

University Intellectual Property Ownership & Research Parks: Is there a relationship?

Anne Fuller
College of Management
Georgia Tech

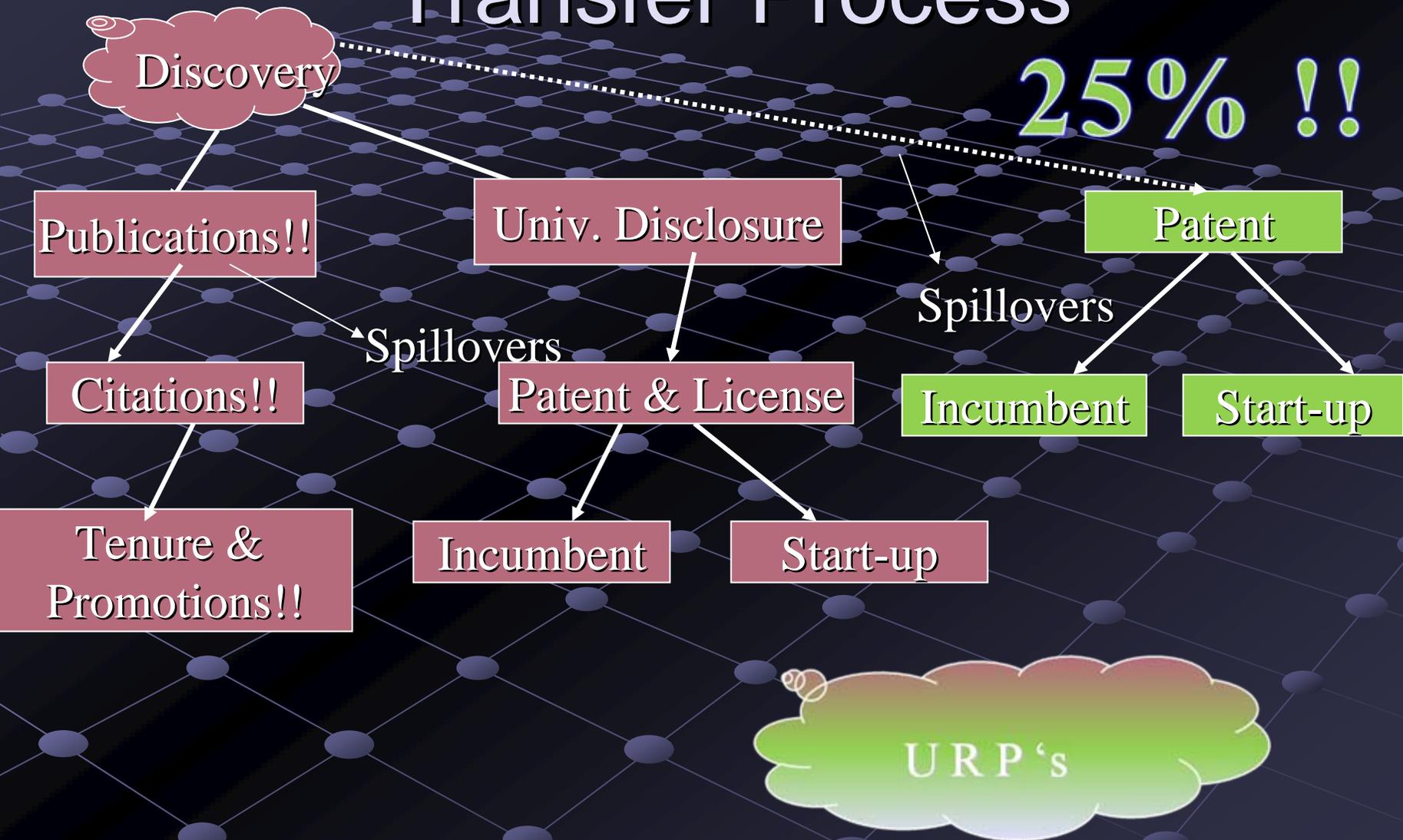


National Science Foundation
WHERE DISCOVERIES BEGIN

University Intellectual Property

- Bayh-Dole Act in 1980
 - Universities to retain inventions using federal funding for support
 - Sustained growth in TTO's and University Patents
- Traditionally viewed through the TTO and relevant licensing activity.
- Recently uncovered an alternative university invention pathway!

The Setting: University Tech Transfer Process



Patents & Parks

- Faculty consulting can and does lead to patents which may not be assigned to the university (Thursby & Thursby '05)
- “Entrepreneurial route” assignment of a patent to a firm rather than the university.” (Audretsch et al '06)
- “A university research park is a cluster of tech-based organizations...to benefit from the university’s knowledge base & ongoing research” (Link & Scott '06)

Patents & Parks

- If URPs are
 - helpful in disseminating university knowledge into firms
 - then a ‘paper trail’ should show a connection to such knowledge flow.
- We submit that assignment of intellectual property can provide a trail for at least some portion of university inventions.
- These “invention patterns” can add insight into one aspect of URP value...commercialization

2 Key Questions

- Are invention patterns different for faculty at universities **WITH** a science park versus those **WITHOUT**?



