



**August 2013**

**Lee Fleming**

Blum Hall East 330B  
Fung Institute for Engineering Leadership  
University of California, Berkeley  
Berkeley, CA 94720-5580  
(510) 664-4586

**EDUCATION**

- 1998      Ph.D., Organizational Behavior, Department of Industrial Engineering, Stanford University  
  
Dissertation: “Explaining the Source and Tempo of Invention: Recombinant Learning and Exhaustion in Technological Evolution”  
  
Committee: Stephen Barley (chair), William Barnett, Michael Hannan, and James March
- 1996      M.S., Statistics, Stanford University
- 1992      M.S., Engineering Management (part-time honors cooperative sponsored by Hewlett Packard), Stanford University
- 1985      B. S., Electrical Engineering, University of California, Davis

**APPOINTMENTS**

- 7/1/11-      Director of Coleman Fung Institute of Engineering Leadership;  
Coleman Fung Chair of Engineering Leadership, Industrial Engineering  
and Operations Research, UC Berkeley College of Engineering; Courtesy  
appointment, Haas School of Business
- 7/1/08–6/30/11      Albert J. Weatherhead III Professor of Business Administration,  
Technology and Operations Management Unit, Harvard Business School
- 7/1/05–6/30/08      Associate Professor, Technology and Operations Management Unit,  
Harvard Business School
- 7/1/03–6/30/05      Lumry Family Associate Professor of Business Administration,  
Technology and Operations Management Unit, Harvard Business School

7/1/98–6/30/03      Assistant Professor, Technology and Operations Management Unit,  
Harvard Business School

### **Assignments at University of California, Berkeley**

2012-2013      Director, Fung Institute for Engineering Leadership  
Co-Chair, Executive Steering Committee, Fung Institute  
Member, Standing Committee on Engineering Ethics and Social Responsibility  
*Engineering Leadership* (Eng 272)  
*Corporate Strategy and Technology* (PHDBA279C)  
*Haas Innovation Seminar* (C279)  
*Data, Society and Inference Seminar*  
Capstone Teams: Dow Chemical, MeoGraph, Linked Data  
Executive Education, UC Berkeley College of Engineering  
Member, Hiring Committee, Industrial Engineering and Operations Research  
Chair, Hiring Committee, IEOR/Haas Joint Appointment  
Dissertation exam and advising committees: Sun Zhen, Yujin Kim

2011-2012      Director, Fung Institute for Engineering Leadership  
Co-Chair, Executive Steering Committee, Fung Institute  
Member, Standing Committee on Engineering Ethics and Social Responsibility  
*Engineering Leadership* (Eng 271 and 272)  
*Capstone Integration*  
*Haas Innovation Seminar* (C279)  
Capstone Teams: Blue Goji, Dr. Chi, LiON Batteries, Alien Sandal  
Executive Education, UC Berkeley College of Engineering  
Member, Dissertation Committee: K. Younge (CU Boulder); A. Doshi (Harvard);  
T. Ke (Berkeley), Y. Liu (Berkeley)

### **Assignments at Harvard University**

2010-2011      *Building Green Businesses* (Business 6611)  
*Inventing Breakthroughs and Commercializing Science* (Business 2107)  
*Applied Methods Seminar* (Government 3009)  
*Economics of Science and Engineering* (Government 2880)  
*Theory and Practice of Research* (Business 4004)  
*Custom Program*, Danish National Advanced Technology Foundation (Exec Ed)  
Member, Harvard University Science and Engineering Committee  
Member, Harvard Academic Computing Committee  
Program Chair, Doctorate of Business Administration Program  
Member, Doctoral Program and Admissions Committee  
Member, Steering Committee, Institute for Quant Research in the Social Sciences  
Member, Field Exam Committee: E. Lin, S. Chai, A. Doshi  
Member, Dissertation Committee: S. Chai, S. Arts (K.U. Leuven)  
Visiting Scholar, National Renewable Energy Laboratory, Golden, CO

- 2009-2010 *Entrepreneurship* (Required curriculum)  
*Building Green Businesses* (Business 6611)  
*Applied Methods Seminar* (Government 3009)  
*Economics and Business of Science* (Government 2880)  
*Theory and Practice of Research* (Business 4004)  
*Networks and Innovation*, CEEL Summer School Program in Economics, Trento  
Member, Appointments Committees (2)  
Member, Harvard University Science and Engineering Committee  
Program Chair, Doctorate of Business Administration Program  
Member, Science and Technology Management Ph.D. Committee  
Member, Doctoral Program and Admissions Committee  
Member, Steering Committee, Institute for Quant Research in the Social Sciences  
Member, Dissertation Committee: A. Oord (U. Antwerp), P. Choudhury (Wharton placement), C. Liu (Rotman placement)  
Member, Field Exam Committee: E. Bernstein
- 2008-2009 *Inventing Breakthroughs and Commercializing Science* (Business 2107)  
*Building Green Businesses* (Business 6611)  
*Applied Methods Seminar* (Government 3009)  
*Economics and Business of Science* (Government 2880)  
*Strategies for Protecting and Monetizing IP* (Executive Education)  
*DBA Work in Progress Seminar* (Doctoral Program)  
Member, Harvard University Science and Engineering Committee  
Member, Search Committee, Dean of School of Applied Sciences and Engr  
Program Chair, Doctorate of Business Administration Program  
Program Head, Technology and Operations Management Doctoral Program  
Member, Science and Technology Management Ph.D. Committee  
Member, Doctoral Program and Admissions Committee  
Member, Steering Committee, Institute for Quant Research in the Social Sciences  
Member, Dissertation Committee: S. Mingo (Univ. of Miami placement)  
Chair, Dissertation Committee: M. Marx (MIT Sloan placement)
- 2007-2008 *Inventing Breakthroughs and Commercializing Science* (Business 2107)  
*Science-Based Business Models* (Elective Curriculum)  
*Applied Methods Seminar* (Government 3009)  
*Management of Technological Innovation* (University Doctoral Course)  
*TOM Unit DBA Seminar* (Doctoral Course)  
*Leading Product Development* (Executive Education)  
*Leading Science-Based Businesses* (Executive Education)  
*Leadership and Strategy in Pharmaceuticals* (Executive Education)  
Member, Search Committee, Dean of School of Applied Sciences and Engr  
Program Head, Technology and Operations Management Doctoral Program  
Member, Information and Technology Management Ph.D. Committee  
Member, Doctoral Program and Admissions Committee  
Member, Dissertation Committee: F. Cavaretta (INSEAD)  
Member, Field Exam Committee: V. Kuppuswamy, C. Liu, M. Marx, R. Fung

