

Syllabus

Economics of Creativity and Innovation Econ – GB 2362

Fall 2020

This version: May 19, 2020

For an updated version, see www.petramoser.net/about, under the teaching tab.

Course materials will be posted at www.petramoser.net/MBAInnovation

(Please e-mail me to be added to the course)

Course description

Innovation is absolutely critical for economic growth, health, and general well-being.

Why are some cities or countries such fertile environments for innovation while others are lagging behind? How do you recognize “good” policies that encourage innovation? How do intellectual property rights (IP) affect innovation? Can entrepreneurs succeed in countries with weak IP? How do restrictions on immigrations, like caps on visas for high-skilled immigrants influence innovation?

In this course we will examine these questions through the lense of economic analysis, and empirical data (facts). Students will learn to independently evaluate evidence on the effects of these policies and they will learn to identify policies and enviroments that foster creativity and innovation.

Course topics will cover the effect of policies regarding patents, copyrights, immigration, social inequality, and education. Our focus will be on policies that influence creativity and innovation either directly (as in the case of patents and copyrights), or indirectly (e.g., by ameliorating economic inequality, improving access to education, or by restricting immigration).

The course will be roughly divided in two parts:

1. Part I is focused on **Intellectual Property**. We will learn about patents, copyrights, trade secrecy, and other mechanisms that you will use to protect investments in innovation (lectures 1-6). We will examine compulsory licensing, a policy of which you either a beneficiary or a victim at least once in your life) and patent pools (a mechanism, subject to varying degrees of government restrictions that may allow you to avoid litigation, or make it impossible for you to compete.)
2. Part II zooms out to examine **Innovation: The Bigger Picture**. For example, will examine the effects of copyright on creativity in the arts and on scientific progress. We will investigate the impact of economic inequality on entrepreneurship and innovation, and ask whether investments in education can help to encourage broadbased participation in innovation. Finally, we will investigate how immigration – and in particular restrictions on immigration –shape innovation.

In addition to the substantitve content, this class will help students develop presentation and communication skills that are critical for professional success. To this end, class sessions are a

mixture and student presentations of recent research on creativity and innovation. Assessment will be based on these presentations and on a final project.

Prerequisites

We will draw on economics concepts from the Firms and Markets core economics course (or equivalent economics preparation).

Lectures

Thursday 6.00-9.00

Location: TBD

Course materials

- *Required Readings: See detailed outline of class sessions.*
- *Pirates and Patents. Chapters available on the course site for students.*
- *Announcements, assignments and course materials will be posted on NYU Classes. Please monitor the site regularly for updates and important class materials.*

Deliverables and grades

Our “deliverables” are designed to encourage participation and continuous learning. My goal is to send you on your path with a thorough understanding of forces that encourage and discourage innovation. As a bonus, I will help you hone your skills of writing memos and presenting with enthusiasm and clarity in front of a group.

- *Class participation (20%).* Engagement and active participation by all class members is vital and a fundamental component of your learning experience. To maximize the value of the discussion, please complete the required readings ahead of class. In the case of academic papers, you are *not* required to master the math or the econometrics in the paper!

Our goal is to understand what the paper studies (the *research question*), why is it important (the motivation), what it finds (the research findings) and to be able to determine potential strengths and limitations (how much confidence you have that the results are true!).

Class participation grades will reflect an assessment of your total contribution to the learning environment. This reflects not just the frequency of your class contributions, but also: (1) their quality (your ability to draw on course materials and your experiences productively; ability to advance or sharpen in-class discussion and debate; willingness to take risky or unpopular points of view; use of logic, precision, and evidence in making arguments); and (2) the professionalism of your conduct (attendance, punctuality, preparedness, respecting colleagues and their contributions, and refraining from conduct that is distracting, including use of phones and laptops during class).

