

Web Resources

**Academic Careers in
Engineering & Science**
www.cwru.edu/admin/aces/index.htm

Faculty Diversity Office
www.cwru.edu/president/aaction/aaeco.html

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Further Reading

Why So Slow: The Advancement of Women by Virginia Valian, Distinguished Professor of Psychology and PI of the Gender Equity Project, Hunter College (CUNY)

- Chosen by the NSF as recommended reading
- Read by ACES participants (chairs, deans, coaches, etc.)
- Discusses: gender schema definition, mountains out of molehills, how bias operates



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University Spin-Offs: Why You Should Care

Scott Shane
April 6, 2005

What's are University Spin-offs?

- ◆ Companies founded to exploit inventions of faculty, staff or students of universities (that make material use of university resources and are assigned to universities)

Some Examples of University Spin-offs



Genentech
IN BUSINESS FOR LIFE

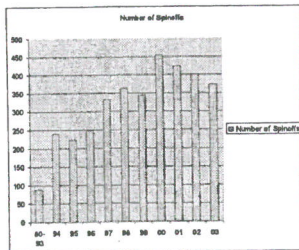
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Why You Should Care About University Spin-offs: Personal

- ◆ Commercialize inventions large companies ignore
- ◆ Are a necessary step in the development of many technologies
- ◆ Provide a way for inventors to gain financially from their inventions
- ◆ Allow inventors to remain involved in the development of their inventions
- ◆ Are becoming an increasingly common commercialization vehicle

Spin-off Formation Rates Have Increased Over the Past 20 Years

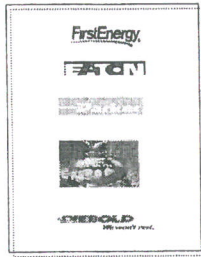



Why You Should Care About University Spin-offs: Policy

- ◆ Create good jobs
- ◆ Generate new industrial clusters
- ◆ Attract venture capital to a region
- ◆ Are valuable companies

Google's Market Value

Google >






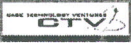
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Making It Happen

Start-Ups, Tech Transfer, and the Real World

Lynn-Ann Glick
Chief Commercial Officer
eLife Sciences Inc.

Nick Proffitt
Assistant Vice President for Technology Transfer
Case Western Reserve University

Outline

- > Introduction
- > Tech Transfer at Case (A Quick Review)
- > Speaker Backgrounds
- > New Company Formation:
When and Why
- > Issues Facing New Companies
- > Basics of Funding and Venture Capital
- > Deal Structure and Ownership
- > Case Technology Ventures

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The Tech Transfer Mission...

- > To lead the successful commercialization of ideas generated by people at Case through:
 - > Licensing to established companies
 - > *Licensing to companies that we create*

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Speaker Background

- Lynn Ann-Gries
 - Chief Investment Officer, JumpStart, Inc.
 - Fund Manager, JumpStart Fund I
 - Former Investment Banker (McDonald Investments)
 - BA, Smith College
 - MBA, NYU

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Speaker Background

- Nick Frollini
 - Assistant VP for Technology Transfer
 - Managing Director, Case Technology Ventures
 - Joined Case in October 2001
 - Trained as an industrial engineer/economist (Carnegie Mellon)
 - Past eight years in technology commercialization and business creation
 - Redleaf Group, Director, M&A
 - VentureBank@PNC, CTO
 - Accenture, Analyst, Natural Resources

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Start-Up Companies at Universities

- Wide Range of Incubation Support
 - Organizer's function/start-up documentation package (legal)
 - Physical incubation services (BioEnterprise)
 - Business advice and assistance
 - Financial support (prototypes, recruiting, etc.)
- Case Technology Ventures
 - Recent Case initiative
 - Funds new companies based on Case IP
- JumpStart, Inc.
 - Business accelerator working with companies in NE Ohio
 - Makes direct investments in carefully selected companies
 - Facilitates regional programming to promote an entrepreneurial economy

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NewCo vs. Established Companies

- License to existing company or create a new company?
- NewCo's make the most sense when:
 - Technology requires a paradigm shift
 - Lycos @ Carnegie Mellon
 - Faculty/researchers want to start a new company
 - and understand the risks and requirements...
 - Development work *beyond the university research lab* is required to make the technology ready for the commercial market

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Key Issues for NewCos

- Can we attract **customers**?
 - A better mousetrap is nice, but...
- Can we recruit experienced **management**?
 - Researchers are not usually qualified to be CEOs
 - Time requirements for founders can be high
- Can the idea be **funded**?
 - Short-term and long-term
 - Venture investors, angels, grants
- Can the company be **grown**?
 - Large, growing markets or surviving "grant to grant"?