Faculty Advisor, MBA Field Studies: Purdue Solar Technologies, Microbial Energy, Stereo-Jet, Diagnostics For All, Novel Anti-depressant, International Technology Acquisition Analysis  
Member, Steering Committee, Institute for Quant Research in the Social Sciences

2006-2007 *Commercializing Science and High Technology* (Business 2107)  
*Applied Methods Seminar* (Government 3009)  
*Leading Science-Based Businesses* (Executive Education)  
*Leadership and Strategy in Pharmaceuticals* (Executive Education)  
Program Head, Technology and Operations Management Doctoral Program  
Member, Information and Technology Management Ph.D. Committee  
Member, Doctoral Program and Admissions Committee  
Member, Field Exam Committee for A. Aifer  
Member, Dissertation Committee for X. Zhong (U. of Chicago), T. Langenberg (EPFL Lausanne)  
Member, Senior Thesis Committee for J. Bolian  
Faculty Advisor, MBA Field Studies: HealthEva

2005-2006 *Commercializing Science and High Technology* (Business 2107)  
*Applied Methods Seminar* (Government 3009)  
*Leading Product Development* (Executive Education)  
*Science, Technology, and Innovation Policy* (KSG Executive Education)  
Program Head, Technology and Operations Management Doctoral Program  
Member, Technology and Operations Management Hiring Committee  
Member, Information and Technology Management Ph.D. Committee  
Member, Doctoral Program and Admissions Committee  
Member, Field Exam Committee for S. Mingo  
Member, Dissertation Committee for J. Kim (Columbia placement)  
Faculty Advisor, MBA Field Studies: PARC Solar Cell Commercialization  
Faculty Associate, Institute for Quantitative Research in the Social Sciences

2004-2005 *Commercializing Science and High Technology* (Business 2107)  
*Management of Technological Innovation* (University Doctoral Course)  
*Applied Methods Seminar* (Government 3009)  
*Leading Product Development* (Executive Education)  
Program Head, Technology and Operations Management Doctoral Program  
Member, Information and Technology Management Ph.D. Committee  
Member, Doctoral Program and Admissions Committee  
Member, Field Exam Committee for S. Kesavan

2003-2004 *Managing Innovation* (Elective Curriculum)  
*Management of Technological Innovation* (University Doctoral Course)  
*Applied Methods Seminar* (Government 3009)  
*Leading Product Development* (Executive Education)  
Member, Doctoral Policy Committee  
Member, Doctoral Program and Admissions Committee

Member, Field Exam Committees for X. Zhong (U. of Chicago), D. Zinner  
Faculty Advisor, MBA Field Studies: European NanoTech

- 2002-2003    *Managing Product Development* (Elective Curriculum)  
*Management of Technological Innovation* (University Doctoral Course)  
*Applied Methods Seminar* (Government 3009)  
Member, Doctoral Policy Committee  
Member, Doctoral Program and Admissions Committee  
Member, Field Exam Committees for S. Chauduri, G. Clarkson, and J. Kim
- 2001-2002    *Technology and Operations Management* (Required Curriculum)  
*Management of Technological Innovation* (University Doctoral Course)  
*Applied Methods Seminar* (Government 3009)  
Member, Doctoral Policy Committee  
Member, Doctoral Program and Admissions Committee
- 2000-2001    *Technology and Operations Management* (Required Curriculum)  
*Management of Technological Innovation* (University Doctoral Course)  
Member, Doctoral Policy Committee  
Member, Doctoral Program and Admissions Committee
- 1999-2000    *Technology and Operations Management* (Required Curriculum)  
*Crimson Greetings* (Foundations Program, Required Curriculum)
- 1998-1999    *Technology and Operations Management* (Required Curriculum)  
*Quantitative Methods* (Foundations Program, Required Curriculum)

## **PUBLICATIONS**

### **Refereed Articles**

Younge, K. and T. Tong, L. Fleming “How anticipated employee mobility affects acquisition likelihood: Evidence from a natural experiment.” Forthcoming at *Strategic Management Journal*.

Singh, J. and L. Fleming “Lone Inventors as Sources of Technological Breakthroughs: Myth or Reality?” *Management Science*, 56 (2010): 41-56.

Marx, M. and D. Strumsky, L. Fleming “Mobility, Skills, and the Michigan Non-compete Experiment,” *Management Science*, 55 (2009): 875-889 (lead article).

