Matthew Grennan

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Employment

University of California, Berkeley, Haas School Robinson Chancellor's Chair Associate Professor of Economic Analysis & Policy (w/ tenure) Associate Professor of Entrepreneurship & Innovation	July 2022 – July 2021 – July 2021 –
University of Pennsylvania, Wharton School Assistant Professor of Health Care Management Visiting Assistant Professor of Health Care Management	July 2013 – June 2021 Jan 2013 – June 2013
University of Toronto, Rotman School of Management Assistant Professor of Strategic Management	July 2010 – June 2013
Other Professional Appointments and Editorial Service	
<i>Journal of Political Economy Microeconomics</i> Editor	Feb 2022 –
Robinson Life Science, Business, & Entrepreneurship Program, UC Berkele Faculty Co-Director	ey July 2021 –

Education

Ph.D., Strategy/Economics, *New York University, Stern School of Business*, September 2010 (Committee: John Asker, Adam Brandenburger, Allan Collard-Wexler, Michael Katz, Bernie Yeung)

M.S., Applied Economics, University of Minnesota, May 2005

B.S., Industrial Engineering, *Iowa State University*, May 2002

Research Areas

empirical industrial organization, health care, innovation, competitive strategy

Published and Forthcoming in refereed journals

(* denotes journal convention is to list authors alphabetically)

[1] Grennan, Matthew (2013). "Price Discrimination and Bargaining: Empirical Evidence from Medical Devices" American Economic Review, 103(1):145-177.

[2] Grennan, Matthew (2014). "Bargaining Ability and Competitive Advantage: Empirical Evidence from Medical Devices" *Management Science*, 60(12):3011-3025.

[3] Grennan, Matthew and Robert J. Town (2020)*. "Regulating Innovation with Uncertain Quality: Information, Risk, and Access in Medical Devices" American Economic Review, 110(1):120-161.

- Prior version available as NBER Working Paper 20981 (2015)
- PURC Prize for Best Paper in Regulatory Economics (2018)
- Wharton PPI, Knowledge@Wharton, LSE Business Review, AEA Research Blog, LDI Blog

[4] Grennan, Matthew and Ashley Swanson (2020)*. "Transparency and Negotiated Prices: The Value of Information in Hospital-Supplier Bargaining" *Journal of Political Economy*, 128(4):1234-1268.

- Prior version available as NBER Working Paper 22039 (2016)
- <u>NYTimes</u>, <u>LDI</u>, <u>Knowledge@Wharton</u>

[5] Craig, Stuart, Matthew Grennan, and Ashley Swanson (2021)*. "Mergers and Marginal Costs: New Evidence on Hospital Buyer Power" *RAND Journal of Economics*, *52*(1):151-178.

- Prior version available as NBER Working Paper 24926 (2018)
- NBER, Advisory Board, Modern Healthcare, Daily Caller, HealthLeaders, HealthcareDive

[6] Bergman, Alon, Matthew Grennan, and Ashley Swanson (2021)*. "Medical Device Firm Payments To Physicians Exceed What Drug Companies Pay Physicians And Target Surgical Specialists" *Health Affairs*, 40(4):603-612.

• <u>Stat</u>

[7] Grennan, Matthew, Gi Heung Kim, John McConnell, and Ashley Swanson (2022). "Hospital Management Practices and Medical Device Costs" *Health Services Research*, 57:(2) 227-236.

• Accompanying editorial: Schneller E, Abdulsalam Y. "Supply chain management and health services research: Aligning strange bedfellows." *Health Services Research* 57:223–226 2022.

[8] Grennan, Matthew, Kyle Myers, Ashley Swanson, and Aaron Chatterji (2024)*. "No Free Lunch? Welfare Analysis of Firms Selling Through Expert Intermediaries"

Accepted @ Review of Economic Studies.

