Department of Geography & Planning
UNIVERSITY OF TORONTO
Geography of Innovation
GGR 251
Winter 2017

Instructor: Jun Zhang
Office: Sidney Smith Hall, Room 5025B
Office Hours: Wednesday, 10:00-12:00 PM
(or by appointment)
Phone: 416-978-2958
E-Mail: zhang@geog.utoronto.ca

Lecture Hours: Tuesday, 1:00-3:00 PM
Lecture Room: RW 110 (Ramsay Wright Laboratories, 25 Harbord Street)

TA Information:
Matthew Hunter: mr.hunter@mail.utoronto.ca
Ruilin Yang: ruilin.yang@mail.utoronto.ca

Course Description

This course aims to understand the spatial disparities and dynamics of technological innovation. Employing an interdisciplinary approach, we explore how key technological sectors are initiated in different economic and institutional contexts, how they change through time, and how they are influenced by market competition and institutional arrangements at different geographic scales.

Innovation has become a major field of study in a number of social science disciplines, geography included. Contemporary economic geographic studies have greatly enriched our understanding of the innovation process by drawing attention to geographic proximity and knowledge spillovers. However, our knowledge about the deep causality of spatially uneven practice and performance of innovation remains fairly limited. Frequently either a firm-centric or state-centric framework is adopted in existing analyses of innovation. In this course, we seek to draw attention to the interplay between business firms and state institutions.

In contrast to the commonly found theoretical-oriented approaches and standing-alone case studies, this course takes an empirical, comparative and global approach to explore how new technologies, new firms and new markets rise and fall (or rise again) within actually-existing geographic, historical, and globally-interactive contexts. Whenever possible, we take an explicit comparative and relational angle to examine the variegated and interlinked emergence, development and innovative performance of the same sector in different regions and nations. Attention is drawn to the geo-historical dynamics of the electronics sectors, especially. Other major sectors such as automobiles and biotechnology are also examined.

Starting with a critical scrutiny of the iconic Silicon Valley, we examine and compare various cases at multiple analytical levels, historical periods and geographic scales. Over the course of the term, we will cover technological innovation and economic transformation in both the core countries (especially the U.S. and Japan) and major emerging economies, especially those in East

Asia. We also explore the key role of universities and finance for innovation, and draw attention to the dark side of financialization that may divert resources away from 'creative destruction' to 'destructive creation'.

Course Evaluation
The course evaluation will be based on the following aspects:

10%	**Film Review I** (*The Social Network*, **600-800 words,** hard copy, due Week 4, **Jan. 31** at the beginning of class)
10%	**Research Proposal** (**400-500** words + bibliography, hard copy, due Week 6, **Feb. 14** at the beginning of class)
10%	**Film Review II** (*Enron: The Smartest Guys in the Room*, **600-800 words,** hard copy, due Week 10, **March 21** at the beginning of class)
30%	**Research Paper** (**1400-1600** words + reference, hard copy, due Week 12, **April 4** at the beginning of class)
40%	**Final Exam**

Film Review I:
The Social Network is a 2010 American biographical drama film directed by David Fincher and written by Aaron Sorkin. It is adapted from Ben Mezrich's 2009 book *The Accidental Billionaires: The Founding of Facebook, A Tale of Sex, Money, Genius, and Betrayal* (New York: Doubleday). The film portrays the founding of social networking website Facebook and the resulting lawsuits. Although the film is dramatized and not entirely fact-based, it is still very stimulating in making sense of technological entrepreneurship and the geography of innovation in the context of this course. Your review essay is expected to be **600-800 words** and address the following questions (but NOT to make it a list of Q&A):

1) According to the film, where did Zuckerberg's idea for Facebook.com come from and how it has evolved over time?
2) From the film, what did you learn about the gap between a creative idea and a profitable business organization?
3) What did your learn from the film about the issue of intellectual property rights (IPRs) for technological entrepreneurship? Do you think that the Winklevoss brothers deserve the settlement with Zuckerberg which valued $466 million, since they think that Zuckerberg stolen the ideas in ConnectU?
4) Why did Facebook move from Boston to Silicon Valley rather than New York City?
5) According to the film, what role did venture capitalists play to the growth of Facebook?

Furthermore, you are encouraged in your review to make connections to key concepts appeared in the glossary and discussed in class.

This film has been placed on Course Reserves at Media Commons (VideoDVD 756617) in Robarts Library.

Film Review II:
We will discuss the Enron case as innovation corrupted in details in Week 11. Before the lecture, you are expected to watch the documentary film and complete a review, so that you could develop a decent understanding of the case and relevant issues and we could also have an enriched discussion in class.

Enron: The Smartest Guys in the Room is a 2005 documentary film based on the best-selling 2003 book of the same name by Fortune reporters Bethany McLean and Peter Elkind, a study of one of the largest business scandals in American history. The film examines the 2001 collapse of the Enron Corporation, which resulted in criminal trials and subsequent imprisonment of several of Enron's top executives. Your review essay is expected to be **600-800 words** and address the following questions (but NOT to make it a list of Q&A):

1) What really went wrong and led to the collapse of Enron, once the most innovative American company?
2) What is the connection between corporate governance and the financial market, in the example of Enron?
3) In your view and given what you have learned from this course, how to conceptualize the role of geography in the rise and fall of Enron?
4) Is there anything from the film that has changed your understanding about the popular notion of 'free market'?

You are also encouraged in your review to make connections to key concepts appeared in the glossary and discussed in class.

This film is available at Media Commons (VideoDVD 751618) in Robarts Library. You can also watch it online:
http://media2.criterionpic.com.myaccess.library.utoronto.ca/htbin/wwform/006?t=AL086325

Research Project: Geography and Technological Innovation

Students are expected to develop an empirical research project centered on the geography of technological innovation and an explanatory argument based on the "geography as accessibility" approach as discussed in class. The empirical research should examine a particular technological sector, e.g., personal computer, Internet, mobile telecom, software, video game, automobile, bio-tech, clean energy, precision machinery, aerospace, etc., or a particular business firm specialized in one of such sectors. The semiconductor sector is excluded since it will be extensively covered in lectures. Here a technology sector is broadly defined as an industrial sector involving substantive research and development (R&D) activities, which may or may not be conducted in-house by business firms. If your choice is a sector, you geographic scope can be either a city/region or a nation, and you are expected to document and explain the sector's origination and evolution in that particular territory. If your choice is a firm, other than a general account of the firm's history, you are expected to focus on the origination, evolution and spatial trajectory of just one primary technological product that the firm is good at producing, since the firm could be a transnational conglomerate with many different subsidiary companies and/or product lines, such as Samsung Group and Samsung Electronics.