Waguespack, D. and L. Fleming “Scanning the Commons: Evidence on the Benefits to Startups Participating in Open Standards Development,” *Management Science*, 55 (2009): 210-223.

Fleming, L. and D. Chen, S. Mingo, “Collaborative Brokerage, Generative Creativity, and Creative Success.” *Administration Science Quarterly*, 52 (2007): 443-475.

Fleming, L. and C. King, A. Juda, "Small Worlds and Regional Innovation." *Organization Science*, Vol. 18, No. 2 (2007), pp. 938-954.

Fleming, L. and D. Waguespack, "Brokerage, Boundary Spanning, and Leadership in Open Innovation Communities," *Organization Science*, Vol. 18, No. 2 (2007), pp. 165-180 (lead article).

Sorenson, O. and J. Rivkin, L. Fleming "Informational Complexity and the Flow of Knowledge Across Social Boundaries." In *Applied Evolutionary Economics and Economic Geography*, ed. K. Frenken. Northhampton, Ma: Edward Elgar, (2007), pgs. 147-160.

Fleming, L. and K. Frenken, "The Evolution of Inventor Networks in the Silicon Valley and Boston Regions," *Advances in Complex Systems*, Vol. 10, No. 1 (2007) 53-71.

Fleming, L. and M. Marx, "Managing Creativity in a Small World," *California Management Review* 48 (Summer 2006): 6-27 (lead article). (Reprinted in *IEEE Engineering Management Review* 37(4) 90-92.)

Sorenson, O. and J. Rivkin, L. Fleming "Complexity, Networks and Knowledge Flow," *Research Policy* 35 (2006): 994-1017. (Reprinted in *Handbook of Evolutionary Economic Geography*, Edward Elgar, 2010).

Fleming, L. and M. Szigety, "Exploring the Tail of Creativity: An Evolutionary Model of Breakthrough Invention," *Advances in Strategic Management* (2006): 335-362.

Sorenson, O. and L. Fleming "Science and the Diffusion of Knowledge," *Research Policy* 33 (2004): 1615-1634.

Fleming, L. "Recombinant Uncertainty in Technological Search," *Management Science* 47 (2001): 117-132.

Billington, C. and L. Fleming "Technological Evolution, Standard Interfaces, and New Market Opportunities," in *POMS Series in Technology and Operations Management*, Volume 1, (1998): 30-41.

### **Non-refereed Articles**

Li, Guang-Chen and Lee Fleming 2013. Mobility Mapper: Visualizations of Inventor Mobility, 1975-2010. Fung Institute Technical Report #2013.06.18.

Li, Guang-Chen and Lee Fleming 2013. Clean Energy Patent Mapper: Visualization of sources of clean tech inventions. Fung Institute Technical Report #2013.06.17.

Committee Member: Interim Report for the Triennial Review of the National Nanotechnology Initiative, Phase II, National Academies Press, 2012.

Nanda, R. and K. Younge, L. Fleming, (forthcoming). “Innovation and Entrepreneurship in Clean Energy,” *Rethinking Science and Innovation Policy*, NBER.

Best, J., and S. Neiss, S. Stralser, L. Fleming (2013). “How big will the debt and equity Crowdfunding investment market be? Comparisons, assumptions, and estimates.” Coleman Fung Institute of Engineering Leadership Technical Report.

G. Giudicati, and L. Fleming (forthcoming). “Recombination of Knowledge.” *Palgrave Encyclopedia of Strategic Management*, eds. David Teece and Mie Augier.

G. Giudicati, and L. Fleming (forthcoming). “NK Models.” *Palgrave Encyclopedia of Strategic Management*, eds. David Teece and Mie Augier.

Fleming, L., and L. Colfer, A. Marin, and J. McPhie, 2012. “Why the Valley Went First: Aggregation and Knowledge Flow in Regional Collaboration Networks.” In *The Emergence of Organizations and Markets*, eds. W. Powell and J. Padgett, pp. 520-544. Princeton University Press, Princeton, N.J.

Marx, M., and L. Fleming, 2012. “Noncompetes: Barriers to Exit and Entry?” *National Bureau of Economic Research Innovation Policy and the Economy*, **12**: 39-64. University of Chicago Press.

Perry, T. and M. Miller, K. Younge, J. Newcomb, L. Fleming 2011. “Clean energy innovation: Sources of technical and commercial breakthroughs.” NREL technical report NREL/TP-6A20-50624.

Yang, W. and J. Golden, L. Fleming 2010. “Science and Technology Entrepreneurship for Greater Societal Benefit: Ideas for Curricular Innovation.” *Advances in the Study of Entrepreneurship, Innovation, and Economic Growth*, Volume 21, 167-184.

Marx, M., and D. Strumsky, L. Fleming. “To Compete or not to Compete.” *Rappaport Institute Policy Brief*, April, 2009.

Fleming, L. “Breakthroughs and the “Long Tail” of Innovation,” *Sloan Management Review*, Fall 2007, Vol. 49, No. 1, pp. 69-74.

Mingo, S. and L. Fleming, “Creativity in New Product Development: An Evolutionary Integration,” 2007. In *Kluwer Handbook on Product Development*, pgs. 113-134, eds. C. Loch and K. Stelios. London: Kluwer Academic Publishers.

Brunner, D., and A. MacCormack, D. Zinner, L. Fleming, 2009. “R&D Project Selection and Portfolio Management: A Review of the Past, a Description of the Present, and a Sketch of the Future.” Pgs. 215-238, *Blackwell Handbook of Technology Management*, ed. Scott Shane. Malden, MA: Blackwell Publishing.

