

# PIERRE AZOULAY

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## EMPLOYMENT:

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY, 2006-present Cambridge, MA  
Assistant Professor of Strategy (2006-2007)  
Zenon S. Zannetos (1955) Career Development Assistant Professor of Strategy (2007-2009)  
Zenon S. Zannetos (1955) Career Development Associate Professor of Strategy (2009-2011)  
Associate Professor of Strategy (with tenure, 2011-2015)  
International Programs Associate Professor of Management (2015-2016)  
International Programs Professor of Management (2016-present)  
Group Head, Technological Innovation, Entrepreneurship, and Strategy (2016-2019)

COLUMBIA UNIVERSITY, 2001-2006 New York, NY  
Assistant Professor of Management (2001-2005)  
Associate Professor of Management (2005-2006)

## OTHER AFFILIATION:

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NATIONAL BUREAU OF ECONOMIC RESEARCH, 2003-present Cambridge, MA  
Faculty Research Fellow, Productivity Program (2003-2011)  
Research Associate, Productivity, Innovation, & Entrepreneurship Program (2011-present)

## EDUCATION:

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MASSACHUSETTS INSTITUTE OF TECHNOLOGY Cambridge, MA  
Ph.D in Management, June 2001

MICHIGAN STATE UNIVERSITY, 1994 East Lansing, MI  
M.A. in Telecommunications

INSTITUT NATIONAL DES TÉLÉCOMMUNICATIONS, 1994 Evry, France  
Diplôme d'Études Supérieures de Gestion

LYCÉE SAINT LOUIS, 1988-1991 Paris, France  
Classes Préparatoires Scientifiques to the Grandes Écoles

## PUBLICATIONS:

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Self-Citation, Cumulative Advantage, and Gender Inequality in Science. *Sociological Science*. 7: 152-186, 2020 (with Freda B. Lynn). Also NBER Working Paper #26893.

Inside Job or Deep Impact? Using Extramural Citations to Assess Economic Scholarship. *Journal of Economic Literature* **58**(1): 3-52, 2020 (with Joshua Angrist, Glenn Ellison, Ryan Reed Hill, and Susan Feng Lu).

Age and High-Growth Entrepreneurship. *American Economic Review: Insights* **2**(1): 65-82, 2020 (with Benjamin Jones, J. Daniel Kim, and Javier Miranda).

Death of the Salesman, but not the Sales Force: How Interested Promotion Skews Scientific Valuation. *American Journal of Sociology*, **125**(3): 786-845, 2019 (with J. Michael Whalen and Ezra Zuckerman).

Does Science Advance One Funeral at a Time? *American Economic Review*, **109**(8): 2889-2920, 2019 (with Christian Fons-Rosen and Joshua S. Graff Zivin)

Public R&D Investments and Private Sector Patenting: Evidence from NIH Funding Rules. *Review of Economic Studies*, **86**(1): 117-152, 2019 (with Joshua Graff Zivin, Danielle Li, and Bhaven Sampat).

Status Spillovers: The Effect of Status-Confering Prizes on the Allocation of Attention. *Administrative Science Quarterly*, **63**(4): 819-847, 2018 (with Brian Reschke and Toby E. Stuart).

The Career Effects of Scandal: Evidence from Scientific Retractions. *Research Policy*, **46**(9): 1552-1569, 2017 (with Alessandro Bonatti and Joshua L. Krieger).

Economic Research Evolves: Fields and Styles. *AER: Papers & Proceedings*, **107**(5): 293-297, 2017 (with Joshua Angrist, Glenn Ellison, Ryan Hill, and Susan Lu).

The Applied Value of Public Investments in Biomedical Research. *Science*, **356**(6333), pp. 78-81, 2017 (with Danielle Li and Bhaven N. Sampat).

The Mobility of Elite Life Scientists: Professional and Personal Determinants. *Research Policy*, **46**(3), pp. 573-590, 2017 (with Ina Ganguli and Joshua Graff Zivin).