In any case, your chosen territory or firm should have achieved some identifiable success, as leader or follower, in the technological sector in question. You are expected to briefly summarize the major technological development and economic performance milestones of the sector/firm, as

well as its evolving spatial pattern. Of course there can always be the crucial contribution from some scientific or technological geniuses and smart business strategies, your explanation should focus instead on geographic factors. Your explanatory argument should take a "geography as accessibility" perspective, and engage at least TWO of the following elements (which are not necessarily mutually exclusive, and some may be the cause of others): 1) accessibility to favorable resource endowments; 2) accessibility to tangible inputs, especially capital; 3) accessibility to intangible inputs, especially knowledge; 4) accessibility to public infrastructure and facilities; 5) accessibility to key business partners and suppliers; 6) accessibility to markets and/or clients; 7) accessibility to a favorable labor pool; 8) accessibility to social/business networks; 9) accessibility to enabling state institutions and policies, and 10) accessibility to favorable cultural norms and conventions.

Research Proposal: The proposal should 1) identify and justify your chosen technological sector, territory or business firm; 2) put forward a general explanatory argument from a 'geography as accessibility' perspective regarding the success of your chosen case; 3) provide a basic structure of the argument to be advanced; 4) list three academic sources to be used; and 5) give an annotated bibliography offering a brief overview of the three sources. Your larger research paper should develop a thesis related to the tentative explanatory argument stated in the research proposal and the comments received on it. Though it is OK if you believe it is necessary to change your mind after further studies. Developing a strong thesis is crucial for the success of your essay. You will receive assistance from the instructor and TA on this along the way. For some tips on developing a strong thesis, please visit the following site: http://www.writing.utoronto.ca/advice/planning-and-organizing/thesis-statements For more information on U of T writing resources and support, see www.writing.utoronto.ca and http://geography.utoronto.ca/department/resources-for-dept/wit-program/

Research Paper: The length of the paper is expected to be **1400-1600 words**. It is expected to rigorously follow your revised proposal after digesting comments and feedbacks from the instructor and/or TA. More detailed guidelines and assistance will be provided later.

Assignment submission and late penalty

You must submit a hard copy of your assignments in class at the beginning of class (**1pm**). Assignments submitted after class has started will be considered one day late. Email submissions by the deadline can only be accepted when a legitimate reason is given and a hardcopy is submitted subsequently within **48 hours**. Please submit late assignments through the Drop Box in the Geography Main Office, Sidney Smith Hall 5047 (open Monday through Friday, 9 am - 5 pm). Since the Main Office doors are locked at closing time (sharp!), it's a good idea to plan to get there at least 15 minutes before. The penalty for late assignments is 5% per day, with the weekend counting as one day. Nothing will be accepted one week after the deadline unless you have made previous arrangements with the instructor (e.g., due to illness). Be sure to keep electronic copies of your assignments. Students are strongly advised to keep all rough and draft work as well as hard copies of their research papers and assignments until the marked assignments have been returned and the grades been posted on ROSI.

Extensions will be granted sparingly in the case of illness, and you must present me with a completed U of T medical certificate (http://www.illnessverification.utoronto.ca/). Please consult your college registrar should you be having difficulties during term that prevent you from completing your course work due to extenuating circumstances. Further information can be found

at the following link:http://www.artsandscience.utoronto.ca/ofr/calendar/rules.htm#term

Schedule

Week (date)	**Theme**	**Readings**
Week 1: Jan. 10	Introduction	Salter&Oliver 2014
Week 2: Jan. 17	Geography and Innovation	Asheim&Gertler 2005; Feldman&Kogler 2010
Week 3: Jan 24	Silicon Valley: the Global Icon of Innovation	Saxenian 1991; Lécuyer 2000
Week 4: Jan 31	Silicon Valley and *the Military-Industrial-Academic Complex*	Leslie 2000; Mazzucato 2013
Week 5: Feb. 7	"Silicon Valleys East": Japan and Singapore	Angel 1994; Mathews 1999
Week 6: Feb. 14	"Silicon Valleys East": South Korea and Taiwan	Hwang&Choung 2014; Dicken 2007
Feb. 21	Reading Week	
Week 7: Feb. 28	Toyota and Innovation in the Auto Industry	Bernstein 1995; Fine&Raff 2002
Week 8: Mar. 7	San Diego and Innovation in Biotech	Walshok&Lee 2014; Cortright&Mayer 2002
Week 9: Mar. 14	University and Innovation	Fishman et al. 2014; Bramwell&Wolfe 2008
Week 10: Mar. 21	Finance and Innovation	Lazonick 2007; Kenney&Florida 2000
Week 11: Mar. 28	Innovation Corrupted?	Healy&Palepu 2003; Lazonick 2014
Week 12: Apr. 4	Summary and Review	

Contacting me: I expect students to take advantage of my office hours to discuss the course. Please come to office hours or make an appointment if you wish to discuss matters related to the class. Try not to ask questions by email that is difficult to respond briefly. I will try to get back to you within 48 hours. Students should use their U of T email account in all course correspondence, and emails should include GGR251 in the subject line.

Use of electronic devices: I expect cell phones and other communications devices to be either turned off or in silent mode. Do not answer your phone or text message during class. Although you may want to use your electronic devices to read papers, take notes and so on, I would strongly recommend you to stay away from them as much as possible. It is better that you can keep yourself and your classmates away from unnecessary distractions.

Plagiarism: All cases of suspected plagiarism are taken very seriously. It is your responsibility to know and follow University rules and regulations including those that cover plagiarism, missed exams, etc. Plagiarism is quoting (or paraphrasing!) the work of an author (including the work of a fellow student) without a proper citation. If you use word-for-word copy of text from source, you must use quotations marks along with citation. Students should not submit any academic

work for which credit has previously been obtained or is being sought. Please consult the "Rules and Regulations" section of the Arts and Science Calendar (www.artsandscience.utoronto.ca/ofr/calendar/rules.htm) for further information and check the 'How not-to plagiarize' website at http://www.writing.utoronto.ca/advice/using-sources/how-notto-plagiarize

Accessibility: If you require accommodations for a disability, or have any accessibility concerns about the course, the classroom or course materials, please contact Accessibility Services as soon as possible: disability.services@utoronto.ca or visit http://studentlife.utoronto.ca/accessibility

Topics and Required Readings

Week 1 Introduction: Making Sense of Innovation, Geographically (Jan. 10)

Salter, Ammon and Alexy, Oliver 2014. "The nature of innovation," pp. 26-50, in *The Oxford Handbook of Innovation Management*, Mark Dodgson, David M. Gann, and Nelson Phillips (eds.), Oxford: Oxford University Press.

Week 2 Geography and Innovation (Jan. 17)

Asheim, Bjørn T. and Gertler, Meric S. 2005. "The geography of innovation: regional innovation systems," pp. 291–317, in Jan Fagerberg, David C. Mowery and Richard R. Nelson (eds.), *The Oxford Handbook of Innovation*, Oxford: Oxford University Press.