Marx, M., and L. Fleming “Managing Innovation in Small Worlds,” *Sloan Mngt Review* 48 (2006): 8-9.

Fleming, L. “Perfecting Cross Pollination,” *Harvard Business Review* 82 (2004): 22-24.

Juda, A. and L. Fleming. “A Network of Invention,” *Harvard Business Review* 82 (2004): 6.

Bromiley, P. and L. Fleming. “The Resource-Based View of Strategy: A Behavioral Critique.” In *The Economics of Choice, Change, and Organizations: Essays in Memory of Richard M. Cyert*, eds. Mie Augier and James G. March. Cheltenham, UK: Edward Elgar, 2002.

Sorenson, O. and L. Fleming. “The Dangers of Modularity,” *Harvard Business Review* 79 (2001): 20-21.

Fleming, L. “Review of Fundamental Issues in Strategy: A Research Agenda,” eds. Rumelt, Schendel, and Teece, *Administration Science Quarterly* 41 (1996): 196-198.

### **Cases, Notes, and Supplements**

With T. Perry, “Horizon Wind Energy.” Harvard Business School 5-609701 (2008) Multi-media case.

“Inventing Breakthroughs and Commercializing Science: An Overview of the Course.” Course Overview Note for Instructors, Harvard Business School note 5-607-108 (2007) [11].

“Key Concepts in a Module on Managing the Invention of Breakthroughs.” Module Note for Instructors, Harvard Business School note 5-607-109 (2007) [24].

“Key Concepts in a Module on the Commercialization of Science.” Module Note for Instructors, Harvard Business School note 5-607-110 (2007) [22].

“Materials and Logistics for a Multidisciplinary Course.” Module Note for Instructors, Harvard Business School note 5-607-111 (2007) [12].

“Inventing Breakthroughs and Commercializing Science: Project Note for Students,” Harvard Business School note 607-087 (2007) [5].

“Commercializing an MRI Breakthrough.” Harvard Business School N9-608-064 (2007) [17].

With J. Aptekar, “Commercializing an MRI Breakthrough.” Harvard Business School teaching note 5-608-078 (2007) [7].

With T. Perry and L. Stein, “Engineering a Renaissance: The Launch of the Harvard School of Engineering and Applied Sciences.” Harvard Business School case N9-608-087 (2007) [19].



With T. Perry, “Agion Technologies, Inc.” Harvard Business School case N9-608-060 (2007) [18].

With T. Perry, “The Cutie Catheter.” Harvard Business School case N9-608-084 (2007) [13].

With T. Perry, “License or Start-up? A Junior Faculty Member’s Dilemma.” Harvard Business School case N9-608-085 (2007) [25].

With T. Perry, “Advanced Electron Beams.” Harvard Business School case N9-608-083 (2007) [20].

With T. Perry, “Advanced Electron Beams.” Harvard Business School teaching note 5-608-089 (2007) [5].

With M. Thursby, “InfoVision,” Harvard Business School teaching note 5-607-102 (2007) [9].

With M. Thursby and J. Quinn, “Supplement to InfoVision (A): Technology Transfer at Georgia Tech” 607-085 (2007) [5].

With M. Marx, “Barry Riceman at NetD,” Harvard Business School teaching note 5-607-107 (2007) [16].

With M. Thursby, “HP Nanotech: Partnership with CNSI,” Harvard Business School teaching note 5-607-105 (2007) [14].

With A. Marin, “The Process of Scientific Discovery,” Harvard Business School teaching note 5-607-126 (2007) [18].

“Epodia: Demise of the HBS Case-writing Monopoly?” Harvard Business School teaching note 5-607-104 (2007) [12].

With D. Snow, “SpudSpy,” Harvard Business School teaching note 5-607-103 (2007) [13].

“Intevis: Brokering the Boundaryless Career,” Harvard Business School teaching note 5-607-078 (2007) [12].

With Christopher Liu, “Merton's Ethos of Science: Excerpts and Summaries,” Harvard Business School note for Students, 607-047 (2006) [2].

With M. Marx, “Barry Riceman at NetD (A),” Harvard Business School case 606-090 (2006) [10] (included in the HBS “Premier Case Collection”).

With M. Marx, “Barry Riceman at NetD (B),” Harvard Business School case 606-151 (2006) [4].

“Photovoltaic Breakthrough,” Harvard Business School teaching note 5-606-085 (2006) [19].

With A. MacCormack, “Linux, Supplement to Epodia,” Harvard Business School case 606-067 (2006) [5].

With J. Quinn: “ThinkCycle, Supplement to Epodia,” Harvard Business School case 606-056 (2006) [2].

With J. Quinn, “Cambia, Supplement to Epodia,” Harvard Business School 606-057 (2006) [3].

With M. Thursby and J. Quinn, “HP Nanotech: Partnership with CNSI,” Harvard Business School case 606-045 (2005) [24].

J. West and M. Vitale, “Commercialization at the Garvan Institute for Medical Research (A),” Harvard Business School case 606-051 (2005) [21].

With J. Quinn, “Epodia: Demise of the HBS case-writing Monopoly?” Harvard Business School case 605-077 (2005) [17].

With D. Snow, “SpudSpy,” Harvard Business School case 605-059 (2005) [25].

With M. Thursby and J. Quinn, “InfoVision (A): Technology Transfer at Georgia Tech,” Harvard Business School case 605-064 (2005) [22].

