

Research on RTP & Research Universities: An Introduction

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Presentation to the Innovation and
Impact Committee

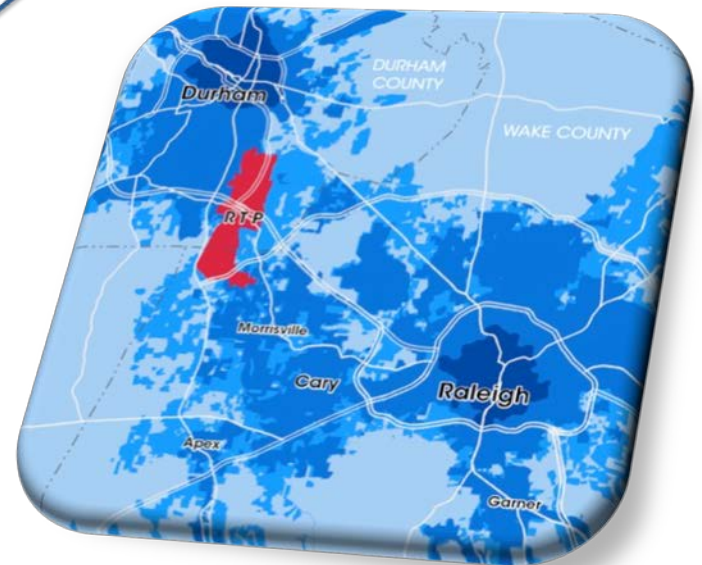
July 23, 2014

Overview

- Introduce myself to start a conversation
- Two Relevant Databases to help inform your work
 - Circling the Triangle
 - The Evolving Research Enterprise
- Plenty of Time for Q & A

Circling the Research Triangle

Joint work with Nichola Lowe,
RENCI & too many students to
mention individually



Research Triangle Park & 50 years of Economic Development

- Everyone thinks they know the story
 - Build a Science Park & Q.E.D.
 - But it's a more complicated history
- Why is the region successful?
 - Attract R&D labs of multinationals
 - Then adapt to entrepreneurship
- Why isn't the region more successful?
 - How do we measure success?





San Francisco

Silicon Valley

Daly City

Pacifica

San Mateo

Half Moon Bay

San Gregorio St. Beach

Pescadero St. Beach

Pescadero

Butano S.P.

Pt. Año Nuevo

Año Nuevo St. Res.

San Francisco

Hayward

Redwood City

Menlo Park

Palo Alto

Woodside

Mountain View

Sunnyvale

Santa Clara

Saratoga

Big Basin Redwoods

Boulder Creek

Concord

Walnut Creek

Danville

San Ramon

Dublin

Livermore

Fremont

Milpitas

San Jose

Los Gatos

Redwood Estates

Brentwood

Byron

Bethany Res. S.R.A.

Tracy

Caswell

Carnegie S.V.R.A.

Lick Observatory

Santa Clara

Morgan Hill

Henry W. Coe S.P.

Diablo

Triangulate Data Sources

- > 4100 Entrepreneurial Firms
 - When does a firm begin?
- Firm Growth
 - Annual Employment Numbers
 - Annual Sales, Revenue
- Annual Innovative Activity
 - Patents
 - FDA trials
 - New Product Announcements
- Annual Events
 - Funding Raised
 - M&A, IPO
 - Participation in incubators, programs

Triangulating Data (>20 Sources)

- **Directories** (RTP, NC Biotech Center, CED, MCNC, BIO, CorpTech, Hoovers)
- **University Technology Licensing Offices**
- **Patents, Clinical Trials, New Product Introductions**
- **N.C. Secretary of State**
- **Funding** (Venture Economics, Capital IQ, Kenney-Patten IPO database)
- **RSS & Web-based scraping**
- **National Employment Time Series**
- **Quarterly Census of Employment & Wages**

Economic & Corporate Development Division of NC Biotech Center (1988)

- Emphasize start-ups and recruiting R&D firms (1988)
- “work with outside organizations to analyze and address policy issues of biotechnological development” (1989)
- Small Firm Financing Program (1990)
- Incubator (1990)
- Venture Capital Conferences (1990)
- Summer MBA Associate Program (1991)
- Company Seed Funding; SBIR Matching Program (1992)
- Economic Development Finance Program Awards (1993)
- New University Tech Transfer Advisory Committee (1993)
- Patent Funding Assistance Program (1994)
- Finance Corning BioPro's recruitment (1994)
- Customized training for Biogen (1995)