Feldman, Maryann P. and Dieter F. Kogler 2010. "Stylized facts in the geography of innovation," pp. 381-410, in Bronwyn H. Hall And Nathan Rosenberg (eds.) *Handbook of the Economics of Innovation*, Volume 1, Amsterdam: North Holland.

Week 3 Silicon Valley: the Global Icon of Innovation (Jan. 24)

Saxenian, AnnaLee 1991. The origins and dynamics of production networks in Silicon Valley, *Research Policy* 20: 423-437.

Lécuyer, Christophe 2000. "Fairchild semiconductor and its influence," pp. 158-183, in Lee, Chong-Moon, Miller, W.F., Hancock, M.G., and Rowen, H.S. (eds.) *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship*. Stanford, Calif.: Stanford University Press.

Week 4 Silicon Valley and the Military-Industrial-Academic Complex (Jan. 31)

Leslie, Stuart 2000. "The biggest 'angel' of them all: the military and the making of Silicon Valley," pp. 48–67 in Martin Kenney (ed.) *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region*. Stanford: Stanford University Press.

Mazzucato, Mariana 2013. *The Entrepreneurial State: Debunking Public vs. Private Sector Myths*. London: Anthem Press. Chapter 5: The state behind the iPhone, pp. 87-112.

Week 5 "Silicon Valleys East": Japan and Singapore (Feb. 7)

Angel, David 1994. *Restructuring for Innovation: The Remaking of the U.S. Semiconductor Industry*. New York: The Guilford Press. Chapter 3: The challenge of global competition, pp. 63-88.

Mathews, John A. 1999. A silicon island of the east: creating a semiconductor industry in Singapore, *California Management Review* 41: 55-78.

Week 6 Silicon Valleys East: South Korea and Taiwan (Feb. 14)

Hwang, Hye-Ran & Jae-Yong Choung 2014. The co-evolution of technology and institutions in the catch-up process: the case of the semiconductor industry in Korea and Taiwan, *Journal of Development Studies* 50: 1240-1260.

Dicken, Peter 2007. *Global Shift: Mapping the Changing Contours of the World Economy*, 5th edition. New York: Guilford. Chapter 11: 'Chips with everything': the semiconductor industry, pp. 317-346.

Week 7 Toyota and Innovation in the Auto Industry (Feb. 28)

Bernstein, Jeffrey 1995. "Toyoda automatic looms and Toyota automobiles," Chapter 11 of McCraw, T. K. (eds.) *Creating modern capitalism: how entrepreneurs, companies, and countries triumphed in three industrial revolutions*. Cambridge: Harvard University Press, pp. 396-438.

Fine, Charles H. and Daniel M.G. Raff 2002. "Automobiles", pp. 416-432 in Steil, Benn, David G. Victor, and Richard R. Nelson (eds.) *Technological Innovation and Economic Performance*. Princeton: Princeton University Press.

Week 8 San Diego and Innovation in Biotech (March 7)

Walshok, Mary and Carolyn Lee 2014. "The partnership between entrepreneurial science and entrepreneurial business: A study of integrated development at UCSD and San Diego's high-tech economy", pp. 129-155, in Thomas J. Allen and Rory O'Shea (eds.) *Building Technology Transfer within Research Universities: An Entrepreneurial Approach*, Cambridge: Cambridge University Press.

Cortright, Joseph and Mayer, Heike 2002. *Signs of Life: The Growth of Biotechnology Centers in the U.S.*. Washington, DC: Center on Urban and Metropolitan Policy, The Brookings Institution.

Week 9 University and Innovation (March 14)

Fishman, Elliot A., Rory P. O'Shea, and Thomas J. Allen 2014. "Creating the MIT entrepreneurial ecosystem," pp. 60-86, in Thomas J. Allen and Rory O'Shea (eds.) *Building Technology Transfer within Research Universities: An Entrepreneurial Approach*, Cambridge: Cambridge University Press.

Bramwell, Allison and David A. Wolfe 2008. Universities and regional economic development: the entrepreneurial University of Waterloo, *Research Policy* 37: 1175-87.

Week 10 Finance and Innovation (March 21)

Lazonick, Williams 2007. The U.S. Stock market and the governance of innovative enterprise, *Industrial and Corporate Change* 16: 983-1035.

Kenney, Martin and Richard Florida 2000. "Venture capital in Silicon Valley: fueling new firm formation", pp. 98-123 in Martin Kenney (ed.) *Understanding Silicon Valley: The Anatomy of an Entrepreneurial Region,* Stanford: Stanford University Press.

Week 11 Innovation Corrupted? (March 28)

Healy, Paul M. and Krishna G. Palepu 2003. The fall of Enron, *Journal of Economic Perspectives* 17: 3–26.

Lazonick, Williams 2014. Profits without prosperity: stock buybacks manipulate the market and leave most Americans worse off, *Harvard Business Review*, September, pp. 46-55.

Week 12 Conclusion and Review (April 4)

Suggested Readings

Week 1 Introduction to the Course

Crevoisier, Olivier 2014. Beyond territorial innovation models: the pertinence of the territorial approach, *Regional Studies* 48: 551–561.

Fagerberg, Jan 2005. "Innovation: A guide to the literature," pp. 1-26 in Jan Fagerberg, David C. Mowery and Richard R. Nelson (eds.), *The Oxford Handbook of Innovation*, Oxford: Oxford University Press.

Kline, Stephen J. and Nathan Rosenberg 1986. "An overview of innovation," pp. 275-306; in Ralph Landau and Nathan Rosenberg (eds.) *The Positive Sum Strategy: Harnessing Technology for Economic Growth*. Washington, D.C.: National Academy Press.

Mokyr, Joel 2010. "The contribution of economic history to the study of innovation and technical change: 1750–1914"; pp. 11-50; Chapter 2 in Bronwyn H. Hall And Nathan Rosenberg (eds.) *Handbook of The Economics of Innovation*, Volume 1, Amsterdam: North Holland.

Pavitt, K. 2005. “Innovation process,” pp. 86-114 in Fagerberg, J., Mowery, D. C. and Nelson, R. R. (eds.) *The Oxford Handbook of Innovation*. Oxford: Oxford University Press.

Teece, David J. 2007. Explicating dynamic capabilities: The nature and microfoundations of (sustainable) enterprise performance, *Strategic Management Journal* 28: 1319–1350.

Week 2 Geography and Innovation

Carter, Anne P. 2007. “Measurement of the clustering and dispersion of innovation,” pp. 13-29, in Polenske, Karen (ed.) *The Economic Geography of Innovation*. Cambridge: Cambridge University Press.

Casper, Steven, Hollingsworth, J. Rogers and Richard Whitley 2005. “Varieties of capitalism: comparative institutional approaches to economic organization and innovation,” pp. 193-228, in Casper, Steven, and Frans van Waarden (eds.) *Innovation and Institutions: A Multidisciplinary Review of the Study of Innovation Systems*. Cheltenham, UK: Edward Elgar.