With M. Thursby and J. Quinn, “InfoVision (B): TI:GER Program Assessment,” Harvard Business School case 605-065 (2005) [7].

With G. Pisano and Eli Strick, “Vertex Pharmaceuticals: R&D Portfolio Management (A),” Harvard Business School case 604-101 (2004) [24].

“Photovoltaic Breakthrough,” Harvard Business School case 604-034 (2003) [22].

“Intevis: Brokering the Boundaryless Career,” Harvard Business School 602-148 (2002) [22].

“Textbooks Online (A), (B), (C), and (D)” Harvard Business School teaching note 5-600-065 (2000) [8].

With D. Debicella, S. Berman, and C. Kasper, “Textbooks Online (A),” Harvard Business School case 601-015 (2000) [15].

“Textbooks Online (B): TBO—First Day of Orders,” Harvard Business School 601-016 (2000) [3].

“Textbooks Online (C),” Harvard Business School case 601-017 (2000) [2].

## Work in Progress

With M. Marx and J. Singh, “Regional Disadvantage: Non-competes and Brain Drain.” Submitted.

With R. Lai and D. Doolin, A. D’Amour, A. Yu, Y. Sun, V. Torvik. “Disambiguation and co-authorship networks of the U.S. Patent Inventor Database.” Revision submitted at *Research Policy*.

With C. Jira and D. Waguespack, “Leadership and Collaborative Innovation.” Revision submitted at *Organization Science*.

With Z. Acs, E. Glaeser, R. Litan, S. Goetz, W. Kerr, S. Klepper, S. Rosenthal, O. Sorenson, W. Strange, "Entrepreneurship and Urban Success: Toward a Policy Consensus" (January 2008). Available at SSRN: <http://ssrn.com/abstract=1092493>.

With T. Simcoe and D. Waguespack, “Network Positions, Network Signals, and New Tie Formation: the ‘et al: Effect.’ ”

With Lai, D’Amour “The careers and co-authorship networks of US patent-holders, since 1975.”

With S. Chai, “Bibliometric predictors of breakthrough creativity: A review, assessment, and agenda.”

## AWARDS AND HONORS

- 2011 With Ken Younge, Tony Tong, recipient of the 2011 Strategic Management Society Conference, Best Paper Award – for “How anticipated employee mobility affects acquisition likelihood: Evidence from a natural experiment”
- 2009 With J. Lassiter, F. Reinhardt, recipient of the 2009 Apgar Award for Innovation in Teaching, for “Building Green Businesses,” Harvard Business School
- 2007 With M. Marx, recipient of the 2007 Accenture Award for the most important contribution to improving the practice of management in the preceding volume of the *California Management Review*—for “Managing Creativity in a Small World”
- 2005 With O. Sorenson, recipient of the Richard R. Nelson Prize of 2005—Institute of Management, Innovation, and Organization, with *Industrial and Corporate Change* and *Research Policy*: “Science and the Diffusion of Knowledge”

- 2005 With I. Baker, finalist, Third Annual Science and Engineering Visualization Challenge, sponsored by National Science Foundation and *Science*—for “The Co-evolution of Regional Innovation and Social Structure”
- 2005 With O. Sorenson, J. Rivkin, recipient of 2005 European Meeting on Applied Evolutionary Economics Best Paper Award, sponsored by the International Schumpeter Society—for “Complexity and the Diffusion of Knowledge”
- 1998 Recipient of Walter Gruyter/Technology Studies Best Student Paper Award, Academy of Management, Technology and Innovation Management Division— for “Recombinant Uncertainty in Technological Search”
- 1996 U.S. Collegiate National Cycling Championship silver medalist
- 1992 U.S. Collegiate National Cycling Championship silver medalist
- 1985 Outstanding Senior, University of California, Davis
- 1984 Founder, UC Davis Nordic Ski Team (nationally ranked Division II in 1985)
- 1983 Gauntlet Award, U.S. Army ROTC Basic Training (ranked 9th of 934 cadets)
- 1982 California State Cycling Champion (match sprint)
- 1981 California State Cycling Champion (best all around)
- 1980 Junior World Cycling Championship silver medalist
- 1980 U.S. Junior National Cycling Champion
- 1976 Young Artists Award, Fremont-Newark Philharmonic Orchestra
- 1974 Command performance, California Music Educators Association

**GRANTS**

- 2013 United States Trademark and Patent Office and American Institute of Research: Inventor disambiguation, automatic updating, and application data of the U.S. patent record (\$169K)
- 2011 NSF (1064182): From bench to biosphere: a critical analysis of effective deployment and commercialization of clean energy technologies (\$657K)

- 2010 With Vetle Torvik: NSF (0965259): From grant to commercialization: an integrated demonstration database which permits tracing, assessing, and measuring the impact of scientific funding. (\$750K)
- 2010 National Renewable Energy Laboratory: Analysis of Innovation and Inventor Networks in Clean Energy (\$10K)
- 2008 NSF (199704): A Social Network Database of Patent Co-authorship to Investigate Collaborative Innovation and its Economic Impact (\$375K initial grant and \$80K supplemental award)
- 2008 With David Waguespack and Tim Simcoe: Net Institute Summer Grant Award (\$4.5K)