- *Four research memos (40%).* Pick four of the starred (*) readings and write up a short summary of the paper and its results in less than 500 words. You will learn to summarize the

essence of the findings, both for your own records and to share with participants in our class. Your note should include the following:

- Title: The title of the paper, the names of the authors, the journal + your names
 - Paragraph 1: What is the research question and why is it important?
 - Paragraph 2: What did we know before this paper? What did we not know and why does it matter? What was missing?
 - Paragraph 2, 3, and 4 What are three things most important things that have you learned from the paper? (You can use screenshots of graphs and illustrations from the paper to show the main point)
 - Paragraph 5. What do you think is still missing
 - Paragraph 6: What is the most impressive thing about this paper?
- *Two Group Projects* (40%). Take a stance on a policy issue and present evidence in eight slides. (This is a lot tougher than it looks!)

In group projects you'll be asked to take a stance on a specific policy and back up your argument with evidence from the readings, news articles, or other types of publicly available data. Topics will include policies regarding intellectual property, copyrights, and immigration. You will prepare a short presentation (between six and eight slides) to outline your position.

- Slide 1: Clearly state the question that is up for debate
- Slide 2: State your position
- Slide 3-5: Present up to three arguments in favor (pick your strongest points and back them up with data and evidence!)
- Slides 6-7: Present the most powerful counterargument against your case. Explain why you take your position despite this argument (This is very important and tough. Be honest and thoughtful.)
- Slide 8: Summarize your position and why you hold it.

Draft slides are due 48 hours before class. I will give you extensive comments for a revision. Their purpose is two-fold: Firstly, I'd like you to become really good at presenting your thoughts in slide form. Secondly, we need some type of quality control (Note: this has never been needed because you are going to do a great job in the first round!)

Up to three groups, picked by me with some randomness, will present their results in class. I will notify you at least 24 hours ahead of your presentation. (If necessary, we will be able to do these presentations remotely and even record them ahead of time. I will be happy to work with you on this, either to prepare a remote presentation or a recording.)

- Since we will be working steadily, there will be no need for a final exam. Instead, we will to work together consistently throughout the term, learn a lot and have fun!

Honor code

The Stern community believes that honesty and integrity are necessary for rewarding academic and professional experiences. These qualities form the basis for the strong trust among members of the

academic community (students, faculty, and administrators) that is essential for excellence in education. The Honor Code requires that each student act with integrity in all academic activities and endeavor to hold his or her peers to the same standard.

Students with disabilities

If you have a qualified disability and will require academic accommodation during this course, please contact the Moses Center for Students with Disabilities (CSD, 998-4980) and provide me with a letter from them verifying your registration and outlining the accommodations they recommend. If you will need to take an exam at the CSD, you must submit a completed Exam Accommodations Form to them at least one week prior to the scheduled exam time to be guaranteed accommodation.

Care-taking

We want to create an inclusive atmosphere for all people, regardless of their care-taking responsibilities. For example, it is ok to bring kids to class when you need to bring them. As a courtesy to your class mates, please make sure that you sit towards the door, and can easily exit when it's necessary.

Course policies and deliverables are designed to promote flexibility and allow everyone to participate, because "life" happens, and we want to be supportive of that.

Getting help

I would like each of you to learn and gain as much as you can from this course. If you are stuck, or have any difficulty with the material, please stop in to office hours or send me an email (pmoser@stern.nyu.edu), and I will respond within 24 hours. My regular office hours are TBD every. Our teaching fellow, TBD, is also available by email (TBD) and by appointment.

Announcements regarding the course will be made on NYU Classes. Besides administrative issues, I may post clarifications on the class material. You are responsible for checking NYU Classes for announcements on a regular basis (i.e., at least a couple of times a week).

Readings and chapters of my book are posted at www.petramoser.net/MBAInnovation.

Schedule

Part I - Intellectual Property

1- Why Should You Care about Innovation?

September 24. Course Introduction

Why understanding the drivers of creativity and innovation is important for your business
Why it is important to understand policies that encourage and discourage creativity and innovation.

Prepare for our class discussion:

[Here are the innovations we need to reopen the economy](#), Bill Gates, Washington Post, April 23, 2020

[Beat COVID-19 through innovation](#), Science, May 8, 2020

[How climate change can benefit from mobilization and digitalization](#)

[What we Learned from Jeff Bezos' patents](#). HBS Working Knowledge, February 2020.