The Evolving Research Enterprise

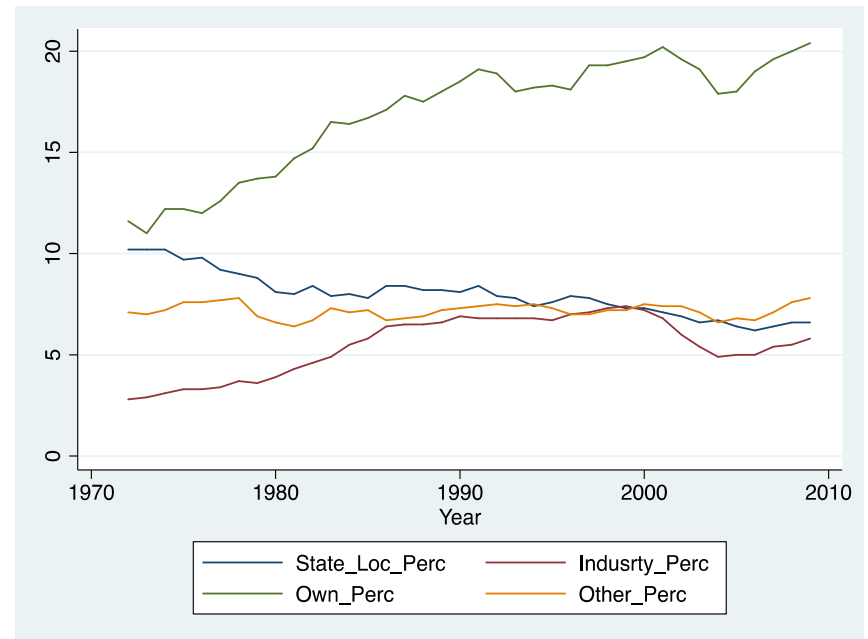
A Data Intensive Investigation of the Changing
Sources of Academic Funding & the Impact on
Outcomes and Academic Careers

Funding Sources of Academic R&D

Emerging Role of “Other”

- Federal accounts for 60% of Academic R&D
- Philanthropy represents 8%
 - \$4.3 BN in academic research
 - larger share than industry (6%)
- “Own” funding over 20%
 - Fast growing category
 - Foundation gifts become endowment