## DOCTORAL STUDENTS

- 2013 Neil Thompson, “Moore’s Law and the impact of computation on firms.” Initial placement at MIT Sloan School of Management.
- 2012 Pian Shu, “Essays on Talent Allocation and Innovation.” Initial placement at Harvard Business School, Harvard University.
- 2012 Ken Younge, “*Essays on How Employee Mobility Affects Firms’ Strategic Decisions and Outcomes.*” Initial placement (postdoc) at UC Berkeley, College of Engineering.
- 2010 Raj Choudhury, “*Innovation in Emerging Markets.*” Initial placement at University of Pennsylvania, Wharton School of Management.
- 2010 Chris Liu, “*Essays on Network Antecedents in a Knowledge Production Context.*” Initial placement at University of Toronto, Rotman School of Management.
- 2009 Marx, Matt, “*Essays on Employee Non-compete Agreements.*” Committee chair: initial placement at MIT Sloan School of Management.
- 2009 Mingo, Santiago, “*Essays on Industrial Policy, Strategy, and Entrepreneurship.*” Initial placement at School of Business Administration, University of Miami.
- 2007 Kim, Jerry, “*Network of Audiences: FDA Review Time and Innovation.*” Initial placement at Graduate School of Business, Columbia University.

## **Academic assignments before tenure track appointments**

Teaching Assistant, School of Engineering, Stanford University

1997-1998    IE 161 Technology and War (Adams)  
                  IE 180 Undergraduate Final Projects (Barley)  
                  IE 270 Managing Technology for Competitive Advantage (Kosnik)

1996-1997    IE 180 Undergraduate Final Projects (Brandeau)  
                  IE 203 Organizational Behavior (Hargadon)  
                  IE 268 Manufacturing Strategy (Carlson)

1995-1996    IE 180 Undergraduate Final Projects (Hausman)  
                  IE 220 Management and Organization of Research and Development (Barley)

1994-1995    IE 203 Organizational Behavior (Sutton)  
                  IE 268 Manufacturing Strategy (Carlson)  
                  IE 269 Marketing Strategy (Kosnik)

Teaching Assistant, Graduate School of Business, Stanford University

1995-1996    T357 Manufacturing Strategy (Carlson)

Teaching Assistant, School of Engineering, University of California, Davis

1984-1985    ECE 110 Integrated Circuit Design and Fabrication (Churchill, Current)

Research Assistant, Graduate School of Business, Stanford University

1995-1996    Designed and built scanning, OCR, and event-history database for 40-year history of computer industry, with O. Sorenson (under Professor William Barnett).

Research Assistant, School of Engineering, Stanford University

1993-1994    Designed, built, and analyzed database for semiconductor startup dataset (under Professor Kathleen Eisenhardt).

Research Assistant, School of Engineering, University of California, Davis

1984-1985    Developed oxidation curves and spin-on dopant methods (under Prof. Churchill).

## **WORK EXPERIENCE**

### **Professional**

1997-1998    Strategy Consultant, Strategic Planning and Management, HP, Palo Alto, CA.

- Developed a strategic innovation framework with S. Kaplan and M. Tushman.
- 1993 Member of Integrated Circuits Business Division Staff, HP, Palo Alto, CA.  
Investigated and recommended supply chain solutions in IC manufacturing.
- 1992 Design Engineer, California Design Center, Hewlett Packard, Santa Clara, CA.  
Responsible for hiring, design, and design for manufacturability reviews.
- 1988-1991 Research Engineer, Hewlett Packard Laboratories/ICBD, Palo Alto, CA.  
Researched IC testing and design for test. Transferred group's research results, tools, and methodologies to HP divisions through teaching and app engineering to workstation, PC, printer, plotter, and networking hardware divisions.
- 1985-1988 Product Engineer, Colorado Integrated Circuit Division, HP, Ft. Collins, CO.  
Took 1 micron custom ICs from design through manufacturing release. Designed test circuitry, simulated design, wrote test vectors and vector translation tool, and characterized manufacturing robustness.
- 1971-1980 Musician and Section Lead, Musician's Local 510, Fremont, CA.  
Performed French Horn in classical orchestras and municipal bands. Toured twice (at 9 and 11) with brass quintets in Germany. Rose to section lead in all groups.

### **Patents and Internal Hewlett Packard Engineering Publications**

With R. La Fetra, "VLSI chip having improved test access," U.S. Patent #5,029,133.

With S. Walther, "Local tristate-control circuit for Automatic Test Program Generation," U.S. Patent #5,136,185.

With R. Aitken and P. Maxwell, "Results and Applications of a Bridging Fault Test Methodology," Hewlett Packard Design Technology Conference, San Diego, CA, May 1992.

With R. Aitken, R. LaFetra, and J. Brewer, "A Gate-Level Bridging-Fault Test Generation Methodology," Hewlett Packard Design Conference, Denver, CO, May 1991.

With R. Schleiger, "An Automatic Test Generation Methodology for In-Circuit Testing," Hewlett Packard Design Technology Conference, Denver, CO, May 1991.

With B. Frederick and B. Jung, "Applying Automatic Test Vector Generation on a Non-scan Custom Chipbuster Design," Hewlett Packard Design Technology Conference, Portland, OR, May 1990.

With D. Earl and E. Jew, “ATG: Innovations and Applications,” Hewlett Packard Design Technology Conference, Portland, OR, May 1990.

