

## ECONOMICS 140: ECONOMICS OF HEALTH PRODUCERS

Winter 2024

Tue and Thurs 2:00-3:20pm (PODEM 1A22)

*Professor:* Jeffrey Clemens

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**Office Hours:** Thursdays from 9:30am-10:30am. Also available by appointment.

*Teaching Assistant*

(1) Yashna Nandan (Office hour Tues. 4-5pm in Atkinson 3803) e-mail: [ynandan@ucsd.edu](mailto:ynandan@ucsd.edu)

**Professor Clemens will hold office hours in Atkinson 6310. Yashna will hold office hours in Atkinson 3803. If circumstances require it, office hours will be held via Zoom.**

Prerequisites: Econ 2 OR 100B

*Course Objectives:* This course applies microeconomic theory to markets for health care goods and services, with a focus on the supply side of the health sector (physicians, nurses, hospitals, and pharmaceutical manufacturers). We will examine where markets work efficiently and where it may be possible for government intervention to improve efficiency. We will use microeconomic models to analyze how reform proposals affect the incentives facing health care providers and the outcomes that are realized in health care markets. Where possible, we will examine empirical research that tests the predictions from economic models.

Note: Econ 141 focuses on the consumer side of health care markets: the demand for health and medical care, the demand for health insurance, proposals to address the uninsured, employer provision of health insurance, and international comparisons of health systems.

After passing this class you will be able to:

1. Apply microeconomics to the study of suppliers in healthcare markets.
2. Analyze current policy issues in the U.S. healthcare system from an economic perspective. Our focus will be on policy issues associated with how Medicare, Medicaid, and private insurance plans pay healthcare providers, although we will also discuss health policy issues related to redistribution and social insurance.

*Assessment:* Your course grade will be based on a set of written assignments and three exams. Written assignments will account for 10% of your grades and each exam will account for 30% of your grade. I reserve flexibility to adjust the weights on each of these components in case it becomes necessary to adapt due to considerations with impactful implications for academic integrity, public health, or other unforeseen circumstances. If attendance becomes insufficient to sustain valuable in-class discussions, I reserve the right to add a participation component that will offset some of the weight placed on midterms 1 and 2.

*Exam Schedule (Both Sections):*

Midterm 1: February 6<sup>th</sup> (2:00-3:20pm; in class; 30% of grade)

Midterm 2: February 29<sup>th</sup> (2:00-3:20pm; in class; 30% of grade)

Final Exam: March 21<sup>st</sup> (3:00-6:00pm; 30% of grade)

*Course Materials:*

*Optional Textbook:* Sherman Folland, Allen C. Goodman, and Miron Stano. “The Economics of Health and Health Care” Publisher: Pearson Education, Inc. 2013. 7<sup>th</sup> Edition.

*Canvas:* This is where you access the syllabus, additional required articles, problems sets, your grades, a discussion board, announcements regarding review sessions and supplemental office hours, etc.

*Additional Resources:*

- Cutler, David M. Your money or your life: Strong medicine for America's health care system. Oxford University Press, 2005.
- I recommend the “What the Health?” podcast from Kaiser Health News: <https://khn.org/news/tag/podcast/>
- The A16Z podcast covers a wide variety of tech issues. When they discuss health care applications, the content is often fascinating: <https://a16z.com/a16z-podcast/>
- Our World in Data: <https://ourworldindata.org/>
- The optional textbook is intended primarily for background material. Much of this material, for example key facts on how much money we spend on health care, how much is spent by Medicare, how much goes to hospitals, etc., can be found using google. The website of the Kaiser Family Foundation is a great resource for these and many other background facts: <https://www.kff.org/>

*Practice Problem Sets:* Typically posted on Friday, with solutions available on *Canvas* late in the following week. These will be useful for exam preparation, but will not be graded.

*Additional Review Materials:* Practice midterms and any additional practice exam questions will be posted on *Canvas* prior to the weekend preceding each exam.