Cooke, Phillip 2001. Regional innovation systems, clusters, and the knowledge economy, *Industrial and Corporate Change* 10: 945-74.

Edquist, Charles 1997. “Systems of innovation approaches—their emergence and characteristics,” pp. 1-35 in Edquist, Charles (ed.) *Systems of Innovation: Technologies, Institutions, and Organizations*. London: Pinter.

Feldman, Maryann P. 2000. “Location and innovation: the new economic geography of innovation, spillovers, and agglomeration,” pp. 373-394 in G. Clark, M. Feldman and M. Gertler (eds.) *The Oxford Handbook of Economic Geography*. Oxford: Oxford University Press.

Feldman, Maryann and Pontus Braunerhjelm. 2006. “The genesis of industrial clusters,” pp. 1-13, in Braunerhjelm, Pontus and Maryann Feldman (eds.) *Cluster Genesis: Technology-Based Industrial Development*. Oxford: Oxford University Press.

Freeman, Christopher 2002. Continental, national and sub-national innovation systems--complementarity and economic growth. *Research Policy* 31: 191-211.

Gertler, Meric S. 2007. “Tacit knowledge in production systems: how important is geography?” pp. 87-111 in Polenske, Karen (ed.) *The Economic Geography of Innovation.* Cambridge: Cambridge University Press.

Ratanawaraha, Apiwat and Karen R. Polenske 2007. “Measuring the geography of innovation: a literature review,” pp. 30-59 in Polenske, Karen (ed.) The Economic Geography of Innovation. Cambridge: Cambridge University Press.

Wolfe, David A. and Meric S. Gertler 2006. “Local antecedents and trigger events: policy implications of path dependence for cluster formation,” pp. 243-263, in Braunerhjelm, Pontus and Maryann Feldman (eds.) *Cluster Genesis: Technology-Based Industrial Development*. Oxford: Oxford University Press.

Week 3 Silicon Valley: The Global Icon of Innovation

Angel, David 1994. *Restructuring for Innovation: The Remaking of the U.S. Semiconductor Industry*. New York: The Guilford Press.

Benner, Chris 2002. *Work in the New Economy: Flexible Labor Markets in Silicon Valley*. Oxford, UK: Malden, MA.

Henton, Doug and Kim Held 2013. The dynamics of Silicon Valley: Creative destruction and the evolution of the innovation habitat, *Social Science Information* 52: 539-557.

Isaacson, Walter 2014. *The Innovators: How A Group of Hackers, Geniuses, and Geeks Created The Digital Revolution.* New York: Simon & Schuster.

Kenney, Martin and Donald Patton 2005. Entrepreneurial geographies: support networks in three high-tech industries, *Economic Geography* 81: 201–28.

Kenney, Martin and Donald Patton 2006. "The coevolution of technologies and institutions: Silicon Valley as the iconic high-technology cluster," pp. 38-60, in Pontus Braunerhjelm and Maryann Feldman (eds.) *Cluster Genesis: Technology-based Industrial Development*. Oxford: Oxford University Press.

Kenney, Martin and Urs von Burg 2000. "Institutions and economies: creating Silicon Valley," pp. 218-240, in Kenney, Martin (eds.) *Understanding Silicon Valley: the anatomy of an entrepreneurial region*. Stanford: Stanford University Press.

Langlois, Richard N. 2013. "Organizing the electronic century," pp. 119-167 in Giovanni Dosi, Louis Galambos (eds.) *The Third Industrial Revolution in Global Business*. Cambridge: Cambridge University Press.

Lécuyer, Christophe 2006. *Making Silicon Valley: Innovation and the Growth of High Tech, 1930-1970*. Cambridge, Mass: MIT Press.

Lee, Chong-Moon, Miller, W.F., Hancock, M.G., and Rowen, H.S. (eds.) 2000. *The Silicon Valley Edge: A Habitat for Innovation and Entrepreneurship*. Stanford, Calif.: Stanford University Press.

Saxenian, AnnaLee 1994. *Regional Advantage: Culture and Competition in Silicon Valley and Route 128*. Cambridge: Harvard University Press.

Scott, J. Allen 1988. *New Industrial Spaces: Flexible Production Organization and Regional Development in North America and Western Europe*. London: Pion.

Sturgeon, Timothy J. 2000. "How Silicon Valley came to be", pp. 15-47 in Kenney, Martin (ed.) 2000. *Understanding Silicon Valley: the anatomy of an entrepreneurial region*. Stanford: Stanford University Press.

Week 4 Silicon Valley and *the Military-Industrial-Academic Complex*

Block, Fred 2008. "Swimming against the current: the rise of a hidden developmental state in the United States," *Politics and Society* 36:169-206.

Block, Fred 2011. “Introduction: innovation and the invisible hand of government,” pp. 1-26 in Fred Block and Matthew R. Keller (eds.) *State of Innovation: the U.S. Government's Role in Technology Development*. Boulder, CO: Paradigm Publishers.

Block, Fred and Matthew Keller 2011. “Where Do Innovations Come From? Transformations in the U.S. Economy, 1970-2006,” pp. 154-172, in Fred Block and Matthew R. Keller (eds.) *State of Innovation: the U.S. Government's Role in Technology Development*, Boulder, CO: Paradigm Publishers.

Borrus, Michael 1988. *Competing For Control: America's Stake In Microelectronics*. Cambridge, Mass: Ballinger.

Hart, David. M. 1998. *Forged Consensus: Science, Technology and Economic Policy in the United States, 1921-1953*. Princeton, N.J.: Princeton University Press.

Kleinman, Daniel L. 1995. *Politics on The Endless Frontier: Postwar Research Policy in the United States*. Durham: Duke University Press.

Langlois, Richard N. 2002. “Computers and Semiconductors,” pp. 265-284 in Steil, Benn, David G. Victor, and Richard R. Nelson (eds.) *Technological Innovation and Economic Performance.* Princeton: Princeton University Press.

Leslie, Stuart 1993. *The Cold War and American Science: The Military-Industrial-Academic Complex at MIT and Stanford*. New York: Columbia University Press.

Malerba, Franco (ed.) 2004. *Sectoral Systems of Innovation Concepts, Issues and Analyses of Six Major Sectors in Europe*. Cambridge: Cambridge University Press.

Mowery, D.C. and Langlois, R. 1996. Spinning off and spinning on (?): The federal government role in the development of the U.S. computer software industry, *Research Policy* 25: 947-966.

Mowery, David C. 2010. “Military R&D and innovation,” pp. 1220-1256 in Bronwyn H. Hall and Nathan Rosenberg (eds.) *Handbook of The Economics of Innovation*, Volume 2, Amsterdam: North-Holland.

Mowery, David C. 1998. The changing structure of the US national system: Implications for international conflict and cooperation in R&D policy, *Research Policy* 27: 639-654.

Mowery, David C. and Nathan Rosenberg 1998. *Paths of Innovation: Technological change in 20th century America*. Cambridge: Cambridge University Press.

