

Economics of Innovation

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This course aims to provide a comprehensive overview of frontier research, covering both topics and methods, in the economics of innovation.

Topics

1. The Economics of Innovation
 - (a) The Economics of Ideas
 - (b) Measurement
 - (c) Human Capital and Innovation
 - (d) Incentives, Institutions, and Organizations
2. Innovation and Inequality
3. Green Innovation
4. Innovation Spillovers and Diffusion

Evaluation

The final grade will consist of three components: 25% in-class presentation (a paper of choice among those in the reading list), 25% take-home assignment (a referee report), 50% exam. The exam will consist in open-ended questions related to the topics and papers discussed during the course.

Reading List¹

1. The Economics of Innovation
 - (a) The Economics of Ideas

¹Check the course syllabus for the most updated version.

- Arrow, K. (1962). “Economic Welfare and the Allocation of Resources for Invention.” In *The Rate and Direction of Inventive Activity: Economic and Social Factors*, Princeton University Press.
- Bloom, N., C. I. Jones, J. Van Reenen, and M. Webb (2020). “Are Ideas Getting Harder to Find?” *American Economic Review*, 110(4):1104–44.
- Bloom, N., J. Van Reenen, and H. L. Williams (2019). “A Toolkit of Policies to Promote Innovation.” *Journal of Economic Perspectives*, 33(3):163–84.
- Bryan, K. A., and H. L. Williams (2021). “Innovation: Market Failures and Public Policies.” In *Handbook of Industrial Organization*. Vol. 5, 281–388. Elsevier.
- Jones, B. F., and L. H. Summers (2022). “A Calculation of the Social Returns to Innovation.” In *Innovation and Public Policy*, University of Chicago Press.
- Jones, C. I. (2005). “Growth and Ideas.” *Handbook of Economic Growth 1B*: 1063–1111.
- Romer, P. M. (1990). “Endogenous Technological Change.” *Journal of Political Economy*, 98(5):S71–S102.
- Romer, P. M. (1994). “The Origins of Endogenous Growth.” *Journal of Economic Perspectives*, 8(1):3–22.

(b) Measurement

- Bergeaud, A., and C. Verluise (2024). “A New Dataset to Study a Century of Innovation in Europe and in the US.” *Research Policy* 53(1): 104903.
- Berkes, E. (2018). “Comprehensive Universe of US Patents (CUSP): Data and Facts.” Working paper.
- Griliches, Z. (1990). “Patent Statistics as Economic Indicators: A Survey.” *Journal of Economic Literature* 28(4): 1661-1707.
- Jaffe, A. B., M. Trajtenberg, and R. Henderson (1993). “Geographic Localization of Knowledge Spillovers as Evidenced by Patent Citations.” *The Quarterly Journal of Economics* 108(3): 577–98.
- Kelly, B., D. Papanikolaou, A. Seru, and M. Taddy (2021). “Measuring Technological Innovation over the Long Run.” *American Economic Review: Insights*, 3(3):303–20.
- Kogan, L., D. Papanikolaou, A. Seru, and N. Stoffman (2017). “Technological Innovation, Resource Allocation, and Growth.” *The Quarterly Journal of Economics* 132(2), 665–712.
- Marx, M., and A. Fuegi (2020). “Reliance on Science: Worldwide Front-page Patent Citations to Scientific Articles.” *Strategic Management Journal*, 41(9): 1572–1594.
- Marx, M., and A. Fuegi (2022). “Reliance on Science by Inventors: Hybrid Extraction of In-text Patent-to-article Citations.” *Journal of Economics & Management Strategy*, 31(2): 369–392.
- Moser, P. (2012). “Innovation Without Patents: Evidence from World’s Fairs.” *The Journal of Law and Economics* 55(1): 43-74.
- Moser, P. (2016). “Patents and Innovation in Economic History.” *Annual Review of Economics* 8(1): 241-258.
- Trajtenberg, M. (1990). “A Penny for Your Quotes: Patent Citations and the Value of Innovations.” *The RAND Journal of Economics*, 172–187.