Social Influence Given (Partially) Deliberate Matching: Career Imprints in the Creation of Academic Entrepreneurs. *American Journal of Sociology*, **122**(4), pp. 1223-1271, 2017. (with Christopher Liu and Toby Stuart)

Retractions. *Review of Economics and Statistics*, **97**(5), pp. 1118-1136, 2015. Also National Bureau of Economic Research Working Paper #18499. (with Jeffrey L. Furman, Joshua L. Krieger and Fiona E. Murray)

Matthew: Effect or Fable? *Management Science*, **60**(1), pp. 92-109, 2014. Also National Bureau of Economic Research Working Paper #18625 (with Toby Stuart and Yanbo Wang).

Empirical Studies of the Diffusion of Scientific and Technological Knowledge: Some Methodological Considerations. *Economia e Politica Industriale – Journal of Industrial and Business Economics*, **39**(3), pp. 73-87, 2012.

Incentives and Creativity: Evidence from the Academic Life Sciences. *RAND Journal of Economics*, **42**(3), pp. 527-554, 2011. (with Gustavo Manso and Joshua Graff Zivin)

Nasty, Brutish, and Short: Embeddedness Failure in the Pharmaceutical Industry. *Administrative Science Quarterly*, **55**(3), pp. 472-507, 2010. (with Nelson P. Repenning and Ezra W. Zuckerman)

Superstar Extinction. *Quarterly Journal of Economics*, **125**(2), pp. 549-589, 2010.

(with Joshua Graff Zivin and Jialan Wang)

The Effect of Academic Patenting on the Rate, Quality, and Direction of (Public) Research Output. *Journal of Industrial Economics*, **57**(4), pp. 637-676, 2009. (with Waverly Ding and Toby Stuart)

The Anatomy of Medical School Patenting. *New England Journal of Medicine*, **357**(20), pp. 2049-2056, 2007. (with Bhaven Sampat and Ryan Michigan)

The Determinants of Faculty Patenting Behavior: Demographics or Opportunities? *Journal of Economic Behavior & Organizations*, **63**(4), pp. 599-623, 2007. (with Waverly Ding and Toby Stuart)

PublicationHarvester: An Open-Source Software Tool for Science Policy Research. *Research Policy*, **35**(7), pp. 970-974, 2006. (with Andrew Stellman and Joshua Graff Zivin)

Capturing Knowledge Within and Across Firm Boundaries: Evidence from Clinical Development. *American Economic Review*, **94**(5), pp. 1591-1612, 2004.

Consumption Externalities and Diffusion in Pharmaceutical Markets: Anti-Ulcer Drugs. *Journal of Industrial Economics*, **51**(2), pp. 243-270, 2003. (with Ernst Berndt and Robert Pindyck)

Do Pharmaceutical Sales Respond to Scientific Evidence? *Journal of Economics and Management Strategy*, **11**(4), pp. 551-594, 2002.

Entrepreneurs, Contracts, and the Failure of Young Firms. *Management Science*, **47**(3), pp. 337-358, 2001. (with Scott Shane)

## **WORKING PAPERS:**

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Immigration and Entrepreneurship in the United States. NBER Working Paper #27778 (with Benjamin Jones, J. Daniel Kim, and Javier Miranda).

Long-term Effects from Early Exposure to Research: Evidence from the NIH "Yellow Berets." NBER Working Paper #26069 (with Misty L. Heggeness and Wesley H. Greenblatt).

The Rise of For-Profit Experimental Medicine. NBER Working Paper #26892 (with Ariel Fishman).

Scientific Grant Funding. NBER Working Paper #26889 (with Danielle Li).

Medical Progress and Health Care Finance: Evidence from Academic Medical Centers. Working Paper, MIT (with Misty Heggeness and Jennifer Kao).