*Administrative Issues:*

- (1) If you believe an exam has not been graded properly, you may ask for a re-grade. We will re-grade your entire exam. The re-graded score will be your grade for the exam. You may not ask for another re-grade or go back to your first grade. To help maintain the integrity of the midterms and finals, we will require you to show your student IDs during your exam.
- (2) Any student found responsible for violating academic integrity will earn a failing grade for the course. In addition to the academic sanction that I impose, the Council of Deans of Student Affairs will impose a disciplinary penalty. For a review of UCSD policy, please see <https://senate.ucsd.edu/Operating-Procedures/Senate-Manual/appendices/2>.
- (3) If you have a documented disability, please bring your documentation and come to talk to me as soon as possible so that I can make suitable accommodations for you. If you believe that you may have a disability and will desire accommodation, please register with the Office for Students with Disabilities, Building 202 University Center.

**Concise Course Overview:**

**Lectures 1 and 2:** Introduction: Why Study Markets for Health Care Services; What Makes Health Service Markets Unique? Review of Key Concepts from Microeconomics

**Lectures 3 and 4:** Overview of the Physician Landscape; How Do Physicians Respond to Incentives and How Should We Pay Them?

**Lectures 5 and 6:** Continuation of Physician Payment

**Lecture 7:** Economics of the Affordable Care Act

**Lecture 8:** Review (Prof. Clemens Out of Town)

**Midterm 1 in class on February 6<sup>th</sup>**

**Lectures 9, 10 and 11:** The Hospital Sector (Background, Models and Empirical Analyses)

**Lectures 12 and 13:** Economics of Health Systems (Cost benefit analysis, preventive screenings, and managing systemwide incentives)

**Lecture 14** Introduction to the Pharmaceutical Sector

**Midterm 2 in class on February 29<sup>th</sup>**

**Lectures 15 and 16:** Economics of Medical Innovation

**Lectures 17 and 18:** Continuation of Medical Innovation; Final Review

**Final Exam: Thursday March 21st 3:00-6:00pm**

## Lectures 1 and 2:

### Introduction: Why Study Markets for Health Care Services; What Makes Health Service Markets Unique?

#### Primary Topics:

Overview of the Health Care Landscape  
Review of Consumer Demand  
Being Comfortable with Cost-Benefit Analysis  
Why We Buy Health Care through Insurance  
Review of Supply by Competitive Firms (Physicians?)  
The Decision to Become a Physician

#### Relevant Textbook Chapters:

Chapter 1 (Overview)

Chapter 2 (Microeconomics Review)

#### Additional General Interest Materials:

- Victor R. Fuchs, "Health Care Is Different—That's Why Expenditures Matter," *JAMA*. 303.18 (2010): 1859-1860. (Available on pages 21-23 at <https://jamanetwork.com/journals/jama/fullarticle/185819>)
- Baicker, Katherine, and Amitabh Chandra. "Myths and misconceptions about US health insurance." *Health Affairs* 27.6 (2008): w533-w543. (Available here: <https://www.healthaffairs.org/doi/10.1377/hlthaff.27.6.w533>)
- \*Cutler, David M., and Dan P. Ly. "The (paper) work of medicine: understanding international medical costs." *The Journal of Economic Perspectives* 25.2 (2011): 3-25. (Available here: <http://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.2.3>)
- Gottlieb, Joshua, and Avi Zenilman. "When Nurses Travel: Labor Supply Elasticity During COVID-19 Surges." <https://bfi.uchicago.edu/wp-content/uploads/2020/11/When-Nurses-Travel.pdf>
- \*Ateev Mehrotra, Michael Chernew, David Linetsky, Hilary Hatch, David Cutler, and Eric C. Schneider. "The Impact of COVID-19 on Outpatient Visits in 2020: Visits Remained Stable, Despite a Late Surge in Cases." *The Commonwealth Fund*. FEBRUARY 22, 2021. <https://www.commonwealthfund.org/publications/2021/feb/impact-covid-19-outpatient-visits-2020-visits-stable-despite-late-surge>
- \* Michael Chernew, David Cutler, and Shivani A. Shah. "Reducing Health Care Spending: What Tools Can States Leverage?" *The Commonwealth Fund*. AUGUST 18, 2021. <https://www.commonwealthfund.org/publications/fund-reports/2021/aug/reducing-health-care-spending-what-tools-can-states-leverage>
- Dattani, Saloni. 2024. "Seven things you didn't know about life expectancy." <https://www.scientificdiscovery.dev/p/19-seven-things-you-didnt-know-about>