- Subsumes "Physician Industry Interactions: Persuasion and Welfare" available as NBER Working Paper 24864 (2018)
- Penn LDI, The Fix, MarketWatch

Other articles (book chapters, etc.)

[9] Grennan, Matthew and Ashley Swanson (2022)*. "Bargaining in Healthcare Markets: Applications of Nash-in-Nash and Extensions" in <u>Bargaining: Current Research and Future</u> <u>Directions</u>, Emin Karagözoğlu and Kyle B. Hyndman, Eds. Springer International Publishing.

Working Papers with manuscripts / presentations available

[10] Grennan, Matthew, Charu Gupta, and Mara Lederman (2023)*. "Innovation and Crossmarket Spillovers in `Big' Firms"

• Subsumes "Firm Scope and Spillovers from New Product Innovation: Evidence from Medical Devices" available as NBER Working Paper 25183 (2018)

[11] Groenveldt, Peter, Joseph Martinez, Stuart Craig, Lin Yang, Andrea Segal, Matthew Grennan, Pinar Karaca-Mandic, Ashley Swanson, and Genevieve Kanter (2020). "Association of Cardiology Practice Vertical Integration and the Use of Cardiovascular Imaging"

[12] Grennan, Matthew, Gi Heung Kim, and Ashley Swanson (2020)*. "Diagnosing Price Dispersion: Demand, Bargaining, and Search in Hospital-Supplier Contracting"

[13] Bergman, Alon, Matthew Grennan, and Ashley Swanson (2022)*. "Lobbying Physicians: Payments from Industry and Hospital Spending on Medical Devices"

[14] Craig, Stuart, Matthew Grennan, Joseph Martinez, and Ashley Swanson (2020)*. "Using Machine Learning Methods to Predict Physician-Hospital Integration"

[15] Cooper, Zack, Stuart Craig, Matthew Grennan, Joseph Martinez, Fiona Scott Morton, and Ashley Swanson (2023)*. "Are Hospital "Vertical" Mergers with Physicians Anticompetitive?"

[16] Collard-Wexler, Allan, Matthew Grennan, Andrew Steck (2023)*. "Optimal Regulation of New Product Testing: The FDA vs. the Invisible Hand"

Selected Projects in progress

"Vertical Integration and Control: Evidence from Medical Technology" (with Stuart Craig, Joseph Martinez, and Ashley Swanson)

"M&A in Innovative Industries: Evidence from Medical Technology" (with Ashley Swanson and Thomas Wollman)

"Patents and Future Innovation: Combining Causal and Predictive Models" (with Ashley Swanson and Thomas Wollman)

Teaching Experience

Life Science Business & Entrepreneurship Capstone (6.7/7, UG, Berkeley Haas/MCB 2021-)

Data Analytics (6.5/7, MBA, Berkeley Haas 2022-)

Data Science for Leaders (6.8/7, Exec Ed, Berkeley Haas 2022-)

Health Care Entrepreneurship (UG, Wharton 2013-2020)

- Wharton Excellence in Teaching Award 2017
- Poets and Quants Top 50 Undergraduate Professor 2018

Management & Strategy in Medical Devices and Technology (MBA, Wharton 2016-2020)

Health Care Data & Analytics (MBA, Wharton 2018, 2020)

Health Care Marketing (MBA, Wharton 2013-15)

Health Care Economics (MBA, Indian School of Business 2012-14)

Entrepreneurship (UG, Toronto Rotman 2011-13)

• Excellence in Teaching 2011-13

Models and Methods (PhD, Toronto Rotman 2012-13)

<u>Honors</u>

Professional:

NIHCM Grant for "Physician Industry Ties and Medical Device Usage and Pricing" (2019, with Ashley Swanson)

NSF Grant for "Empirical Analysis of Business-to-Business Bargaining: Evidence from Hospital Input Markets" (2016-19, with Ashley Swanson)