[The Difference Between Copyrights, Trademarks and Patents](#), *New York Times*, April 16, 2020

Pirates and patents, [Introduction](#)

[Do patents invent innovation?](#) March 13, *Knowable Magazine*

We will watch two short videos:

[Why Should we Care About Productivity?](#)

[Innovation, Patents, Copyrights](#), A 4-minute video by Core Econ

Some simple tricks for getting people to listen:

How to [make a killer presentation](#)

2 – Patents

October 1

Questions for discussion:

- Patent data suggest a surge in Chinese innovation. Is it true?
- Can an innovative company be successful in a country without effective intellectual property rights?
- Are patent laws necessary for a country to be innovative?

Please read to prepare for our class discussion:

1. [Are patents indicative of Chinese innovation?](#) China Power
2. *Pirates and Patents*, [Can there be innovation without patents?](#)

We will watch these short videos in class:

[In a first, China knocks U.S. from top spot in global patent race](#), Reuters, April 7, 2020

[Main Take-Aways from World Intellectual Property Indicators 2019 Report](#), 2-minute WIPO video

Further readings:

1. Boldrin, Michele and David K. Levine. "The Case Against Patents." *Journal of Economic Perspectives*, Volume 27, No. 1, February 2013, pp. 23-44.

3 – Alternatives to Patents

October 8

Questions for discussions:

- What would you do to protect your investments in an innovation?
- Are patents the most effective mechanism to protect intellectual property in your industry?
- Or are other mechanisms/strategies more effective? What are those strategies?

Please read to prepare for class:

[A note on artificial intelligence and intellectual property in Sweden and the EU](#), Lexology, April 2020

Pirates and Patents, [Secrecy](#) & [How do patents influence the direction of technical change?](#)

Further readings:

1. Moser, Petra "Patents and Innovation: Evidence from Economic History." *Journal of Economic Perspectives*, Volume 27, No. 1, February 2013, pp. 23-44.
<http://www.aeaweb.org/articles.php?doi=10.1257/jep.27.1.23>
2. Moser, Petra, "Innovation without Patents – Evidence from World's Fairs" *The Journal of Law and Economics*, Volume 55, No. 1, February 2012, pp. 43-74. Last working paper at <http://ssrn.com/abstract=930241>.
3. Moser, Petra, "How Do Patent Laws Influence Innovation? Evidence from Nineteenth-Century World's Fairs," *American Economic Review*, 95(4), pp. 1214-1236 (2005). [[link](#)]

4 - Piracy

October 15

Question for discussion:

- US firms are deeply concerned about intellectual property violations and piracy of proprietary innovations by Chinese firms.
- How real do you think are these concerns?
- What is the US government currently doing to protect US firms? And what is the government doing in your country?
- What other policies could be suggestive?

- How do you think will piracy affect innovation in China in the long run? Explain

Read to prepare for class:

1. [I'm a filmmaker whose business is threatened by piracy – and site blocking could be my lifeline](#), Jonathan Yunger, *The Hill*, April 15, 2020.
2. [Businesses Built on Piracy Are Pushing Streaming Innovation](#), Techstory
3. *Pirates and Patents*, Piracy

5 – Compulsory Licensing

October 22

Patents, which increase the price of innovative treatments, render these treatments unaffordable for consumers in many developing countries. To address this issue, the World Trade Organization allows for “compulsory licensing” – a policy which allows a developing country government to issue a license to produce a life-saving drugs to a domestic firm – without the consent of the patent owner. Not surprisingly, this policy is extremely controversial, and many argue that it will discourage innovation.

Questions for Discussion:

- Why does the United States need strong patent laws domestically and abroad? List three reasons. Do you agree?
- Suppose you are in charge of technology policy for India. Do you want patent laws? Why or why not?
- Now, think about your home country (if it's the US or India, pick another place where you'd like to live). What are the pros and cons of having a “strong” US-style system of patent laws? Please prepare your answers to this question, we will collect responses in class.
- Compulsory licensing allows domestic firms in developing countries to produce innovations that are patented by foreign firms. Do you expect this policy replace innovation in developing countries? Why or why not?

Please read to prepare for our class discussion:

1. [A patented Covid-19 vaccine could price out millions](#)
2. [IP is crucial to finding breakthrough covid-19 medicines, Novartis policy head states](#), IAM, April 20, 2020
3. *Pirates and Patents*. [“Compulsory Licensing”](#)

In 1966, drought and an exploding population confronted India with the imminent threat of severe famine. We will watch excerpts from this documentary about the role of innovation – and in particular, about Norman Borlaug, a plant breeder from Iowa – to implement the science-based programs of the Green Revolution, saving countless lives.