Mowery, David C., and Richard R. Nelson 1999. *Sources of Industrial Leadership: Studies of Seven Industries*. Cambridge, UK: Cambridge University Press.

Nelson, Richard and Gavin Wright 1992. The rise and fall of American technological leadership: the postwar era in historical perspective, *Journal of Economic Literature*, vol. XXX: 1931-1964.

Nelson, Richard R. 1990. US technological leadership: where did it come from and where did it go? *Research Policy* 19: 117-132.

Rohde, Rohde 2013. *Armed with Expertise: the Militarization of American Social Research During the Cold War.* Ithaca: Cornell University Press.

Ruttan, Vernon W. 2006. *Is War Necessary for Economic Growth? Military Procurement and Technology Development*. Oxford: Oxford University Press.

Weiss, Linda 2014. *America Inc.? Innovation and Enterprise in the National Security State*. Ithaca: Cornell University Press.

Week 5 "Silicon Valleys East": Japan and Singapore

Bair, Jennifer and Mathew Mahutga 2012. "Varieties of offshoring? Spatial fragmentation and the organization of production in twenty-first century capitalism," pp. 270-297; in Morgan, Glenn, and Richard Whitley. *Capitalisms and Capitalism in the Twenty-First Century*. Oxford: Oxford University Press.

Bresnahan, T., Gambardella, A. and Saxenian, A. 2001. 'Old economy' inputs for 'new economy' outcomes: cluster formation in the new Silicon Valleys, *Industrial and Corporate Change* 10: 835-860.

Callon, Scott 1995. *Divided Sun: MITI and The Breakdown of Japanese High-Tech Industrial Policy, 1975-1993.* Stanford: Stanford University Press.

Campbell-Kelly, Martin, and Daniel D. Garcia-Swartz 2015. From mainframes to smartphones: a history of the international computer industry. Cambridge: Harvard University Press.

Dedrick, Jason, and Kenneth L. Kraemer. 1998. *Asia's Computer Challenge: Threat or Opportunity For The United States & The World?* New York: Oxford University Press.

Fagerberg, Jan and Manuel Godinho 2005. "Innovation and catching-up," Chapter19 of Fagerberg, J., D. C. Mowery, et al. (eds.) *The Oxford handbook of innovation*. Oxford; New York, Oxford University Press, pp: 514-542

Hing, Ai Yun 2004. "Innovative milieu and co-operation networks: state initiatives and partnership for restructuring in Singapore," pp. 291-326 in Cooke, P., M. Heidenreich and H.-J. Braczyk (eds.) *Regional Innovation System*. 2nd edition. London; New York: Routledge.

Iammarino, Simona and Philip McCann 2013. *Multinationals and Economic Geography: Location, Technology and Innovation*. Cheltenham: Edward Elgar.

Kenney, Martin, and Richard L. Florida. 2004. *Locating Global Advantage: Industry Dynamics In The International Economy*. Stanford: Stanford University Press.

Kim, L. and R. R. Nelson, (eds.) 2000. *Technology, Learning, and Innovation: Experiences of Newly Industrializing Economies.* Cambridge: Cambridge University Press.

Kimura, Yui 1997. "Technological Innovation and Competition in the Japanese Semiconductor industry", pp. 121-158, in Gotō, Akira, and Hiroyuki Odagiri (eds.) *Innovation in Japan*. Oxford, England: Clarendon Press.

Malerba, Franco 1985. *The Semiconductor Business: The Economics of Rapid Growth and Decline*. London: F. Pinter.

Mathews, John A. 2000. *Tiger Technology: The Creation of a Semiconductor Industry in East Asia*. Cambridge: Cambridge University Press. Chapter 5 Jack and the beanstalk: How Singapore and Malaysia are doing it, pp. 203-244; chapter 1: Tiger chips: the rise of East Asia in the global semiconductor industry, pp. 29-70.

McKendrick, David G., Richard F. Doner, and Stephan Haggard 2000. *From Silicon Valley to Singapore: Location and Competitive Advantage in the Hard Disk Drive Industry*. Stanford: Stanford University Press.

Morris-Suzuki, Tessa 1994. *The Technological Transformation of Japan: From The Seventeenth To The Twenty-First Century*. Cambridge: Cambridge University Press.

Okimoto, Daniel I. 1989. *Between MITI and the Market: Japanese Industrial Policy for High Technology.* Stanford: Stanford University Press.

Okimoto, Daniel I. and Yoshio Nishi 1994. "R&D Organization in Japanese and American Semiconductor Firms," pp. 178-208, in Masahiko Aoki and Ronald Dore (eds.) *The Japanese Firm: Sources of Competitive Strength*, Oxford: Oxford University Press.

Schmitz, H. 2007. Transitions and trajectories in the build-up of innovation capabilities: insights from the global value chain approach, *Asian Journal of Technology Innovation* 15: 151-160.

Tylecote, Andrew 2012. "Innovation versus Going South: a strategic challenge for capitalism in the early twenty-first century," pp. 190-210. Morgan, Glenn, and Richard Whitley. *Capitalisms and Capitalism in the Twenty-First Century*. Oxford: Oxford University Press.

Week 6 "Silicon Valleys East": South Korea and Taiwan

Amsden, A. H. and Chu, Wan-Wen 2003. *Beyond Late Development: Taiwan's Upgrading Policies*. Cambridge, MA: MIT Press.

Archibugi, Daniele and Jonathan Michie (eds.) 1997. *Technology, Globalization and Economic Performance*. Cambridge: Cambridge University Press.

Breznitz, Dan 2007. *Innovation and the State Political Choice and Strategies for Growth in Israel, Taiwan, and Ireland*. New Haven: Yale University Press.

Brown, Clair, and Greg Linden 2009. *Chips and Change: How Crisis Reshapes the Semiconductor Industry*. Cambridge: MIT Press.

Choung, J.-Y., Hwang, H.-R. and Choi, J.-H. 2000. Transition of latecomer firms from technology user to technology creators: Korean semiconductor firms, *World Development* 28: 962-82.

Choung, Jae-Yong, Hye-Ran Hwang and Wichin Song 2014. Transitions of innovation activities in latecomer countries: an exploratory case study of South Korea, *World Development* 54: 156–167.

Chu, W.-w. 2009. Can Taiwan's second movers upgrade via branding? *Research Policy* 38: 1054–1065.

Cyhn, Jin W. 2002. *Technology Transfer and International Production: The Development of the Electronics Industry in Korea*. Cheltenham, UK: Edward Elgar.

Kawakami, Momoko 2011. "Inter-firm dynamics in notebook PC value chains and the rise of Taiwanese original design manufacturing firms," pp. 16-42, in Kawakami, Momoko, and Timothy J. Sturgeon (eds.) The Dynamics of Local Learning in Global Value Chains: Experiences from East Asia. Houndmills: Palgrave Macmillan.