## **ONGOING PROJECTS:**

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Locked Out of the Ivory Tower? Antecedents and Consequences of Initial Career Choice for Elite Postdocs in the Life Sciences (with Soomi Kim and Erin L. Scott)

Evaluating Innovation: Identifying Promising Ideas at the Gates Foundation (with Yuly Fuentes-Medel, Julian Kolev, and Fiona Murray)

## **CHAPTERS IN EDITED VOLUMES AND OTHER NON-PEER REVIEWED MATERIALS:**

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Funding Breakthrough Research: Promises and Challenges of the “ARPA Model” (with Erica Fuchs, Anna P. Goldstein, and Michael Kearney). *Innovation Policy and the Economy*, vol. 19, pp. 69-96, 2019. Also NBER Working Paper #24674.

The Diffusion of Scientific Knowledge Across Time and Space: Evidence from Professional Transitions for the Superstars of Medicine (with Joshua Graff Zivin and Bhaven Sampat). Chapter 2 in *The Rate & Direction of Inventive Activity Revisited* (edited by Joshua Lerner and Scott Stern), pp. 107-155, 2012. Chicago: University of Chicago Press.

NIH Peer Review: Challenges and Avenues for Reform (with Joshua Graff Zivin and Gustavo Manso). *Innovation Policy and the Economy*, vol. 13, pp. 1-21, 2013.

Technological Innovation and Organizations (with Joshua Lerner). Chapter 14 in *The Handbook of Organizational Economics* (edited by Robert Gibbons and John Roberts), pp. 575-603, 2012. Princeton, NJ: Princeton University Press.

Promoting Energy Innovation with Lessons from Drug Development (with Anna Goldstein, Joshua Graff Zivin, and Vladimir Bulovic). Hamilton Project Policy Proposal #2017-16, 2017.

## **PUNDITRY:**

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Turn the Scientific Method on Ourselves. *Nature*, **484**(7392), pp. 31-32, 2012.

Small-team Science is Beautiful. *Nature*, **566**(7744), pp. 330-332, 2019.

Beat COVID-19 Through Innovation. *Science*, **368**(6491), p. 553, 2020 (with Benjamin Jones).

## **SERVICE ACTIVITIES:**

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Ad-hoc Reviewer for Management Science, Science, Research Policy, Economics of Innovation and New Technology, The Review of Economics and Statistics, Administrative Science Quarterly, The Quarterly Journal of Economics, The RAND Journal of Economics, The Review of Industrial Organization, The Review of Economic Studies, Econometrica, The Journal of Political Economy, The American Economic Review, and the National Science Foundation.

Member, American Economic Association and Academy of Management.

Organizer, Fall 2005 Meetings, NBER Program on Technological Progress and Productivity Measurement.

Organizer, Summer Institute 2007, 2010, 2011, 2012, and 2013 Meetings, NBER Program on Innovation Policy & the Economy.

Program Committee, International Industrial Organization Conference, 2008 and 2009.

MIT Undergraduate Practice Opportunities Program (UPOP), Strategy Module, IAP 2007 & 2008

Committee on Evaluation of the *Advanced Research Projects Agency–Energy*, The National Academies, 05/2015 to 07/2017

PhD Program Coordinator, Technological Innovation, Entrepreneurship, and Strategy, MIT Sloan, 2011-2019.

Founder of the “Gifts of Athena” blog at <http://giftsofathena.wordpress.com/>

## GRANTS AND AWARDS:

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National Institutes of Health (co-PI)	\$4.362M (2013-2018)
National Science Foundation (co-PI)	\$250K (2007-2009)
National Science Foundation (co-PI)	\$347K (2011-2014)
National Science Foundation (co-PI)	\$376K (2015-2017)
National Science Foundation (co-PI)	\$428K (2017-2019)
NIH-funded International Network on the Value of Health Research	\$20K (2017-2018)
Kaufman Foundation/NBER IPE Program	\$20K (2007-2008)
Alfred P. Sloan Industry Studies Fellow	\$40K (2005-2007)
The Merck Foundation (co-investigator)	\$600K (2003-2005), Renewed (2006-2007)
Institute for Social & Economic Research & Policy (co-investigator)	\$9K (2002)
Columbia Alliance for Health Care Management (co-investigator)	\$13K (2002)
Fellowship, Industrial Performance Center	MIT (2000)
Fellowship, Crédit Suisse Holding	MIT (1998)
Prix d'Excellence, Informatique CDC, Paris	(1992)