## **Lectures 3 and 4:**

### **How Do Physicians Respond to Incentives and How Should We Pay Them?**

#### **Primary Topics:**

Overview of the Landscape  
The Decision to Become a Physician  
Choice of Specialty and Where to Practice  
The Physicians' Utility Function  
A Model of Optimal Payment Policy: Salary vs. Fee-For-Service  
Complications for Payment Policy  
How Does Medicare Stack Up?  
Paying for Capital and Technology Intensive Services

#### **Relevant Textbook Chapters:**

**Chapter 16 (pp. 325-329; 339-341)**

#### **Additional General Interest Materials:**

- DeZee KJ, Maurer D, Colt R, Shimeall W, Mallory R, Powers J, Durning SJ. "Effect of financial remuneration on specialty choice of fourth-year U.S. medical students." Acad Med. 2011 Feb; 86(2):187-93. (Available here: <http://www.ncbi.nlm.nih.gov/pubmed/21169785>)
- Mark Hogland. "How Does Your Doctor Get Paid?" (Available here: <http://www.pbs.org/wgbh/pages/frontline/shows/doctor/care/capitation.html>)
- \* Jeffrey Clemens. "Implications of Physician Ethics, Billing Norms, and Service Cost Structures for Medicare's Fee Schedule." (Available here: [https://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2331103](https://papers.ssrn.com/sol3/papers.cfm?abstract_id=2331103))

#### **Relatively Technical Readings:**

- American Medical Association. "CPT® Evaluation and Management." Current. (Available here: <https://www.ama-assn.org/practice-management/cpt/cpt-evaluation-and-management>)
  - Note: This link will take you to resources provided by the American Medical Association to guide physicians through the details of documenting and billing for Evaluation and Management Services. It provides a taste for the complexity of Medicare's billing guidelines.

## Lectures 5 and 6

### Optimal Physician Payment; Quality Control; Empirical Evidence on Physician Payment; Assessing the Target Income and Cost-Shifting Hypotheses

#### Primary Topics:

Wrap-up Model of Optimal Payment Policy (Malpractice; Bonus Systems)  
Empirical Evidence  
Medicare's Influence on Private Payment Systems  
The Cost-Shifting Hypothesis  
Supplier-Induced-Demand  
The Target Income Hypothesis

#### Relevant Textbook Chapters:

Chapter 15 (Physicians' Practices)

#### Relatively Technical Readings:

- McGuire, Thomas G., and Mark V. Pauly. "Physician response to fee changes with multiple payers." *Journal of health economics* 10.4 (1991): 385-410. (Available here: <http://www.sciencedirect.com/science/article/pii/016762969190022F>)
  - Focus on the Introduction and Section 4. The remaining sections are quite technical.
- Clemens, Jeffrey, and Joshua Gottlieb. "Do Physicians' Financial Incentives Affect Medical Treatment and Patient Health?" (2014). (Available here: [http://papers.ssrn.com/sol3/papers.cfm?abstract\\_id=2101251](http://papers.ssrn.com/sol3/papers.cfm?abstract_id=2101251)).
  - Focus on the Introduction and Section 1. The introduction describes the paper's findings. Section 1 provides some detail regarding how Medicare pays physicians.
- Clemens, Jeffrey, Joshua Gottlieb, and Timea Molnar. "Do Health Insurers Innovate? Evidence from the Anatomy of Physician Payments" (2014). (Link: [http://econweb.ucsd.edu/~j1clemens/pdfs/pricingrelationships\\_jhe\\_R2](http://econweb.ucsd.edu/~j1clemens/pdfs/pricingrelationships_jhe_R2)).
  - The Introduction and Section 1 are again the most relevant sections for class.
- Cabral, Marika, Colleen Carey, and Sarah Miller. The Impact of Provider Payments on Health Care Utilization of Low-Income Individuals: Evidence from Medicare and Medicaid. No. w29471. National Bureau of Economic Research, 2021. (Link: <https://www.nber.org/papers/w29471>)
  - Additional recent research on the effects of financial incentives on the supply of medical care.
- Shi, Maggie. "Monitoring for Waste: Evidence from Medicare Audits." *Quarterly Journal of Economics*. Forthcoming (Link: [https://mshi311.github.io/website2/Shi\\_MedicareAudits\\_2023\\_09\\_09\\_main.pdf](https://mshi311.github.io/website2/Shi_MedicareAudits_2023_09_09_main.pdf))
  - Additional recent research on the effects of financial incentives on the supply of medical care, with emphasis on the effects of audits for waste.