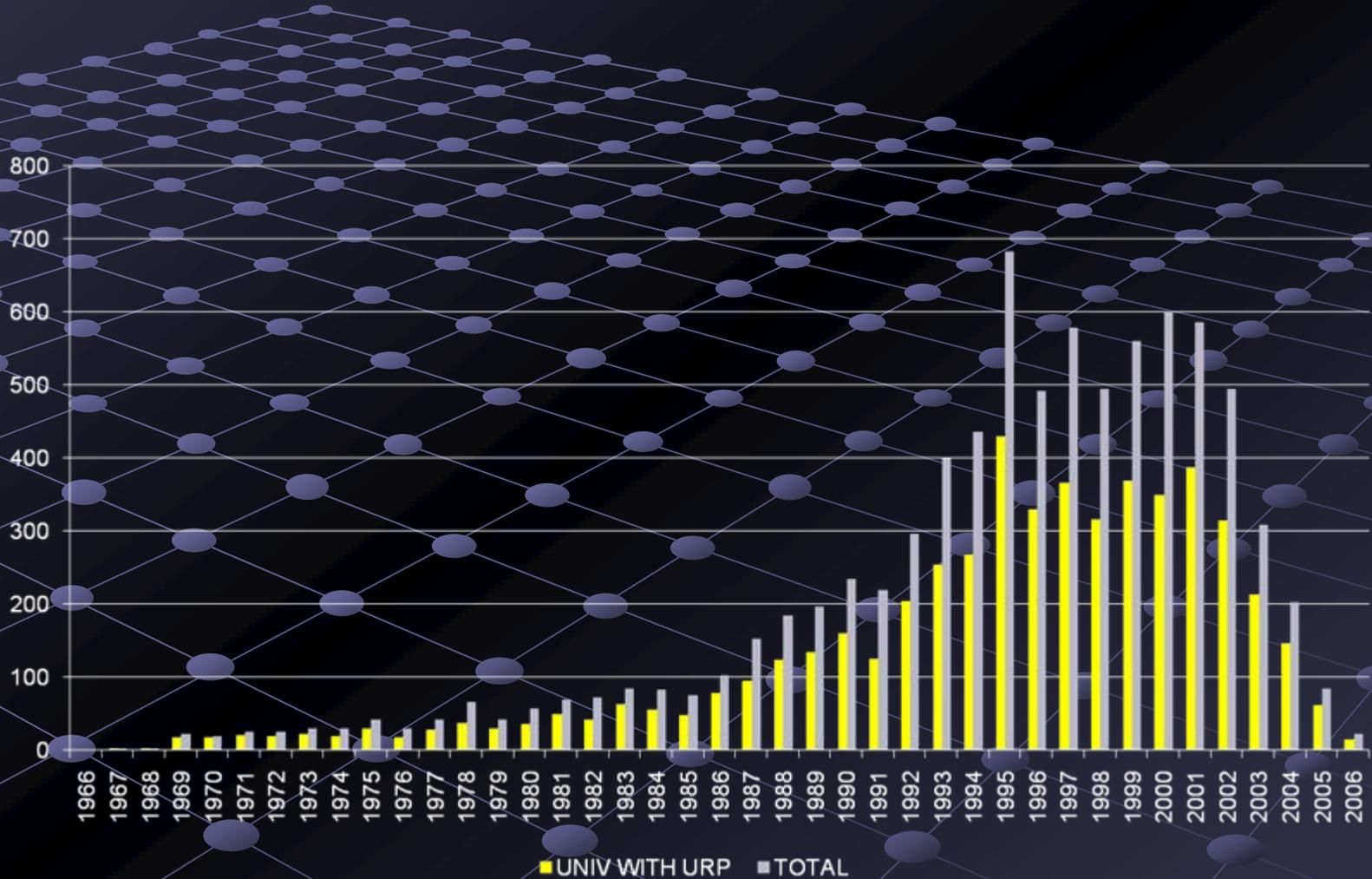
- Do invention patterns **CHANGE** once a university science park is opened?



U.S Faculty: Serial Patenters

	<u>Total</u>	<u>Research Park</u>	<u>Pre & Post URP</u>
# Inventors	354	215	146
# Universities	74	40	27
# Patents	8157	5307	3159
Avg. Patents/Faculty	23.0	24.7	21.6

Distribution of Patents



Park Versus NO Park- Results

■ Faculty Inventors in Universities WITH Research Parks

■ Patent Characteristics

- More likely to assign to a firm (more consulting)

■ Inventor Characteristics

- More likely to be in engineering
- Are less likely to be “star scientists”

■ University Characteristics

- Approximately equivalent department quality
- Generally lower % share of licensing revenues
- Less likely to be public universities or in large cities

Key Findings

- **Evidence that University Science Parks DO increase consulting activity by science and engineering faculty who are serial inventors**
 - Comparison of universities with and without Science Parks
 - Change in patent assignment patterns after Sc. Park is opened
 - Robust to several variants of samples tested
- **More incremental patents have higher likelihood of IP owned by firms while some evidence of more valuable patents at university**
- **“Star” scientists are more likely NOT to consult**
- **Quality of the university department is not a major factor in relation to science parks in our data**

Research Questions

- Do URPs ease the movement of knowledge from the university labs to commercialization?
- How do we measure a 'good' URP?
- How to differentiate URPs from incubator's effect on commercialization activity?
- Can we identify patent assignee firms as residing in URPs at some point in time?
- Are faculty entrepreneurs more likely to locate in URPs?

Useful Metrics

- List of firms in URPs gathered annually
- Origin of firms and founders
 - Incumbent subsidiary
 - University or faculty start-up
 - Other start-up
- Employment and growth (empl, prod, R&D, funding, sales)
- Formal and informal university interactions
 - Licensing from TTO
 - Consulting contracts
 - Grad students employed
 - Seminars hosted or attended