## TEACHING:

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MBA	Competitive Strategy Innovation Strategy Entrepreneurial Strategy
Executive MBA	Competitive Strategy Innovation Strategy
Sloan Fellows	Innovation-driven Advantage
PhD	Economics of Ideas, Innovation, and Entrepreneurship

## THESIS SUPERVISION AND ADVISING:

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Student	Program	Initial Placement
Ariel Fishman	PhD, Columbia University	Yeshiva University
Suchin Virabhak	PhD, Columbia University	Pfizer Corp.
Jialan Wang	PhD, MIT	Washington University in St. Louis
Christopher Liu	DBA, Harvard Business School	University of Toronto
Patrick Gaulé	PhD, Ecole Polytechnique Fédérale de Lausanne	CERGE-EI
Ina Ganguli	Harvard Kennedy School PhD student	Stockholm School of Economics
Danielle Li	MIT Economics PhD student	Northwestern University
Abhishek Nagaraj	MIT Sloan PhD student	University of California at Berkeley
Joshua Krieger	MIT Sloan PhD student	Harvard Business School
Jorge Guzman	MIT Sloan PhD student	Columbia University
J. Daniel Kim	MIT Sloan PhD student	University of Pennsylvania
Jennifer Kao	Harvard Kennedy School PhD student	UCLA
Samantha Zyontz	MIT Sloan PhD student	Stanford Law School (postdoc)
Hyejun Kim	MIT Sloan PhD student	HEC Paris
Ankur Chavda	MIT Sloan PhD student	HEC Paris
Caroline Fry	MIT Sloan PhD student	University of Hawaii
Ryan Hill	MIT Economics PhD Student	Brigham Young University

## **CONFERENCE AND SEMINAR PRESENTATIONS:**

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Academy of Management Meetings, San Diego, August 1998.  
CCC Doctoral Student Conference, New York University, April 1999.  
CCC Doctoral Student Conference, Northwestern University, April 2000.  
MIT Industrial Organization Seminar, October 2000.  
University of Maryland, November 2000.  
Tel Aviv University, Leon Recanati Graduate School of Business Administration, Ramat Aviv, Israel, December 2000.  
École des Hautes Études Commerciales, Jouy-en-Josas, France, December 2000.  
Academy of Management Meetings, Toronto, August 2001.  
University of Illinois at Urbana-Champaign, January 2001.  
University of Pennsylvania, Wharton School of Business Administration, January 2001.  
Carnegie-Mellon University, Graduate School of Industrial Administration, January 2001.  
Washington University at Saint Louis, Olin School of Business, January 2001.  
University of Michigan Business School, January 2001.  
Emory University, Goizueta Business School, February 2001.  
INSEAD, Fontainebleau, France, February 2001.  
University of California at Berkeley, Haas School of Business, February 2001.  
Harvard Business School, February 2001.  
Columbia University, Graduate School of Business, February 2001.  
NBER Summer Institute, Productivity Program, July 2001.  
Academy of Management Meetings, Washington D.C., August 2001.  
Stern School of Business, New York University, Management Seminar Series, October 2001.  
Columbia University Applied Microeconomics Workshop, November 2001.  
Stanford Strategy Conference, March 2002.  
Wharton Innovation Conference, April 2002.  
Academy of Management Meetings, Denver, August 2002.  
Learning, Incentives and Knowledge Conference, Copenhagen Business School, Copenhagen, Denmark, November 2002.  
NBER Summer Institute, Innovation Policy & The Economy Program, July 2003.  
ATOM Seminar, Université Paris I, December 2003.  
Indian Institute of Management, Calcutta, December 2003.  
University of Pennsylvania, Wharton School of Business Administration, Leonard Davis Institute of Health Economics Research Seminar Series, February 2004.  
MIT Sloan School of Management, Economic Sociology Seminar, February 2004.  
RAND Health Economics Seminar, RAND Corporation, April 2004.  
International Industrial Organization Conference, Chicago, April 2004.  
Earth Institute, Columbia University, May 2004.  
NBER Summer Institute, Corporate Finance Program, July 2004, Discussant.  
Russel Sage Foundation, Formation and Decay of Economic Networks, July 2004.  
Academic Science and Entrepreneurship Conference, NBER, July 2004.  
Harvard Business School Strategy Conference, October 2004 (Discussant)  
Organizational Economics Conference, NBER, November 2004.  
Technion, Israel Institute of Technology, December 2004.  
Harvard Business School, Strategy Seminar Series, March 2005.  
NBER Academic Science and Entrepreneurship Conference, Santa Fe, April 2005.  
Columbia University, Industrial Organization Seminar, April 2005.  
UC Berkeley, Haas School of Business, Institutional Analysis Workshop, April 2005.  
UCLA, Human Resources and Organizational Behavior Seminar Series, April 2005.  
INSEAD, Strategy Seminar Series, May 2005.  
University of Arizona, Economics Department, September 2005.  
NBER Productivity Meetings, December 2005.  
University of Toronto, Rotman School of Management, December 2005.