(c) Human Capital and Innovation

- Bell, A., R. Chetty, X. Jaravel, N. Petkova, and J. Van Reenen (2019). “Do Tax Cuts Produce More Einsteins? The Impacts of Financial Incentives versus Exposure to Innovation on the Supply of Inventors.” *Journal of the European Economic Association*, 17(3): 651–677.
- Bell, A., R. Chetty, X. Jaravel, N. Petkova, and J. Van Reenen (2019). “Who Becomes an Inventor in America? The Importance of Exposure to Innovation.” *The Quarterly Journal of Economics*, 134(2): 647–713.
- Biasi, B., and S. Ma (2023). “The Education-Innovation Gap.” Working Paper.
- Galenson, D. W., and B. A. Weinberg (2000). “Age and the Quality of Work: The Case of Modern American Painters.” *Journal of Political Economy*, 108(4): 761–777.
- Jones, B. F. (2009). “The Burden of Knowledge and the ‘Death of the Renaissance Man’: Is Innovation Getting Harder?” *Review of Economic Studies*, 76(1): 283–317.
- Waldinger, F. (2016) “Bombs, brains, and science: The role of human and physical capital for the creation of scientific knowledge.” *Review of Economics and Statistics* 98 (5): 811-831.
- Wuchty, S., B. F. Jones, and B. Uzzi (2007). “The Increasing Dominance of Teams in Production of Knowledge.” *Science*, 316(5827): 1036–1039.

(d) Incentives, Institutions, and Organizations

- Aghion, P., M. Dewatripont, and J. C. Stein (2008). “Academic Freedom, Private-sector Focus, and the Process of Innovation.” *The RAND Journal of Economics* 39(3), 617–635.
- Aghion, P., J. Van Reenen, and L. Zingales (2013). “Innovation and Institutional Ownership.” *American Economic Review* 103(1): 277–304.
- Akcigit, U., S. Baslandze, and S. Stantcheva (2016). “Taxation and the International Mobility of Inventors.” *American Economic Review* 106(10), 2930–2981.
- Akcigit, U., J. Pearce, and M. Prato (2024). “Tapping into Talent: Coupling Education and Innovation Policies for Economic Growth.” *The Review of Economic Studies*.
- Andrews, M. J. (2023). “How Do Institutions of Higher Education Affect Local Invention? Evidence from the Establishment of US Colleges.” *American Economic Journal: Economic Policy*, 15(2): 1–41.
- Azoulay, P., J. Graff Zivin, and G. Manso (2011). “Incentives and Creativity: Evidence from the Academic Life Sciences.” *RAND Journal of Economics* 42(3): 527–554.
- Azoulay, P., C. Fons-Rosen, and J. S. Graff Zivin (2019). “Does Science Advance One Funeral at a Time?” *American Economic Review* 109(8): 2889–2920.
- Azoulay, P., J. S. Graff Zivin, D. Li, and B. N. Sampat (2019). “Public R&D Investments and Private-sector Patenting: Evidence from NIH Funding Rules.” *Review of Economic Studies* 86(1): 117–152.
- Bhaskarabhatla, A., L. Cabral, D. Hegde, and T. Peeters (2021). “Are Inventors or Firms the Engines of Innovation?” *Management Science* 67(6), 3899–3920.

- Budish, E., B. N. Roin, and H. L. Williams (2015). “Do Firms Underinvest in Long-Term Research? Evidence from Cancer Clinical Trials.” *American Economic Review* 105(7): 2044–2085.
- Furman, J., and S. Stern (2011). “Climbing Atop the Shoulders of Giants: The Impact of Institutions on Cumulative Knowledge Production.” *American Economic Review* 101(5): 1933–1963.
- Hill, R., and C. Stein (2025). “Race to the Bottom: Competition and Quality in Science.” *The Quarterly Journal of Economics* 140 (2): 1111-1185.
- Lerner, J., H. J. Manley, C. Stein, and H. Williams (2024). “The Wandering Scholars: Understanding the Heterogeneity of University Commercialization.” NBER Working Paper No. 32069.
- Moser, P., and T. Nicholas (2013). “Prizes, publicity and patents: Non-monetary awards as a mechanism to encourage innovation.” *The Journal of Industrial Economics* 61(3): 763-788.
- Myers, K. (2020). “The Elasticity of Science.” *American Economic Journal: Applied Economics* 12(4): 103–134.
- Nguyen, K.-T. (2025). “Trust and Innovation within the Firm: Evidence from Matched CEO–Firm Data.” Working Paper.
- Stern, S. (2004). “Do Scientists Pay to Be Scientists?” *Management Science* 50(6): 835–853.