Kim, Linsu 2000. "Korea's national innovation system in transition." Chapter 11 of Kim, L. and R. R. Nelson, (eds.) *Technology, learning, and innovation: experiences of newly industrializing economies.* Cambridge, Cambridge University Press, pp. 335-360.

Lee, C.-W., R. Hayter, and D. W. Edgington. 2010. Large and latecomer firms: the Taiwan Semiconductor manufacturing company and Taiwan's electronics industry, *Tijdschrift voor Economische en Sociale Geografie* 101: 177–198.

Lee, K. and C. Lim 2001. Technological regimes, catching-up and leapfrogging: findings from the Korean industries, *Research Policy* 30: 459-483.

Mathews, J. A 1997. A Silicon Valley of the east: Creating Taiwan's semiconductor industry. *California Management Review* 39, 4: 26-54.

Mathews, John A. 2000. *Tiger Technology: The Creation of a Semiconductor Industry in East Asia*. Cambridge: Cambridge University Press; Chapter 3: The Tangun Boom and the Chaebol: How Korea Did it, 105-155; Chapter 4 A Cat Can Look at a King: How Taiwan Did it 157-202.

Poon, Teresa Shuk-Ching 2002. *Competition and Cooperation in Taiwan's Information Technology Industry: Inter-Firm Networks and Industrial Upgrading*. Westport, Conn: Quorum Books.

Saxenian, Annalee 2002. Transnational communities and the evolution of global production networks: The cases of Taiwan, China and India, *Industry and Innovation* 9: 183-202.

Saxenian, Annalee 2007. "Brain circulation and regional innovation: the Silicon Valley Hsinchu–Shanghai triangle," pp. 190-212, in Polenske, Karen R. (ed.) *The Economic Geography of Innovation*. Cambridge, UK: Cambridge University Press.

Tsai, Terence, and Cheng, Borshiuan 2006. *The Silicon Dragon: High-Tech Industry In Taiwan*. Cheltenham, UK: Edward Elgar Pub.

Week 7 Toyota and Innovation in the Auto Industry

Abo, T. 1996. “The Japanese production system: The process of adaptation to national settings,” pp.136-54 in Boyer, R. and Drache, D. (eds.) *States against Markets: The Limits of Globalization.* London: Routledge.

Aoki, Masahiko, and Ronald Dore 1994. *The Japanese Firm: the Sources of Competitive Strength*. Oxford: Oxford University Press.

Asanuma, Bari. 1994. “Co-ordination between production and distribution in a globalizing network of firms: assessing flexibility achieved in the Japanese automobile industry”, pp. 117-153, in Aoki, Masahiko, Dore, Ronald Philip (eds.) *The Japanese Firm: The Sources of Competitive Strength.* Oxford: Oxford University Press.

Bernstein, Jeffrey 1995. “Japanese capitalism,” Chapter 12 of McCraw, T. K. (eds.) *Creating Modern Capitalism: How Entrepreneurs, Companies, and Countries Triumphed in Three Industrial Revolutions*. Cambridge; Harvard University Press, pp. 439-489.

Fransman, Martin 1999. *Visions of Innovation: The Firm and Japan*. Oxford: Oxford University Press.

Freeman, Christopher 1987. “National systems of innovation: the case of Japan”, Chapter 2 of *Technology, policy, and economic performance: lessons from Japan*, London; New York: Pinter Publishers, pp. 31-54.

Freeman, Christopher and Luc Soete 1997. *The Economics of Industrial Innovation* (3rd Edition). Cambridge: The MIT Press; Chapter 6: Mass production and the automobile, pp. 137-157.

Fujimoto, Takahiro 1997. “The dynamic aspect of product development capabilities: an international comparison in the automobile industry,” pp. 57-99, in Gotō, Akira, and Hiroyuki Odagiri (eds.) *Innovation in Japan.* Oxford, England: Clarendon Press.

Fujimoto, Takahiro 1999. *The Evolution of a Manufacturing System at Toyota*. Oxford: Oxford University Press.

Imai, Ken-Ichi 1992. “The Japanese pattern of innovation and its evolution,” pp. 225-246, in Rosenberg, Nathan, Ralph Landau, and David C. Mowery (eds.) *Technology and the Wealth of Nations*. Stanford: Stanford University Press.

Ingrassia, Paul 2011. *Crash Course: the American Automobile Industry's Road to Bankruptcy And Bailout ... and Beyond.* New York: Random House.

Johnson, Chalmers 1982. *MITI and the Japanese Miracle: The Growth of Industrial Policy, 1925-1975.* Stanford: Stanford University Press.

Nonaka, Ikujiro and Hirotaka Takeuchi, 1995. *The Knowledge-Creating Company: How Japanese Companies Create the Dynamics of Innovation*. New York: Oxford University Press.

Odagiri, Hiroyuki and Akira Goto 1993. “The Japanese system of innovation: past, present, and future,” pp. 76-114 in Richard R. Nelson (ed.) *National Innovation Systems: A Comparative Analysis*. New York: Oxford University Press.

Odagiri, Hiroyuki, Akira Goto, and Richard R. Nelson 1996. *Technology and Industrial Development in Japan: Building Capabilities by Learning, Innovation and Public Policy*. Oxford: Oxford University Press.

Rutherford, Tod D. 2004. Convergence, the institutional turn and workplace regimes: the case of lean production, *Progress in Human Geography* 28: 425-446.

Shimokawa, Kōichi 1994. *The Japanese Automobile Industry: A Business History*. London: Athlone Press.

Sturgeon, Timothy J. Olga Memedovic, Johannes Van Biesebroeck, and Gary Gereffi 2009. Globalization of the automotive industry: main features and trends, *International Journal of Technological Learning, Innovation and Development* 2: 7-24.

Whittaker, Hugh 2009. *Comparative Entrepreneurship: The UK, Japan, and the Shadow of Silicon Valley*. Oxford: Oxford University Press.

Womack, James P., Daniel T. Jones, and Daniel Roos 1991. *The Machine That Changed The World: How Japan's Secret Weapon in The Global Auto Wars Will Revolutionize Western Industry.* New York: HarperPerennial.

Week 8 Innovation in Biotech: the San Diego Case

Braunerhjelm, Pontus and Christian Helgesson 2006. "The emergence of a European biotechnology cluster: The case of Medicon Valley," pp.133-147; in Braunerhjelm, Pontus and Maryann Feldman (eds.) *Cluster Genesis: Technology-Based Industrial Development*. Oxford: Oxford University Press.

Breznitz, Shiri M. and Anderson, W. 2006. Boston metropolitan area biotechnology cluster. *Canadian Journal of Regional Science* 28: 249–264.

Breznitz, Shiri M. 2013. Cluster Sustainability: The Israeli life sciences industry, *Economic Development Quarterly* 27: 29-39.

Chandler, Alfred D. Jr. 2005. *Shaping the Industrial Century: the remarkable story of the evolution of the modern chemical and pharmaceutical industries*. Cambridge: Harvard University Press.