Sloan Foundation Industry Studies Annual Conference, December 2005.  
Sloan School of Management, MIT, January 2006.  
Stern School of Business, NYU, January 2006.  
Fuqua School of Business, Duke University, January 2006.  
UC Berkeley, Haas School of Business, Institutional Analysis Workshop, February 2006.  
Federal Trade Commission Roundtable on the Pharmaceutical Industry (Discussant), October 2006.  
Federal Reserve Bank of Cleveland Conference on Universities, Innovation, and Economic Growth, November 2006.  
Discussion Leader, Generating Ideas: Applied and Academic Research (with Ben Jones). "Innovation and Early Stage Ideas" Conference, Tinbergen Institute, Amsterdam, December 2006.  
University of Chicago School of Medicine, January 2007.  
Northwestern University Kellogg GSM Entrepreneurship Lecture Series, January 2007.  
Howard Hughes Medical Institute "Rewarding Breakthrough Research" Conference, Panelist, July 2007.  
NBER Summer Institute, Personnel Economics Program, July 2007.  
Harvard Business School, Technology & Operations Management Unit, November 2007.  
Harvard Business School, Entrepreneurial Management Unit, December 2007.  
London School of Economics, Center for Economic Performance, December 2007.  
American Economic Association Meetings, New Orleans, January 2008.  
Harvard University, Labor Economics Seminar Series, February 2008.  
NBER Science of Science Day, March 2008.  
Northwestern Institute on Complex Systems, Northwestern University, May 2008.  
UCLA Anderson School of Business, May 2008.  
University of Michigan Ross School of Business, November 2008.  
University of Pennsylvania Wharton School, November 2008.  
University of Chicago Booth School of Business, January 2009.  
MIT Labor Economics Seminar, March 2009  
NBER Winter Productivity Meetings, Discussant, March 2009  
NBER-Kaufman Foundation Preconference on the Rate and Direction of Inventive Activity, July 2009  
NBER Summer Institute, IPE Program, Discussant, July 2009  
Yale University Industrial Organization Seminar, October 2009  
Carnegie Mellon University, November 2009  
Georgia Institute of Technology, December 2009  
NBER Fall Productivity Meetings, December 2009  
American Economic Association Meeting, Atlanta, January 2010  
MIT/Harvard Organizational Economics Seminar, February 2010  
CCC Doctoral Conference, University of Michigan Ross School of Business, Ann Arbor, April 2010  
Columbia University Graduate School of Business, NYC, April 2010  
HEC Academic Entrepreneurship Conference, Jouy-en-Josas, France, September 2010  
NBER Rate & Direction of Inventive Activity Conference, Warrenton, VA, October 2010  
EMD Serono, Geneva, Switzerland, February 2011  
Individuals and Institutions in the Health Care Sector, Milton Friedman Institute, Discussant, April 2011  
NBER mini-conference on Innovation and Organizations, Cambridge, MA, July 2011  
Sabancı University, Istanbul, Turkey, October 2011  
University of Maryland, October 2011  
Universidad Carlos III, Madrid, Spain, October 2011  
London Business School, October 2011  
Utah/BYU Strategy Conference, Discussant, March 2012  
All UC Economic History Conference, Discussant, Berkeley, CA, March 2012  
Barabasi Lab, Northeastern University, March 2012  
HEC Paris, September 2012  
Tsinghua University, Beijing, November 2012  
Fudan University, Shanghai, November 2012  
NBER Winter Conference, Productivity, Innovation, and Entrepreneurship Program, March 2013  
New York University, Management Department Seminar Series, March 2013  
Queen's University, Entrepreneurship and Innovation Conference, Kingston, Ontario, June 2013