## PROFESSIONAL ACTIVITIES

- 2012            Member, National Research Council, Triennial Review of the National Nanotech Initiative
- 2008-            Department Editor, Entrepreneurship and Innovation, *Management Science*
- 2008-2009      Editor, *Research Policy*
- 2007-2008      Senior Editor, *Organization Science*
- 2005-2008      Associate Editor, *Management Science* (Meritorious Service Award)

### Reviewer

*Academy of Management Journal*  
*Academy of Management Review*  
*Administrative Science Quarterly*  
*American Economic Review*  
Austrian Science Fund  
*Computational and Mathematical Organization Theory*  
*California Management Review*  
*European Management Review*  
Harvard Business School Publishing  
*Information Systems Research*  
*Industrial and Corporate Change*  
*Industry and Innovation*  
*International Journal of Management Reviews*  
*International Journal of Urban and Regional Research*  
*Journal of Economic Behavior and Organization*  
*Journal of Engineering and Technology Management*  
*Journal of Evolutionary Economics*  
*Journal of International Business Studies*  
*Journal of Policy Analysis and Management*  
*Journal of Production and Operations Management*  
*Management Science*  
National Science Foundation  
National Renewable Energy Laboratory  
*Organization Science*  
*Public Library of Science*  
*Regional Studies*



*Research and Development Management*  
*Research Policy*  
*Review of Economics and Statistics*  
*Science*  
*Sloan Management Review*  
*Social Forces*  
*Strategic Management Journal*  
United States Department of Energy  
*Urban Studies*  
World Bank

## **PRESENTATIONS (Plenaries, international presentations, or notable forums in red)**

“2013 Academy of Management Patent PDW: The Fung Institute Patent Lab.”

Academy of Management Meetings, Orlando, FL (August, 2013)

“Thoughts on Innovation.”

Academy of Management Meetings, Orlando, FL (August, 2013)

“2013 Meet the Editors: Academy of Management TIMS Junior Faculty Consortium.”

Academy of Management Meetings, Orlando, FL (August, 2013)

“Networks, creativity, knowledge diffusion, and science policy.”

Committee on Assessing the Value of Research in Advancing National Goals, Washington, D.C. (July, 2013)

“Innovation and Entrepreneurship in Clean Energy.”

SIEPR Social Science and Technology Seminar, Stanford, CA (May, 2013)  
Global Venture Lab 4<sup>th</sup> Annual Summit, Berkeley, CA (November, 2012)  
Rethinking Science and Innovation Policy Conference, NBER, Cambridge, MA (October, 2012)

“Bibliometrics and science policy.”

Workshop on Disambiguation, University of Illinois, Urbana Champagne (June, 2012)  
NRC Triennial Review Committee of the National Nanotech Initiative, University of California, Irvine, CA (May, 2012)

“Noncompetes: Barriers to Exit and Entry?”

National Bureau of Economic Research Innovation Policy and the Economy Conference, Washington DC (April 2011)

Discussant, Roach and Cohen, “Patent Citations as Measures of Knowledge Flows from Public Research: A Comparison with Survey Data from US R&D Labs”

NBER Intellectual Property Policy and Innovation Conference, Cambridge, MA (July 2011)

## “How anticipated employee mobility affects acquisition likelihood: Evidence from a natural experiment”

Northwestern University, Media, Technology and Society Program (February 2013)  
University of Minnesota, Carlson School of Management (February 2013)  
University of California, Irvine (May, 2012)  
University of Chicago, Booth School of Business, Chicago, IL (October 2011)  
Academy of Management Conference, San Antonio, TX (August 2011)  
UC Berkeley Haas Innovation Seminar, Berkeley, CA (March 2011)  
National Bureau of Economic Research, Cambridge, MA (February 2011)  
Harvard University Business and Economics of Science, Boston, MA (December 2010)

## “Regional Disadvantage: Noncompetes and Brain Drain”

Northwestern University, Media, Technology and Society Program (February 2013)  
University of Minnesota, Carlson School of Management (February 2013)  
Science, Intellectual Property, and Innovation, UC Berkeley, CA (March 2012)  
UC Berkeley Organizational Behavior Seminar, Berkeley, CA (December 2011)  
OECD Conference on Knowledge Exchange Mechanisms, Washington, DC (November 2011)  
UC Berkeley Industrial Engineering and Operations Research Seminar, Berkeley, CA (March 2011)  
UC Berkeley Haas Innovation Seminar, Berkeley, CA (March 2011)  
Georgia Institute of Technology, Atlanta, GA (February 2011)  
Harvard University Business and Economics of Science, Boston, MA (December 2010)  
University of Utah, Eccles School of Business, Salt Lake City, UT (April 2010)  
[University of Colorado Leeds School of Business Distinguished Speaker Series, Boulder, CO \(March 2010\)](#)  
Microsoft, Seattle, WA (November 2009)  
[School on social networks and innovation, University of Trento, Trento, IT \(July 2009\)](#)  
[Plenary Presentation, 6th European Meeting on Applied Evolutionary Economics, Jena, DE \(May 2009\)](#)  
Harvard Business School Department of Research Presentation, Boston, MA (May 2009)  
Rappaport Institute for Greater Boston, Cambridge, MA (April, 2009)  
Stanford Entrepreneurs Club of New England, Boston, MA (April, 2009)  
New York University, New York, NY (April 2009)  
Harvard University, Berkman Center, Cambridge, MA (June 2008)  
University of Washington School of Business, Seattle, WA (May 2008)  
[Center for Advanced Management Studies, Ludwig Maximilian University, Munich, Germany, \(April 2008\)](#)  
Association of American Geographers, Boston, MA (April 2008)  
Harvard University, Graduate School of Business, Technology and Operations Management Seminar, Boston, MA (April 2008)  
Harvard University, Institute for Quantitative Social Science, Cambridge, MA (April 2008)  
Harvard University, Science, Engineering, and U.S. Economic Progress, Cambridge, MA (April 2008)