Feldman, Maryann P. 2003. The locational dynamics of the US biotech industry: knowledge externalities and the anchor hypothesis, *Industry and Innovation* 10: 311-328.

Feldman, Maryann P. 2007. "Perspectives on entrepreneurship and cluster formation: biotechnology in the US Capitol region," pp. 241-260 in Polenske, Karen (eds.). *The Economic Geography of Innovation*. Cambridge, UK: Cambridge University Press.

Henderson, Rebecca, Luigi Orsenigo, and Gary P. Pisano 1999. "The pharmaceutical industry and the revolution in molecular biology: interactions among scientific, institutional, and organizational change," pp. 267-311 in Mowery, David C., and Richard R. Nelson (eds.) *Sources of Industrial Leadership: Studies of Seven Industries.* Cambridge, UK: Cambridge University Press.

Hurt, Shelley L. 2011. “The Military's hidden hand: examining the dual-use origins of biotechnology in the American context, 1969-1972,” pp. 31-56; in Fred Block and Matthew R. Keller (eds.) *State of Innovation: the U.S. Government's Role in Technology Development*, Boulder, CO: Paradigm Publishers.

Kenney, Martin 1986. *Biotechnology: The University-Industrial Complex*. New Haven, CT: Yale University Press.

McKelvey, Maureen, Luigi Orsenigo and Fabio Pammolli 2004. “Pharmaceuticals analyzed through the lens of a sectoral innovation system,” pp. 73-120 in Malerba, Franco (eds.) *Sectoral Systems of Innovation Concepts, Issues and Analyses of Six Major Sectors In Europe.* Cambridge: Cambridge University Press.

Owen-Smith, Jason and Walter W. Powell 2006. Accounting for Emergence and Novelty in Boston and Bay Area Biotechnology, pp.61-83; in Braunerhjelm, Pontus and Maryann Feldman (eds.) *Cluster Genesis: Technology-Based Industrial Development*. Oxford: Oxford University Press.

Pisano, Gary 2006. *Science Business: The Promise, The Reality, and The Future of Biotech*. Boston: Harvard Business School Press.

Pisano, Gary P. 2002. “Pharmaceutical biotechnology”, pp. 347-366 in Steil, Benn, David G. Victor, and Richard R. Nelson (eds.) *Technological Innovation and Economic Performance*. Princeton: Princeton University Press.

Rasmussen, Bruce 2010. *Innovation and Commercialisation in the Biopharmaceutical Industry: Creating and Capturing Value*. Cheltenham: Edward Elgar.

Scherer, F.M. 2010. “Pharmaceutical Innovation,” pp. 539-573 in Bronwyn H. Hall And Nathan Rosenberg (eds.) *Handbook of the Economics Of Innovation*, Volume 1, Amsterdam: North Holland.

Vallas, Steven P., Daniel Lee Kleinman, and Dina Biscotti. 2011. “Political structures and the making of U.S. biotechnology,” pp. 57-76 in Fred Block and Matthew R. Keller (eds.) *State of Innovation: the U.S. Government's Role in Technology Development*, Boulder, CO: Paradigm Publishers.

Walshok, Mary Lindenstein and Abraham J. Shragge 2014. *Invention and Reinvention: The Evolution of San Diego's Innovation Economy*. Stanford: Stanford University Press.

Wong, Joseph 2011. *Betting on Biotech: Innovation and the Limits of Asia’s Developmental State.* Ithaca: Cornell University Press.

Gleadlea, Pauline, Stuart Parrisb, Alan Shipmanb, Roberto Simonettib 2014. Restructuring and innovation in pharmaceuticals and biotechs: The impact of financialization, *Critical Perspectives on Accounting* 25: 67–77.

Week 9 University and Innovation

Adams, Stephen 2009. “Stanford University and Frederick Terman’s blueprint for innovation in the knowledge economy,” pp. 169-190 in Clarke, Sally H., Naomi R. Lamoreaux, and Steven W.

Usselman (eds.) *The Challenge of Remaining Innovative: Insights from Twentieth-Century American Business*. Stanford: Stanford University Press.

Allen, Thomas J. and Rory O'Shea (eds.) 2014. *Building Technology Transfer within Research Universities: An Entrepreneurial Approach*, Cambridge: Cambridge University Press.

Bathelt, H., Kogler, D. F. and Munro, A. K. 2011. Social foundations of regional innovation and the role of university spin-offs, *Industry and Innovation* 18: 461-486.

Casper, Steven 2012. "Public research systems, career structures, and the commercialization of academic science in different capitalisms," pp. 237-269 in Morgan, Glenn, and Richard Whitley (eds.) *Capitalisms and Capitalism in The Twenty-First Century*. Oxford: Oxford University Press.

Foray, Dominique and Francesco Lissoni 2010. "University research and public–private interaction," in Bronwyn H. Hall And Nathan Rosenberg (eds.) *Handbook of The Economics of Innovation*, Volume 1, Amsterdam: North-Holland.

Gillmor, C. Stewart 2004. Fred Terman at Stanford: building a discipline, a university, and Silicon Valley. Stanford: Stanford University Press.

Goldstein, H. and Glaser, K. 2012. Research universities as actors in the governance of local and regional development, *The Journal of Technology Transfer* 37: 158-174.

Greiger, Roger L. 2004. *Knowledge and Money: Research Universities and the Paradox of the Marketplace*. Stanford: Stanford University Press.

Iacobucci, Frank, and Carolyn J. Tuohy 2005. *Taking Public Universities Seriously*. Toronto: University of Toronto Press.

Murmann, Johann P. 2013. The co-development of industrial sectors and academic disciplines, *Science and Public Policy* 40: 229–246.

Murmann, Johann P. 2003. *Knowledge and Competitive Advantage: The Coevolution of Firms, Technology, and National Institutions*. Cambridge: Cambridge University Press.

Mowery, David and Sampat, Bhaven 2005. "Universities in national innovation systems," pp. 209-239 in J. Fagerberg, D. Mowery and R. Nelson (eds.) The Oxford Handbook of Innovation. Oxford: Oxford University Press.

Patton, Donald and Martin Kenney 2010. The role of the university in the genesis and evolution of research-based clusters, pp. 214-238 in Dirk Fornahl, Sebastian Henn, Max-Peter Menzel (eds.) *Emerging Clusters: Theoretical, Empirical and Political Perspectives on the Initial Stage of Cluster Evolution*, Edward Elgar: Cheltenham.

Rosenberg, Nathan and Richard R. Nelson 1994. American universities and technical advance in industry, *Research Policy* 23: 323-348.

Rosenberg, Nathan and L. E. Birdzell 1986. *How the West Grew Rich: The Economic Transformation of the Industrial World*. New York: Basic Books. Chapter 8: The link between science and wealth, pp. 242-268.