PURC Prize for Best Paper in Regulatory Economics (IIOC 2018) for "Regulating Innovation with Uncertain Quality: Information, Risk, and Access in Medical Devices" (with Bob Town)

Poets & Quants Top 50 Undergraduate Business Professors (2018)

Excellence in Teaching Award: Wharton (2017); Toronto Rotman (2011, 2012, 2013)

Graduate: C.W. Nichols Fellowship (2009-10); Willensky Dissertation Fellowship (2009-10)

UG: Cardinal Key (Pres. 2001); Order of Omega (Pres. 2001); National Merit Scholar (1997-2001)

Professional Activities

Invited Seminar and Conference Presentations:

(c = conference invitation, presented by coauthor; d = conference discussant)

2024 (including scheduled): Chicago Harris, Purdue Economics, Indiana Kelley; **2023:** ASSA Annual Meetings (c,d), Utah WBEC (d), UCSD Economics, Georgia Terry, AHEC (c), Econometric Society LACEA/LAMES;

2022: IIOC (c), Bates White Life Sciences Conference (c), ASHEcon (c), Padova Contracting Workshop, Informa Antitrust West, Northwestern Antitrust Conference, Berkeley Public Health;
2021: ASSA Annual Meetings (c,d), Emory Economics, ASHEcon (d), Berkeley Economics;
2020: ASSA Annual Meetings (d), Berkeley Haas, Stanford GSB Marketing, Georgetown McDonough, Medtronic HE&O Research, Ohio State Economics;

2019: Federal Trade Commission, Utah Eccles, Utah Winter Business Economics Conference, London School of Economics, Analysis Group, IIOC, Wharton Technology & Innovation Conference (c), Strategy Science Conference (c), NYC Health Economics Day, Organizational Theory in Healthcare Conference, Rochester Simon, QME Conference;

2009-18: AoM Annual Meetings (x2), ASSA Annual Meetings (x3), AHEC (x2), ASHEcon (x2), Analysis Group Boston, Arizona Eller Economics, Atlanta Competitive Advantage Conference, Bates White Life Sciences Conference (x3), Bureau of Economic Analysis, Chicago Economics, CELS (d), Columbia Bargaining Conference (c), Columbia Economics, CRES Foundations of Strategy Conference (x2), Consortium for Cooperation and Competition, Cornell Economics, Cowles Structural Micro Conference, Dartmouth Winter IO Conference, Federal Trade Commission, FTC Micro Conference (x3), Georgia Tech Strategy, Georgia Terry Economics, Harvard Strategy, Harvard Strategy Conference (d), HEC Health Care IO Conference (d), HEC Montreal, HEC Montreal Summer IO Conference (x2), Houston/Rice Economics, IFS Vertical Markets Conference, Indian School of Business, iHEA, IIOC (x3), Johns Hopkins Economics, Kellogg Conference on Healthcare Markets (x2), LSE Economics, Maryland Economics, McGill Economics, Minnesota Carlson & Economics, NBER Health Care (x3), NBER IO (x3), NUS Strategy, NYU IO Day, NYU Stern Economics of Strategy Conference, Northwestern Kellogg, Penn Medicine Grand Rounds, Penn State Economics, Queens Business School, Queens Innovation Conference (x2), Rochester Simon, Stanford IO, Strategy Research Forum (x4), Tolouse, Toronto Rotman Strategy, Triangle Health Economics (x2), UNC Kenan-Flagler, UPenn Wharton Management, US Department of Justice, US Food & Drug Administration, Universidad de Chile, Utah WBEC, Wash U Olin, Wharton Corporate Strategy and Innovation Conference, Yale SOM & Economics (x3);

Peer Reviewer:

American Economic Review, AEJ: Applied, AEJ: Micro, AEJ: Policy, American Journal of Healthcare Economics, Austrian Science Fund, Econometrica, Economic Journal, Economics Letters, Health Affairs, Health Care: The Journal of Delivery Science and Innovation, International Economic Review, International Journal of Health Care Finance and Economics, International Journal of Industrial Organization, Journal of Health Economics, Journal of Industrial Economics, Journal of Political Economy, Journal of Public Economics, Management Science, National Academies, National Science Foundation, Quarterly Journal of Economics, RAND Journal of Economics, Review of Economic Studies, Review of Economics and Statistics, Strategic Management Journal, Strategy Science

Professional Affiliations:

American Economic Association, Econometric Society, National Bureau of Economic Research (HC and IO), American Society of Health Economists, International Health Economics Association, Academy of Management (BPS and TIM), Strategy Research Forum

Professional Service:

Editor, Journal of Political Economy – Microeconomics 2022-; International Industrial Organization Conference (IIOC) Program Committee 2019-2023; NBER Health Care Bootcamp faculty "Competition and Innovation in Health Economics" 2022; National Academies of Sciences, Engineering, and Medicine: Review Panel for "Committee on

Security of America's Medical Product Supply Chain" 2021; ASHEcon Program Chair for "Competition in Health Care and Health Insurance Markets" 2020; FTC Panel on "Estimating Markups (in High Fixed Cost Industries)" 2018; EDEN Doctoral Seminar on Competitive Strategy 2014,16

University Service:

Berkeley Co-Director, Robinson Life Science Business & Entrepreneurship Program 2021-; Berkeley EAP Retreat Co-organizer 2022-23; Wharton IT Committee 2019-21; Wharton MBA Executive Committee 2016-18; Wharton HCMG Recruitment 2015-17, 2020; Wharton HCMG PhD Admissions 2013-20; Wharton HCMG Preliminary Exam Writer 2013-18; Toronto Rotman Recruiting Committee 2011-12; Toronto Rotman Strategy Seminar Coordinator 2010-11; Toronto Rotman Strategy Preliminary Exam Writer 2011-13; Panel Facilitator: Penn M&T Summit 2018; Panel Speaker: Mack Institute 2016,17

Doctoral Student Advising:

Octavio Martinez, Toronto 2015 (committee) – INCAE Kyle Myers, Wharton 2017 (co-chair) – HBS (TOM); NBER Innovation Post-Doc Stuart Craig, Wharton 2021 (chair) – Wisconsin SoB (Risk & Insurance); Yale Economics Post-Doc Charu Gupta, Wharton 2021 (chair) – UCLA Anderson (Strategy) Post-Doc Joseph Martinez, Wharton 2022 (committee) – finishing dual MD at Penn Medicine

Post-Docs:

Alon Bergman, Wharton 2019-2022 – Asst. Prof. Penn Medicine and Wharton

Pre-Docs:

Gi Heung Kim, Wharton 2017-2019 – PhD program at Wharton, BEPP

MBA Student Advising:

Ani Vemprala, Penn 2014 (HIX); Hee-Won Kang, Penn 2014 (mHealth); Jinyong Lee, Penn 2017 (molecular diagnostics); Animesh Agarwal, Penn 2017 (medtech investing); Cyrus Perovian 2019 (prior authorization automation); Pat Shikani, Penn 2020 (The Airway Company); Jon Thierer, Penn 2021 (AI for PBMs) Nima Akhavein, Penn 2021 (bi-specific antibodies)

Undergraduate Student Advising:

Aaron Goldstein and William Duckworth, Penn 2014-16 (Fever Smart – *Winner, President's Innovation Prize 2016*); Shriya Mantry, Penn 2017 (senior project); Ikshita Singh, Penn 2017 (senior project); Shawn Srolovitz, Penn 2018 (senior project); Grace Nie, Penn 2020 (senior thesis)

Personal

Born 1979. Dixon, IL, United States (US citizen) Married to <u>Jillian (Popadak) Grennan</u>. Children Jorie (2015); Grant (2017); Franklin (2019) Hobbies: basketball, cooking (and eating), football (a.k.a. soccer), reading, travel