## **Lecture 7**

### **Economics of the Affordable Care Act**

#### **Primary Topics:**

The Affordable Care Act  
Economics of Adverse Selection

#### **Relatively Technical Readings:**

- Rothschild, Michael, and Joseph Stiglitz. "Equilibrium in competitive insurance markets: An essay on the economics of imperfect information." *Uncertainty in economics*. Academic Press, 1978. 257-280.  
<http://www.eco.uc3m.es/~mmachado/Teaching/HealthPhD/RothchildStiglitz.pdf>
- Einav, Liran, and Amy Finkelstein. "Selection in insurance markets: Theory and empirics in pictures." *Journal of Economic Perspectives* 25.1 (2011): 115-38.  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/jep.25.1.115>
- Clemens, Jeffrey. "Regulatory redistribution in the market for health insurance." *American Economic Journal: Applied Economics* 7.2 (2015): 109-34.  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/app.20130169>
- Hackmann, Martin B., Jonathan T. Kolstad, and Amanda E. Kowalski. "Adverse selection and an individual mandate: When theory meets practice." *American Economic Review* 105.3 (2015): 1030-66.  
<https://pubs.aeaweb.org/doi/pdfplus/10.1257/aer.20130758>

## **Lecture 8: Review**

### **Midterm in Class February 6<sup>th</sup>**

## Lecture 9

### Introduction to Hospitals; Health Care Providers with Market Power; Economics of Non-Profit Firms

#### Primary Topics:

Overview of Hospital Sector  
Organizational Structure of Hospitals  
Suppliers with Market power (Monopoly and Monopsony)  
What Motivates Hospitals?  
    Kindly Non-Profits?  
    Empire Building?  
    Empirical Evidence on Hospital Behavior

#### Relevant Textbook Chapters:

Chapter 14 (pp. 283-293, Hospital Overview)

#### Relatively Technical Readings:

- Newhouse, Joseph P. "Toward a theory of nonprofit institutions: An economic model of a hospital." *The American economic review* 60.1 (1970): 64-74.  
[https://www.jstor.org/stable/1807855?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/1807855?seq=1#metadata_info_tab_contents)
- Pauly, Mark, and Michael Redisch. "The not-for-profit hospital as a physicians' cooperative." *The American Economic Review* 63.1 (1973): 87-99.  
[https://www.jstor.org/stable/1803128?seq=1#metadata\\_info\\_tab\\_contents](https://www.jstor.org/stable/1803128?seq=1#metadata_info_tab_contents)
- Gross, Tal, Adam Sacarny, Maggie Shi, and David Silver. "Regulated Revenues and Hospital Behavior: Evidence from a Medicare Overhaul." *Review of Economics and Statistics* (2022): 1-26. (Link:  
[https://direct.mit.edu/rest/article/doi/10.1162/rest\\_a\\_01254/113171/Regulated-Revenues-and-Hospital-Behavior-Evidence](https://direct.mit.edu/rest/article/doi/10.1162/rest_a_01254/113171/Regulated-Revenues-and-Hospital-Behavior-Evidence))
  - A paper on hospital responses to changes in financial incentives.



## Lectures 10 and 11:

### More on the Economics of the Hospital Sector

#### Primary Topics:

- Financing Hospital Care for the Uninsured
- Hospital Behavior in the Real World
- How Should We Pay Hospitals (Returning to our Model of Provider Behavior)

#### Relevant Textbook Chapters:

##### Chapter 13 (Economics of Non-Profit Firms)

#### Additional General Interest Materials:

- \* Brill, Steven. "Bitter pill: why medical bills are killing us." *Special report TIME magazine*, (Mar. 04, 2013) (2013). (Available here: <https://www.americanpatient.org/wp-content/uploads/2017/07/Bitter-Pill.pdf>)
  - Read through at least 2 of the anecdotes to get a flavor for the article.