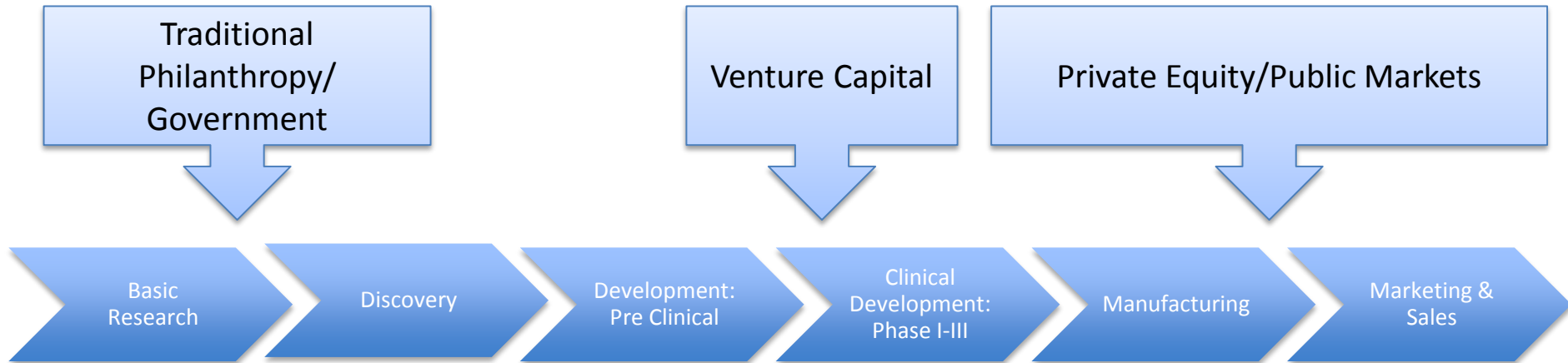
Changes over time



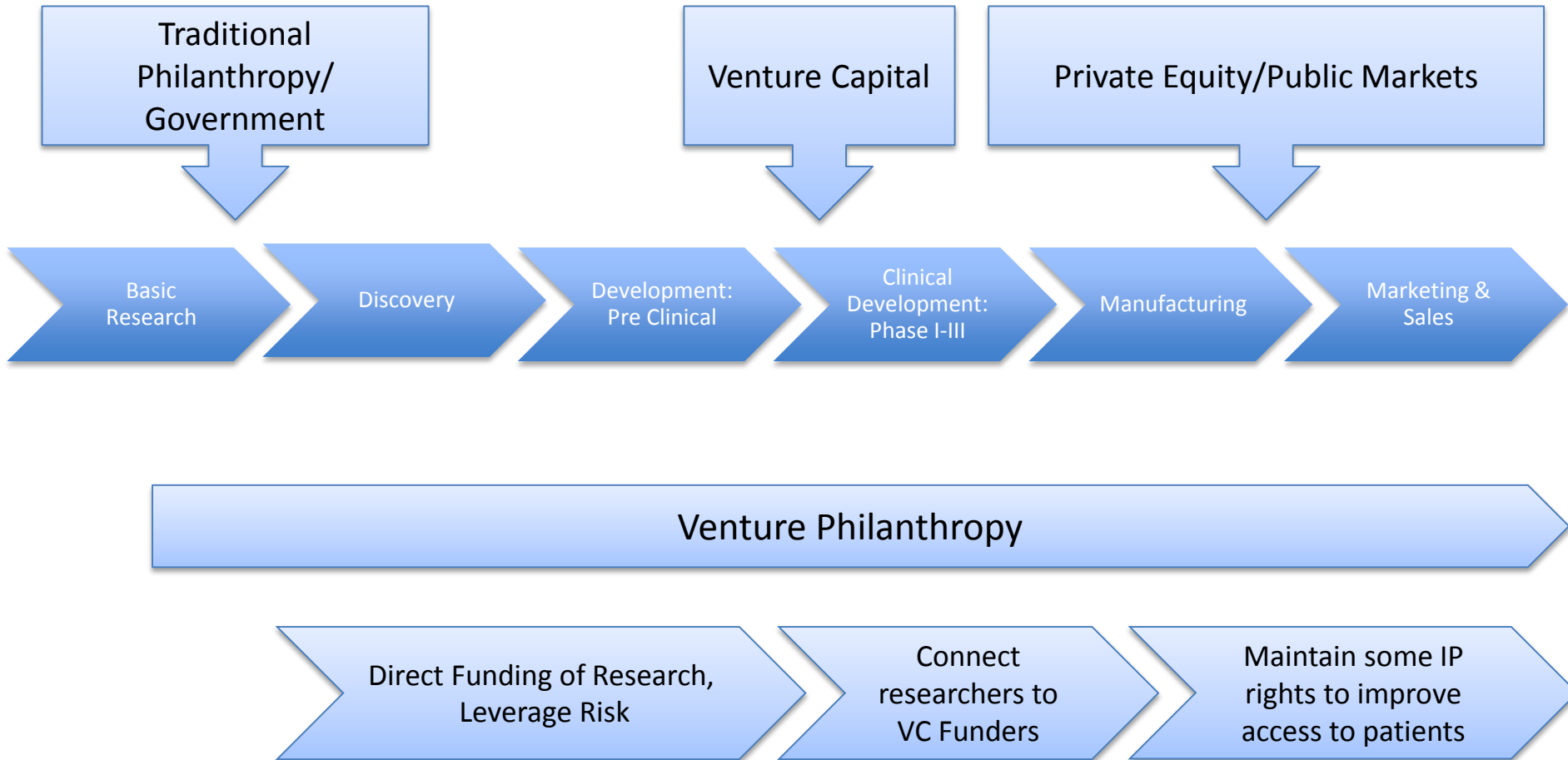
Data Sources

- STAR METRICS Umbrella (Science and Technology for America's Reinvestment: Measuring the Effect of Research on Innovation Competitiveness and Science)
- U-metrics
- Proposals & Awards
 - 6 Universities (2 + in play)
 - 375K Proposals
 - 210K Awards (56% hit rate)
 - 18,315 unique sponsors
- Sponsored Research Agreements
- Outcomes – Publications, Inventions, Patents, Licenses, Companies

Drug Discovery Pipeline



Accelerating Commercialization



Thank You