The Institute for Quantitative Social Science, Harvard University, Science of Success Conference, Cambridge, MA, June 2013  
Biotechnology & Standards Conference, Center for Biomedical Innovation, MIT, October 2013  
Technology & Operations Management Seminar, Harvard Business School, October 2013  
Strategy Seminar, Olin School of Business, Washington University at St. Louis, October 2013  
Strategy Seminar, Kellogg School of Management, Northwestern University, November 2013  
Industrial Organization Seminar, Tel Aviv University, Department of Economics, April 2014  
Applied Micro Seminar, Hebrew University, Department of Economics, April 2014  
Innovation Seminar, Ecole des Mines-ParisTech, May 2014  
Innovation Seminar, Tsinghua University, Beijing, May 2014  
Innovation Seminar, Chinese Academy of Sciences, Beijing, May 2014  
NIH, Center for Scientific Review, October 2014  
UC Berkeley, Coleman Fung Institute of Engineering Leadership, November 2014  
Stanford University, Economics Department/SIEPR, November 2014  
National University of Singapore, Strategy Seminar, December 2014  
Télécom Sud-Paris, Innovation Seminar, December 2014  
NIH, National Institute of General Medical Sciences, April 2015  
American Association for the Advancement of Science Forum on Science & Technology Policy, Washington DC, April 2015  
NBER Summer Institute, Productivity, Innovation, and Entrepreneurship Program, July 2015  
Burroughs Wellcome Fund/Sloan Foundation Workshop on the Scientific Workforce, Durham, NC, October 2015  
UC Berkeley, Haas School of Business, October 2015  
NBER Summer Institute, PIE Program, Discussant, July 2016  
Frontiers of Innovation and Entrepreneurship Conference, Fundación Rafael de Pino, Speaker, July 2016  
Hong Kong University Symposium on Innovation Strategy & Entrepreneurial Finance, October 2016  
National Academy of Science Innovation Policy Forum, Co-organizer and Presenter, December 2016  
University of Michigan, Ross School of Business, Strategy Seminar, February 2017  
University of Utah, Eccles School of Business, Strategy Seminar, March 2017  
Università Bocconi, Strategy Seminar, April 2017  
University of Toronto, Rotman School of Management, Strategy Seminar, April 2017  
Keynote Lecture, Seventh ZEW/MaCCI Conference on the Economics of Innovation and Patenting, Mannheim, Germany, May 2017  
Keynote Presentation, University of Tokyo/GRIPS Conference on Empirical Studies of Innovation and Entrepreneurship, Tokyo, Japan, September 2017  
Ecole Polytechnique Fédérale de Lausanne, Collège du Management de la Technologie, February 2018  
ESMT Berlin, February 2018  
Strategy & Innovation Seminar, Georgia Institute of Technology, April 2018.  
University of Wisconsin School of Business, October 2018.  
Economic History Seminar, New York University, November 2018.  
Utah Winter Strategy Conference, Plenary Speaker, March 2019.  
Northwestern University, Kellogg Management & Organizations Seminar, May 2019.  
World Bank Conference on Private Sector Digital Platforms, October 2019.  
HEC Strategy Seminar, December 2019.  
Max Planck Junior Researcher Workshop on Science, Innovation and Entrepreneurship, Munich, December 2019, Keynote Speaker.