#### Relatively Technical Readings:

- Duggan, Mark. "Hospital ownership and public medical spending." *Quarterly Journal of Economics*. 15(4): 1343-1373. 2000.
- Dafny, Leemore S. *How do hospitals respond to price changes?*. *American Economic Review*. 95(5):1525-1547. 2005. (Available here: <http://www.ingentaconnect.com/content/aea/aer/2005/00000095/00000005/art00009>)
- Cooper, Zack, Fiona Scott Morton, and Nathan Shekita. "Surprise! Out-of-Network Billing for Emergency Care in the United States." No. w23623. National Bureau of Economic Research, 2017. (Available here: [http://isps.yale.edu/sites/default/files/publication/2017/07/surpriseoutofnetwrokbilling\\_isps17-22.pdf](http://isps.yale.edu/sites/default/files/publication/2017/07/surpriseoutofnetwrokbilling_isps17-22.pdf))
- Clemens, Jeffrey, and Benedic Ippolito. Uncompensated Care and the Collapse of Hospital Payment Regulation: An Illustration of the Tinbergen Rule. No. w23758. National Bureau of Economic Research, 2017. (Available here: <http://www.nber.org/papers/w23758>)

## Lectures 12 and 13: Economics of Health Systems

### Primary Topics:

Systemwide Cost-Benefit Analyses  
The “Statistical Value of Life”  
Preventive Care and the Economics of Testing/Screening

### Additional General Interest Materials:

- \*Paul Romer. Appearance on the *Econtalk* Podcast. May 15, 2020.  
<https://www.econtalk.org/paul-romer-on-the-covid-19-pandemic/>
- \*Laurence J. Kotlikoff and Michael Mina. “A Cheap, Simple Way to Control the Coronavirus.” *New York Times*. July 3, 2020.  
<https://www.nytimes.com/2020/07/03/opinion/coronavirus-tests.html>
- Clemens, Jeffrey, Philip Hoxie, John Kearns, and Stan Veuger. "How Did Federal Aid to States and Localities Affect Testing and Vaccine Delivery?" *Journal of Public Economics* 225 (2023): 104972.  
<https://www.sciencedirect.com/science/article/pii/S0047272723001548>
- U.S. Preventive Care Task Force. “Final Recommendation Statement Breast Cancer: Screening.” January 11, 2016.  
<https://www.uspreventiveservicestaskforce.org/uspstf/recommendation/breast-cancer-screening>
- \*Aaron Carroll. “New Screening Guidelines Won’t Assure Fewer Mammograms.” October 23, 2015.  
<https://theincidentaleconomist.com/wordpress/new-screening-guidelines-wont-assure-fewer-mammograms/>

### Relatively Technical Readings:

- Gupta, Atul. "Impacts of performance pay for hospitals: The readmissions reduction program." *American Economic Review* 111.4 (2021): 1241-83. (Available here: <https://www.aeaweb.org/articles?id=10.1257/aer.20171825>)
- Becker, Gary and Julio Elias, “Introducing Incentives in the Market for Live and Cadaveric Organs,” *Journal of Economic Perspectives*, Vol 21. No. 3, Summer 2007, p. 3-24. (Available here: <http://www.aeaweb.org/articles.php?doi=10.1257/jep.21.3.3&title=>)

## **Lectures 14:**

### **Intro to the Pharmaceutical Sector**

#### **Primary Topics:**

The Advance of Health Care Innovation  
Health Gains  
Rising Costs  
The Pharmaceutical Pipeline  
The “Public Goods” Problem

#### **Relevant Textbook Chapters:**

**Chapter 17 (Pharmaceuticals Overview)**  
**Chapter 6 (pp. 121-126, Medical Technology Overview)**

#### **Additional General Interest Materials:**

- \*Michael Kremer Webinar. “Encouraging the development and manufacturing of vaccines and diagnostics.” May 1, 2020.  
[https://www.youtube.com/watch?v=C8W8JQLTECc&ab\\_channel=PrincetonEconomics](https://www.youtube.com/watch?v=C8W8JQLTECc&ab_channel=PrincetonEconomics)
- \*Susan Athey, Michael Kremer, Christopher Snyder and Alex Tabarrok. “In the Race for a Coronavirus Vaccine, We Must Go Big. Really, Really Big.” *New York Times*. May 4, 2020. <https://www.nytimes.com/2020/05/04/opinion/coronavirus-vaccine.html>
- Kremer, Michael. "Pharmaceuticals and the developing world." *The Journal of Economic Perspectives* 16.4 (2002): 67-90. (Available here: <http://www.jstor.org/stable/3216915>)

