsored Research Agreements

- Multi-point Relationship
- Often Recurrent
- Susceptible to Exchange Issues

How Does this Influence Contract Structure?
Influence of Prior Relationship Varies with Level

Technical Level: Company Scientist--PI

Prior Ties \(\rightarrow\) Reduces

Contract Explicitness

Prior Ties \(\uparrow\) Enhances

Administrative Level: TTO--Management
In Sum

- Technology Transfer: All about Relationships
  - Social Context Drives Participation
  - Team Composition Influences Success
  - Social Ties Support Cross-Boundary Interactions
  - Contract Terms Evolve with the Relationship