Thorp, Holden and Buck Goldstein 2010. *Engines of Innovation: The Entrepreneurial University in The Twenty-First Century*. Chapel Hill: University of North Carolina Press.

Week 10 Finance and Innovation

Avnimelech, Gil and Morris Teubal 2006. "The emergence of Israel's venture capital industry: How policy can influence high-tech cluster dynamics," pp. 172-191; in Braunerhjelm, Pontus and Maryann Feldman (eds.) *Cluster Genesis: Technology-Based Industrial Development*. Oxford: Oxford University Press.

Carpenter, Marie, William Lazonick and Mary O'Sullivan 2003. The stock market and innovative capability in the new economy: the optical networking industry, *Industrial and Corporate Change,* 12: 963-1034.

Chen, Henry, Paul Gompers, Anna Kovner, and Josh Lerner 2010. Buy local? The geography of venture capital, *Journal of Urban Economics* 67: 90-102.

Cumming, Douglas 2010. *Venture Capital: Investment Strategies, Structures, and Policies*. Hoboken: Wiley.

Fabrizio, Kira R. and David C. Mowery 2007. "The federal role in financing major innovations: information technology during the postwar period," pp. 283-316 in Naomi R. Lamoreaux and Kenneth L. Sokoloff (eds) *Financing Innovation in the United States*, 1870 to the Present, The MIT Press.

Florida, Richard and Donald F. Smith Jr. 1993. Venture capital formation, investment and regional industrialization, *Annals of the Association of American Geographers* 83: 434-451.

Gompers, Paul A. and Lerner, Josh 1999. *The Venture Capital Cycle*. Cambridge: MIT Press.

Hsu, David H., and Martin Kenney 2005. Organizing venture capital: the rise and demise of American Research & Development Corporation, 1946–1973, *Industrial and Corporate Change* 14: 579–616.

Klepper, Steven 2007. "The organizing and financing of innovative companies in the evolution of the U.S. automobile industry," pp. 85-128 in Naomi R. Lamoreaux and Kenneth L. Sokoloff (eds.) *Financing Innovation in the United States, 1870 to the Present*, Cambridge: The MIT Press.

Lazonick, William 2011. Why executive pay matters to innovation and inequality, pp. 413-439, in Cynthia A. Williams and Peer Zumbansen (eds.) *The Embedded Firm: Corporate Governance, Labor, and Finance Capitalism.* Cambridge: Cambridge University Press.

Lazonick, William and Mariana Mazzucato 2013. The risk-reward nexus in the innovation-inequality relationship: who takes the risks? Who gets the rewards? *Industrial and Corporate Change* 22: 1093–1128.

Lazonick, William and Öner Tulum 2011. US biopharmaceutical finance and the sustainability of the U.S. biotech business model, *Research Policy* 40: 1170-1187.

Lerner, Josh 2002. "Venture Capital," pp. 327-346 in Steil, Benn, David G. Victor, and Richard R. Nelson (eds.) *Technological Innovation and Economic Performance*. Princeton: Princeton University Press.

Martin, Ron, Berndt, Christian, Klagge, Britta, and Sunley, Peter 2005. Spatial proximity effects and regional equity gaps in the venture capital market: Evidence from Germany and the UK, *Environment and Planning A* 37: 1207--1231.

Metrick, Andrew and Ayako Yasuda 2010. *Venture Capital and the Finance of Innovation*, 2nd Edition, Wiley.

Niosi, Jorge 2014. "Venture capital in Canada," pp. 172-183 in Andreas Pyka and Hans-Peter Burghof (eds.) *Innovation and Finance*. London&New York: Routledge.

O'Sullivan, Mary 2000. The innovative enterprise and corporate governance, *Cambridge Journal of Economics* 24: 393-416.

O'Sullivan, Mary 2006. Living with the U.S. financial system: the experiences of GE and Westinghouse in the last century, *Business History Review* 80: 621-655.

O'Sullivan, Mary 2007. "Funding new industries: a historical perspective on the financing role of the U.S. stock market in the twentieth century," pp. 163-216 in Naomi R. Lamoreaux and Kenneth L. Sokoloff (eds). *Financing Innovation in the United States, 1870 to the Present.* Cambridge: The MIT Press.

O'Sullivan, Mary A. 2004. "Finance and Innovation," pp. 240-265 in Fagerberg, J., Mowery, D. and Nelson, R. (eds.) *The Oxford Handbook of Innovation,* Oxford University Press.

O'Sullivan, Mary A. 2013. "Celebrating youth: historical origins of the U.S. stock market's appetite for novelty," pp. 252-299 in Giovanni Dosi, Louis Galambos (eds.) *The Third Industrial Revolution in Global Business*. Cambridge: Cambridge University Press.

Powell, W., W. Koput, I. Bowie, and L. Smith-Doerr 2002. The spatial clustering of science and capital: accounting for biotech firm-venture capital relationships, *Regional Studies* 36: 291–306.

Saxenian, AnnaLee and Sabel, Charles 2008. Venture Capital in the "Periphery": the New Argonauts, Global Search, and Institution Building, *Economic Geography* 84: 379-394.

Teubal, Morris 2014. "Innovation policy, innovation and innovation finance co-evolution: the Israeli case and some implications," pp. 144-171 in Andreas Pyka and Hans-Peter Burghof (eds.) *Innovation and Finance.* London&New York: Routledge.

Zook, Matthew A 2002. Grounded Capital: Venture Financing and the Geography of the Internet Industry, 1994-2000, *Journal of Economic Geography* 2: 151 – 177.

Week 11 Innovation Corrupted?

Amara, Emmanuel. 2007. The Enron scandal. New York, NY: Filmakers Library. http://www.aspresolver.com/aspresolver.asp?FLON;1641328

Archibugi, Daniele, Jeremy Howells and Jonathan Michi (eds.) 1999. *Innovation Policy in a Global Economy*. Cambridge: Cambridge University Press.

Bradford, Neil and David A. Wolfe 2013. Governing regional economic development: innovation challenges and policy learning in Canada, *Cambridge Journal of Regions, Economy and Society* 6, pp. 331–347.

Janeway, William H. 2012. *Doing Capitalism in The Innovation Economy: Markets, Speculation and The State*. Cambridge: Cambridge University Press.

Lazonick, W. 2013. "The fragility of the U.S. Economy: the financialized corporation and the disappearing middle class," pp. 232-276 in J. Zysman and D. Breznitz (eds.) *The Third Globalization: Can Wealthy Nations Stay Rich in the Twenty-First Century*, Oxford: Oxford University Press.

Lazonick, Williams 2013. "From innovation to financialization: how shareholder value ideology is destroying the US Economy," pp. 491-511 in Martin H. Wolfson and Gerald A. Epstein (eds.) *The Handbook of the Political Economy of Financial Crises*, New York: Oxford University Press.

Salter, Malcolm 2008. *Innovation Corrupted: The Origins and Legacy of Enron's Collapse*. Cambridge: Harvard University Press.