F530 – Venture Capital and the Economics of Innovation

Lecture 1 - Introduction and Overview
Economic Growth as Evolutionary Process
Innovation and Uncertainty
Creative Destruction
Who innovates?
Who finances innovation?
Frontier and Followers


Lecture 2 - Formal Models of Growth and Innovation
Models of Economic Growth
Accounting for Technical Change
Endogenizing Innovation
Ignoring Market Risk
What the Models Leave out


Lecture 3 – What Venture Capitalists Do
The canonical venture capital model
Launching projects versus building businesses
The limited scope of VC investments
The biotechnology paradox
VCs versus Entrepreneurs
Managing Uncertainty

Lecture 4 - Evaluating Venture Capital Performance

The stylized facts of venture capital
- Skewness of returns
- Persistence of returns
- Correlation of returns with the Stock Market

The Unicorn Bubble
The dual dependency: Speculation and the State


Lecture 5 - The Failure of “Market Failure”

Knowledge as public good with dynamic increasing returns
Inability to calculate, let alone capture, returns to innovation
Appropriation of returns versus free dissemination
Conflict between “static” and “dynamic” efficiency
Vannevar Bush: the myth of the “The Endless Frontier”
“Mission-oriented” funding: the Defense Department and the NIH
Sponsoring sectors versus picking winners
National Systems of Innovation: the search for political legitimacy
Effectiveness versus efficiency: the dangers of measurement


Lecture 6 – The Banality of Bubbles

The historical record: 1690s-1990s
Distinguishing Bubbles: Equity Bubbles vs. Credit Bubbles
Unpacking the “Super-Bubble” of 1982-2008
Lessons from the literature: “How long can you afford to be wrong?”
Reasoning about (ir)rationality


Lecture 7 - The Necessity of Bubbles
Keynes’ Bridge/Tobin’s Q
Market Valuation of Financial Assets/Reproduction Cost of Real Assets
Financing Risk and Financing Constraints
Financing Innovation at the Frontier: London versus New York
Hot Markets and Cool Stuff


Lecture 8 – Exploring New Economic Space
“What is this stuff good for?” – Market Risk
Railroads: mail order = “the killer app”
Electrification: street lights and street cars, amusement parks, flexible manufacturing, home appliances...and...and...and
ICT: data processing, data analytics, office automation, CAx, ERP, customer self-service, social media, digital services and...and...and

Dynamics of General Purpose Technologies
Who explores: large enterprise or new firm?
Large Enterprises: innovator’s dilemma
New Firms: entrepreneurs and their financiers
The Hybrid Schumpeter Mark III Model


Lecture 9 - Historical Sources of Technological Innovation

Lecture 10 - The Path to the Frontier

Lecture 11 - The Digital Revolution and the State
The Defense Department’s commitment to computing
The Internet, the Cloud and Beyond

Lecture 12 - Leadership of the Next New Economy