**Midterm in Class on February 29<sup>th</sup>**

## Lectures 15 and 16: Medical Innovation Continued

### Primary Topics:

Pharmaceutical Innovation  
    The Decision to Invest in R&D  
    Patent Law and Monopoly Pricing  
    Drugs for Developing Countries  
The Difficulty of Evaluating Technology Policy  
Innovation in Medical Equipment and Devices

### Additional General Interest Materials:

- \*Clemens, Jeffrey. "How the Civil War drove medical innovation – and the pandemic could, too." *The Conversation*. September 8, 2020.  
<https://theconversation.com/how-the-civil-war-drove-medical-innovation-and-the-pandemic-could-too-144181>
- Roberts, EDWARD B. "Technological innovation and medical devices." *New medical devices: invention, development, and use* (1988): 35-51.
  - This article appears as a chapter in a book. The relevant pages (35-51) can be accessed via google books by searching for the article title from the "Google Scholar" home page. The chapter provides an excellent discussion of what medical device innovation looks like and how it differs from pharmaceutical innovation.

### Relatively Technical Readings:

- Clemens, Jeffrey and Parker Rogers. "Demand Shocks, Procurement Policies, and the Nature of Medical Innovation: Evidence from Wartime Prosthetic Device Patents." *Review of Economics and Statistics*. Forthcoming.  
<https://econweb.ucsd.edu/~jlclemens/pdfs/ProstheticsPaperLatest>
- Cutler, David M., Allison B. Rosen, and Sandeep Vijan. "The value of medical spending in the United States, 1960–2000." *New England Journal of Medicine* 355.9 (2006): 920-927. (Available here:  
<http://www.nejm.org/doi/full/10.1056/NEJMsa054744>)

## Lectures 17 and 18: Medical Innovation Continued; Final Review

### Primary Topics:

Empirical Evidence on Innovation  
Pharmaceutical Sector  
Medical Equipment  
Payment Policy and the Nature of Innovation  
  
Final Review

### Additional General Interest Materials:

- \*Department of Health and Human Services. "Fact Sheet: Explaining Operation Warp Speed." 2020. <https://www.nihb.org/covid-19/wp-content/uploads/2020/08/Fact-sheet-operation-warp-speed.pdf>
- \*Congressional Research Service. "Operation Warp Speed Contracts for COVID-19 Vaccines and Ancillary Vaccination Materials" March 2021. <https://crsreports.congress.gov/product/pdf/IN/IN11560>

### Relatively Technical Readings:

- Finkelstein, Amy. "Static and dynamic effects of health policy: Evidence from the vaccine industry." *Quarterly Journal of Economics* 119.2 (2004): 527-564. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.932.6628&rep=rep1&type=pdf>
- Blume-Kohout, Margaret E., and Neeraj Sood. "Market size and innovation: Effects of Medicare Part D on pharmaceutical research and development." *Journal of Public Economics* 97 (2013): 327-336. <https://www.sciencedirect.com/science/article/abs/pii/S0047272712001119>
- Acemoglu, Daron, and Joshua Linn. "Market size in innovation: theory and evidence from the pharmaceutical industry." *Quarterly Journal of Economics* 119.3 (2004): 1049-1090. <https://academic.oup.com/qje/article-abstract/119/3/1049/1938820>
- Budish, Eric, Benjamin N. Roin, and Heidi Williams. "Do firms underinvest in long-term research? Evidence from cancer clinical trials." *American Economic Review* 105.7 (2015): 2044-85. [https://sites.duke.edu/collardwexler/files/2015/01/budish\\_williams.pdf](https://sites.duke.edu/collardwexler/files/2015/01/budish_williams.pdf)
- Yin, Wesley. "Market incentives and pharmaceutical innovation." *Journal of Health Economics* 27.4 (2008): 1060-1077. [https://luskin.ucla.edu/sites/default/files/download-pdfs/ODA\\_innovation.pdf](https://luskin.ucla.edu/sites/default/files/download-pdfs/ODA_innovation.pdf)
- Agha, Leila, Soomi Kim, and Danielle Li. "Insurance design and pharmaceutical innovation." *American Economic Review: Insights* 4, no. 2 (2022): 191-208. <https://www.aeaweb.org/articles?id=10.1257/aeri.20210063>

**Final Exam: Thursday March 21<sup>st</sup> from 3:00-6:00pm**