2. Innovation and Inequality

- Aghion, P., U. Akcigit, A. Bergeaud, R. Blundell, and D. Hémous. “Innovation and Top Income Inequality.” *The Review of Economic Studies* 86, no. 1 (2019): 1-45.
- Einio, E., J. Feng, and X. Jaravel (2024). “Social Push and the Direction of Innovation,” Working Paper.
- Koning, R., S. Samila, and J.-P. Ferguson (2021). “Who Do We Invent For? Patents by Women Focus More on Women’s Health, but Few Women Get to Invent.” *Science*, 372(6548): 1345–1348.
- Moscona, J., and K. Sastry (2022). “Inappropriate Technology: Evidence from Global Agriculture.”, Working Paper.
- Koffi, M. (2025). “Innovative Ideas and Gender (In) Equality.” *American Economic Review* 115 (7): 2207-2236.
- Kline, P., N. Petkova, H. Williams, and O. Zidar (2019). “Who Profits from Patents? Rent-Sharing at Innovative Firms.” *The Quarterly Journal of Economics* 134(3): 1343-1404.
- Posch, M., J. Schulz, and J. Henrich (2024). “Surname Diversity, Social Ties and Innovation.” *Journal of Political Economy*.
- Truffa, F., and A. Wong (2025). “Undergraduate Gender Diversity and Direction of Scientific Research.” *American Economic Review* 115 (7): 2414–48
- Waldfogel, J. (2025). “The Welfare Effects of Gender-Inclusive Intellectual Property Creation: Evidence from Books,” *Journal of Political Economy* 133, no. 7.

3. Green Innovation

- Acemoglu, D. (2023). “Distorted Innovation: Does the Market Get the Direction of Technology Right?,” AEA Papers and Proceedings, vol 113, pages 1-28.
- Hemous, D. and Olsen, M. (2021). “Directed Technical Change in Labor and Environmental Economics,” Annual Review of Economics, 13:571–597.
- Dugoua, E. and Gerarden, T. (Forthcoming). “Induced innovation, inventors, and the energy transition,” American Economic Review: Insights.
- Aghion, P., Benabou, R., Martin, R., and Roulet, A. (2023). “Environmental Preferences and Technological Choices: Is Market Competition Clean or Dirty?,” American Economic Review: Insights, 5(1):1–19
- Moscona, J. (2021). “Environmental Catastrophe and the Direction of Invention: Evidence from the American Dust Bowl,” Working paper.

4. Innovation Spillovers and Diffusion

- Bloom, N., M. Schankerman, and J. Van Reenen (2013). “Identifying Technology Spillovers and Product Market Rivalry.” Econometrica 81(4): 1347-1393.
- Comin, D., and Hobijn, B. (2010). “An Exploration of Technology Diffusion.” American Economic Review 100(5): 2031–2059.
- Giorcelli, M. (2019). “The Long-Term Effects of Management and Technology Transfers.” American Economic Review 109(1): 121–152.
- Kalyani, A., N. Bloom, M. Carvalho, T. A. Hassan, J. Lerner, and A. Tahoun (2025). “The Diffusion of New Technologies.” The Quarterly Journal of Economics.
- Myers, K. R. and Lanahan, L. (2022). “Estimating Spillovers from Publicly Funded RD: Evidence from the US Department of Energy.” American Economic Review, 112(7):2393–2423.
- Prato, M. (2025). “The Global Race for Talent: Brain Drain, Knowledge Transfer, and Growth.” The Quarterly Journal of Economics 140(1): 165-238.