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Financing 101

- What is "early-stage financing?"
 - Money brought into a company early in its existence from an outside source under certain terms and conditions (ideally, to help the company grow and move forward)
- A quick note on reality...
 - **ALL** external funding sources come with strings attached -- there is no such thing as a free lunch

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Current Investment Climate

- The financing market is a mess...
 - "Nuclear winter"
 - "Perfect storm"
- The 'internet bubble' has given way to a 'land of desolation'...
- Financing **ANY** company is difficult
 - Financing an **early-stage** company is very, very difficult

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Sources of Funding

- Grants
 - Foundations, Federal (e.g., SBIR, STTR), State (e.g., ODOT TAF)
- Angel Investors
- Traditional Venture Capital Investors
 - Institutional or Professional Investors
- Bootstrapping

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Types of Venture Investors

- **Angels**
 - High 'net worth' individuals -- not necessarily professional or experienced investors
 - Lower return expectations
- **Seed/Pre-Seed**
 - Understand risks of very early-stage technologies
 - Very hard to find
- **Early-Stage**
 - Looking for a start-up with a good chance of success
 - High return expectations (10X return in 3 to 5 years)
 - Likely to be more "hands on"

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Types of Venture Investors

> Late-Stage

- > Invest in growing companies with established revenue streams
- > Lower return expectations (lower risk)
- > Not likely to pitch in and help run the company during troubled times

> Mezzanine

- > Invest in pre-IPG companies
- > Larger (\$10-50MM) deals

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Deal Structure

> Equity

- > Stock in the new company
- > Common or Preferred
- > Sets a value for the company

> Convertible Debt

- > A 'loan' to the company
- > Converted to equity at a later date
 - > With a venture capital round
- > Delays valuing the company
 - > May provide tax benefits to shareholders

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Valuation and Ownership

> Critical Issue:

What is an early-stage company worth?

- > Day 1 - Founders have 100% of the equity
 - > But what does that mean? Are there any assets?
 - > Is there any value?
- > Investors will take a **substantial** share of the company in exchange for an investment
- > Trade-off:
 - > Big piece of a small pie that may go nowhere
 - > Smaller piece of a big pie that is worth something

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Valuation Example

Day 1

Shareholder	Shares	%	\$/Share	Value
Founders	1,000,000	100%	??	??
Founders	1,000,000	100%	??	??

Founders Own 100%

Day 2

Shareholder	Shares	%	\$/Share	Value
Founders	1,000,000	90%	??	??
University	111,111	10%	??	??
University	1,111,111	100%	??	??

University Licenses IP and Takes 10%

Day 3

Shareholder	Shares	%	\$/Share	Value
Founders	1,000,000	63%		
University	111,111	7%		
Investor	476,190	30%		
	1,587,301	100%		

Investor Offers \$1 million for 30% of the Company

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Universities and Venture Investing

- Universities 'finance' new ideas and innovations as part of their ordinary course of business...
 - Research expenditures/centers of excellence
 - Prototype development
 - Fronting patent costs
- Several universities are now exploring direct venture funding for companies based on University-owned intellectual property
 - Two models:
 - External Venture Fund (e.g., Baylor)
 - Internal Venture Fund (e.g., Case Western)

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Case Technology Ventures Concept

- Create an *additional* source of capital at Case
 - Augment existing tech transfer pre-seed activities
 - Promote entrepreneurship
 - Potential upside for Case
 - Visibility for University's contribution to regional economic development
- Funds provided by CTV are used by NewCos for:
 - Developing prototypes
 - Recruiting management talent
 - Creating business/marketing plans
 - Identifying/renting office space/laboratory facilities
 - Retaining corporate counsel
 - Beginning operations

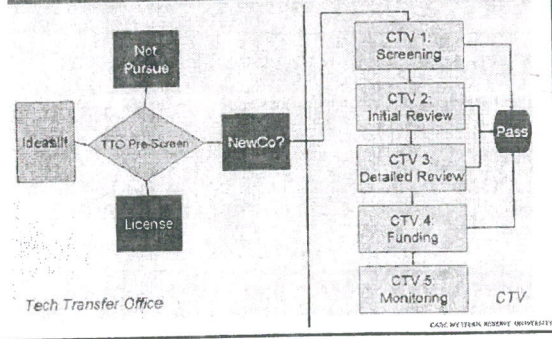
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Fund Basics and Deal Structure

- \$5 million fund
 - \$4 million from Case, \$1 million from State of Ohio
- \$50k to \$250k in funding, depending on the needs of the new company
- Convertible debt
 - Standard documents; market terms and conditions
 - Use of convertible debt avoids the difficulty of valuing equity in an early-stage company
- Oversight by CTV Executive Committee

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CTV Process



Tech Transfer Office

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Case Technology Ventures...

- Will invest in **2 - 4** opportunities each year
 - Highly selective approach
 - Focus and concentrate on high-potential companies
- Provides follow-on support and guidance
- Is focused internally...
 - Case ideas, intellectual property, and people
- Is connected...
 - Discussions with dozens of regional investors
 - Presentations around the country
- **Wants to create success for Case, our researchers, and our region!**

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Current CTV Portfolio

- Interventional Imaging, Inc. (I3)
- Arteriocyte
- Cleveland Nanocrystals

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Thanks

➤ *Thank you for your attention...*

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