[The Man Who Tried To Feed The World](#), PBS Documentary, April 21, 2020.

We will have a discussion about the pros and cons of intellectual property rights in developing countries, in the context of the film, your readings, and the three papers below (not required).

Further readings:

1. Duggan, Mark, Craig Garthwaite, Aparijita Goyal, “The Market Impacts of Pharmaceutical Product Patents in Developing Countries: Evidence from India.” *American Economic Review*, vol. 106, No. 1, January 2016, pp. 99-135.
2. Moser, Petra and Alessandra Voena. “Compulsory Licensing: Evidence from the Trading with the Enemy Act” *American Economic Review*, 102, Issue 1 -- February 2012. Last working paper version available at SSRN <http://ssrn.com/abstract=1313867>.
3. Baten, Joerg, Bianchi, Nicola and Moser, Petra, “Does Compulsory Licensing Discourage Invention? Evidence from German Patents after the US Trading-with-The-Enemy Act” <http://ssrn.com/abstract=2417532>

6 - Patent Pools

October 29

Patent pools allow a group of patents to combine their patents and use (or license) them as if they were a single firm. Regulators are ambivalent towards pools. Pools may facilitate the commercialization of new technologies by reducing litigation risks when several firms own mutually infringing patents for the same technologies. But pools may also discourage future innovations by making it more difficult for outside firms to compete with a group of firms that work together in protecting their patents. Moreover, agreements between firms may weaken the incentives to compete to improve a technology covered by a pool.

Pools also proposed as a mechanism to encourage innovation and ultimately increase access to medications to combat covid-19.

Group project: Suppose three leading pharmaceutical firms would like to pool their patents for a vaccine to combat covid-19 1) Argue that the pool should be allowed 2) Argue that it should be dissolved. List at least three reasons for each point of view and back them up with examples or data. Use any of the readings below.

To prepare for our class discussion, please read:

1. [Needed – A Pandemic Patent Pool](#), The Hindu, April 30, 2020
2. [European Union urges the World Health Assembly to pursue a voluntary pool for Covid-19 products](#), Stat April 20, 2020
3. *Pirates and Patents*, Patent Pools

Further readings:

4. * Lampe, Ryan and Moser, Petra, “Do Patent Pools Encourage Innovation? Evidence from the 19th-Century Sewing Machine Industry.” <http://ssrn.com/abstract=1308997>, *Journal of Economic History*, 2010.

5. Lampe, Ryan and Moser, Petra, “Patent Pools and the Direction of Technical Change: Evidence from the 19th-Century Sewing Machine Industry.” *Rand Journal of Economics*, 2014, Volume 44, Issue 4, pp. 757-778. <http://ssrn.com/abstract=1468062>
6. Lampe, Ryan and Moser, Petra, “Patent Pools, Competition, and Innovation. Evidence from 20 Industries under the New Deal.” *Journal of Law, Economics, & Organization*, Volume 32, 2016, pp. 1-36. <http://ssrn.com/abstract=1967246>
7. Boutin, Aleksandra, “Screening for Good Patent Pools through Price Caps on Individual Licenses,” *American Economic Journal: Microeconomics*, vol. 8, no. 3, August 2016, pp. 69-94.

Part II – Creativity and Innovation: The Big Picture

7- Copyrights and Creativity

November 5

The US Supreme Court has scheduled oral arguments for *Google v Oracle* for October and November 2020, with a decision likely in 2021. This is likely to be the key IP decision of the year and we will follow it closely. The basic question is when software is copyrightable — the focus here is particularly at the interface-level (the the naming-convention for Java function calls). In the case, Google also suggests that if the naming-convention is copyrightable that any copyright should be so “thin” that fair use would readily apply in most situations.

Class 7 and 8 will introduce fundamental tradeoffs that are inherent in copyrights. We will return to these concepts and build on them as information on *Google v. Oracle* becomes available.

Questions for discussion:

- In April 20, 2023, the French composer Jean Michel Jarre proposed “eternal copyrights to support grass roots creator.” UNESCO picked up on Jarre’s idea in a widely publicized debate.
- What do you think? Please list three arguments in favor and against Jarre’s proposal

To prepare for class today, please read

1. [Jean Michel Jarre poses the question “what about eternal copyright to support grassroots creators?”](#) Complete Music Update, April 23, 2020
2. Read at least one of the summaries of “Copyright and Creativity” on [Vox](#), on [Weixin](#), and in the [NBER Digest](#).

We will listen to a short segment on copyrights in Interview on [Freakonomics](#) (min 17:40-28.00), and I will summarize the findings in the readings below.

3. * Giorcelli, Michela and Petra Moser. [Copyright and Creativity. Evidence from Italian Operas](#). Forthcoming in the *Journal of Political Economy*. Interviews in the [IMF podcast](#) and on [NPR](#).

4. * Li, Xing, Megan MacGarvie and Petra Moser. “Dead Poet’s Property. Does Copyright Increase Price.” *RAND Journal of Economics* <http://ssrn.com/abstract=2170447>.
5. MacGarvie, Megan and Petra Moser “Copyright and the Profitability of Authorship” in Avi Goldfarb, Shane Greenstone, and Catherine Tucker (eds). *The Economics of Digitization: An Agenda*. Available at SSRN: <http://ssrn.com/abstract=2296095>.

8 –The Dark Side of Copyright

November 12

Group project: JSTOR has been accused of pricing academic research out of reach for students in developing countries. Please describe JSTOR’s current pricing schedule. Explain a) why is it perfect as is or b) propose changes to the pricing scheme. Back your argument up with examples and evidence from the readings in lectures 7 and 8.

Questions for discussions:

- Funding agencies require scientific output to be available to all.
- What are the benefits and potential costs of such a policy?
- Should scientist enforce copyrights on their work?
- Some publishers, like Elsevier, have offered authors the right to post their articles “open access” in return for a fee paid by the author. How much would you be willing to pay for publishing your papers? Give examples and explain your “price.”

Please read to prepare for class:

1. [JSTOR’s paywall is still alive, but it’s trying to score brownie points during a pandemic](#), *The Print*, March 20, 2020
2. [Leaked document on Elsevier negotiations sparks controversy](#), Science Guide, November 2019
3. [Confiscation of German Copyrights Boosted U.S. Math and Science](#), *NBER Digest*

Further readings

4. *Biasi, Barbara and Petra Moser [Effects of Copyright on Science - Evidence from the WWII Book Republication Program](#) Conditionally accepted at AEJ Microeconomics. Summaries in the [NBER Digest](#), [Vox](#), [Cato](#), and the Austrian [Science ORF](#). Interview with [ORF](#).

9 – Inequality: Who Becomes an Inventor and Entrepreneur?

November 19

Questions for discussion:

Why should we care about economic inequality? Does it create any *economic* costs?

What are the effects of economic inequality on invention? How do you expect parents' income to influence invention? Is it true that talent is distributed equally across gender, ethnicity and social class? Who becomes an entrepreneur in the United States? How do age, gender, and social status impact a person's chances of becoming a successful entrepreneur?

Read to prepare for class:

1. [“Entrepreneurship Always Leads to Inequality”](#) Daniel Isenberg, *Harvard Business Review*
2. [Equal Rights Make Sense for U.S. Economy](#), *New York Times*
3. Azolay, Pierre, Benjamin F. Jones, J. Daniel Kim, and Javier Miranda. “Age and High-Growth Entrepreneurship.” *American Economic Review Insights*, forthcoming

Further reading:

4. * Bell, Alex, Raj Chetty, Xavier Jaravel, Neviana Petkova, John Van Reenen, “Who Becomes an Inventor in America? The Importance of Exposure to Innovation” *Quarterly Journal of Economics* http://www.equality-of-opportunity.org/assets/documents/inventors_paper.pdf.
5. * Aghion, Phillipe, Ufuk Akcigit, Ari Hyytinen, and Otto Toivanen. “The Social Origins of Inventors” NBER Working Paper #24110 https://static1.squarespace.com/static/57fa873e8419c230ca01eb5f/t/5a25b42353450a6fad8dbcbe/1512420388198/aaht_final.pdf
6. Kaplan, Steven N., and Joshua Rauh. 2013. "It's the Market: The Broad-Based Rise in the Return to Top Talent." *Journal of Economic Perspectives*, 27(3): 35-56.DOI: 10.1257/jep.27.3.35
7. Hsieh, Chang-Tai, Erik Hurst, Charles I. Jones, Peter J. Klenow The Allocation of Talent and U.S. Economic Growth *Econometrica*, September 2019, Vol. 87 (5), pp. 1439-1474 (lead article) [Paper](#) (PDF) | [Slides \(old\)](#) | [Online Appendix](#) | [NYT Interview with Stanford GSB](#)

10 – Does Public Education Encourage Innovation?

December 3

[The Barriers to Mobility. Why Higher Ed's Promise Remains Unfulfilled](#), The Chronicle for Higher Education, December 31, 2019.

[The worst possible way to push kids into studying science, math and engineering](#). *Washington Post*

1. * Chetty, Raj, John Friedman, Emmanuel Saez, Nicholas Turner, and Danny Yagan, “Mobility Report Cards: The Role of Colleges in Intergenerational Mobility” NBER Working Paper No. 23618, Revised Version, http://www.equality-of-opportunity.org/papers/coll_mrc_paper.pdf
2. * Bianchi, Nicola, “The Indirect Effects of Educational Expansions: Evidence from a Large Enrollment Increase in University Majors” *Journal of Labor Economics* Media coverage in [Kellogg Insight](#), [Marginal Revolution](#), [IPR News](#), [VoxEu](#), [Science Careers](#).

3. Giorcelli, Michela [The Long-Term Effects of Management and Technology Transfers](#) *American Economic Review*, 109(1): 121-55, 2019. [AEA Chart of Week](#), [Pro-Market Blog](#), [Microeconomics Insights Blog](#), [The Atlantic](#)

11 –Immigration and Innovation

December 10

Group Project. Take a stance on one or both of the following statements: 1) Restrictions on immigration encourage innovation. 2) To protect American innovation and strategically important knowledge, the United States should restrict the topics that Chinese students are allowed to study in the United States, and exclude Chinese students from STEM fields. Give three arguments in favor and against this argument each and back them up with evidence from the four papers listed below. Present your answer in 15-20 succinct, informative, and entertaining slides. Slides are 48 hours before the start of class. Instructor will pick one to three groups to present and guide the discussion.

To prepare for our class discussion please read:

[Fewer Immigrants Mean More Jobs? Not so, Economists Say](#), *New York Times*

[Why Tom Cotton’s Immigration Idea Makes no Sense](#). *Washington Post*, April 28, 2020.

[“Sharp Cuts in Immigration Threaten US Economy and Innovation.”](#)*New York Times*, October 11, 2019.

Further readings:

1. Moser, Petra, Alessandra Voena, and Fabian Waldinger, “German Jewish Émigrés and U.S. Invention” *American Economic Review*, 2015 <http://ssrn.com/abstract=1910247>.
2. Moser, Petra and Shmuel San [Immigration, Science, and Invention. Evidence from the Quota Acts](#) (with [Shmuel San](#)). [Slides](#) Coverage [WSJ](#), and [Behavioral Scientist](#).
3. George J. Borjas, Kirk B. Doran, “The Collapse of the Soviet Union and the Productivity of American Mathematicians” *Quarterly Journal of Economics*, 2012 <http://papers.nber.org/papers/W17800>
4. Clemens, Michael A. Ethan G. Lewis, and Hannah Postel. [Immigration Restrictions as Active Labor Market Policy: Evidence from the Mexican Bracero Exclusion](#) (*American Economic Review* 108 (6) June 2018, pp. 1468-87. [VoxEU](#). [The Economist](#), [The Wall Street Journal](#), [Associated Press](#), [The New York Times](#), [Newsweek](#), [Bloomberg](#).

12 –Course Wrap-up

December 17

Course wrap-up. Content TBD during the course of the term. Please note that we will not have a final exam. Instead your grade is determined by 20% participation, 40% four memos and 40% two group projects, per our schedule.