## “Disambiguation and co-author networks of the U.S. Patent Inventor Database”

Northwestern University, Media, Technology and Society Program (February 2013)  
University of Minnesota, Carlson School of Management (February 2013)  
[Science of Science Policy Conference, National Academy of Science, Washington, DC \(September 2012\)](#)  
OECD Conference on Knowledge Exchange Mechanisms, Washington, DC (November 2011)  
[USPTO Conference on Disambiguation, Washington, DC \(June 2011\)](#)  
Microsoft, Seattle, WA (November 2009)  
[School on social networks and innovation, University of Trento, Trento, IT \(July 2009\)](#)  
National Science Foundation, Washington, D.C. (March 2009)

## “Lone Inventors as Sources of Technological Breakthroughs: Myth or Reality?”

INFORMS Conference, Washington D.C. (October 2008)  
Stanford University, Scandinavian Consortium for Organizational Research, Stanford, CA (October 2006)  
Harvard University, Graduate School of Business, Technology and Operations Management Seminar, Boston, MA (October 2006)  
[University of Toronto, Rotman School of Management Seminar, Toronto, ON \(November 2006\)](#)

## “Science and Technology Entrepreneurship for Greater Societal Benefit: Ideas for Curricular Innovation”

UC Berkeley, College of Engineering, Berkeley, CA (March, 2011)  
UC Santa Barbara, College of Engineering, Santa Barbara, CA (October, 2010)  
INFORMS Winter Conference, Squaw Valley, CA (February 2008)  
CIMIT Innovation Congress, Boston, Ma. (November 2007)

Academy of Management Conference, Philadelphia, PA (August 2007)  
David Rockefeller Center for Latin American Studies at Harvard, Cambridge, MA (July 2007)  
Georgia Institute of Technology, Atlanta, GA (February 2007)  
Harvard Business School Core Seminar, Boston, MA (February 2006)

## “How to Identify and Fund Transformative Research”

National Science Foundation Task Force on Transformative Research, Santa Fe Institute, Santa Fe, NM (December 2005)

## “Mobility, Skills, and the Michigan Non-compete Experiment”

Stanford University Organizational Behavior Seminar, Stanford, CA (February 2008)  
INFORMS Conference, Seattle, WA (November 2007)  
Tuck School of Business, Hanover, NH (December 2007)  
Inside Innovation Conference, Haas School of Business, Berkeley, CA (November 2007)  
George Washington University, Washington D.C., (September 2007)  
[INSEAD, Fontainebleau, France \(September 2007\)](#)  
Academy of Management Conference, Philadelphia, PA (August 2007)  
Association of American Geographers, San Francisco, CA (April 2007)  
Wharton Technology Conference, Philadelphia, PA (April 2007)  
UC Santa Barbara, School of Engineering, Santa Barbara, CA (April 2007)  
Rappaport Institute for Greater Boston, Cambridge, MA (February, 2007)  
National Bureau of Economic Research, Cambridge, MA (November 2006)  
Harvard University, Doctoral Seminar, Boston, MA (October 2006)  
Stanford University, 10th Anniversary of the Center for Work, Technology, and Organization, Stanford, CA (September 2006)  
Harvard University, Entrepreneurship Work in Progress Seminar, Boston, MA (August 2006)  
Carnegie Mellon University, Entrepreneurship Seminar, Pittsburg, PA (December 2005)  
Roundtable on Engineering Entrepreneurship Research Conference, Atlanta, GA (December 2005)

## “Collaborative Brokerage, Generative Creativity, and Creative Success”

Carnegie Mellon University, Organizational Behavior Seminar, Pittsburg, PA (December 2005)  
Emory University, Organizational Behavior Seminar, Atlanta, GA (December 2005)  
University of Pennsylvania, Wharton Management Seminar, Philadelphia, PA (November 2005)  
INFORMS Conference, San Francisco, CA (November 2005)  
Harvard University, Graduate School of Business, Technology and Operations Management Seminar, Boston, MA (November 2005)  
Academy of Management Conference, Honolulu, HI (August 2005)  
[4th European Meeting on Applied Evolutionary Economics, Utrecht, Netherlands \(May 2005\)](#)  
[INSEAD, Fontainebleau, France \(May 2005\)](#)  
[Swiss Federal Institute of Technology, Lausanne, Switzerland \(May 2005\)](#)  
University of Michigan, Graduate School of Business, Ann Arbor, MI (May 2005)  
Harvard University, School of Applied Sciences, Information Technology Management Seminar, Boston, MA (November 2004)

## “Scanning the Commons: Evidence on the Benefits to Startups Participating in Open Standards Development”

Harvard University, Graduate School of Business, Conference on Open Source Innovation, Boston, MA (August 2008)  
University of Chicago, Graduate School of Business, Chicago, IL (November 2007)  
INFORMS Conference, Seattle, WA (November 2007)  
Harvard University, Graduate School of Business, Conference on Industry Self-regulation, Boston, MA (March 2007)  
Academy of Management Conference, Honolulu, HI (August 2005)

## “Brokerage, Boundary Spanning, and Leadership in an Open Innovation Community”

University of Chicago, Graduate School of Business, Chicago, IL (June 2004)  
Stanford University, Graduate School of Business, Stanford, CA (March 2004)  
University of California, Berkeley, Haas School of Business Innovation Seminar, Berkeley, CA (February 2004)  
Stanford University, Scandinavian Consortium for Organizational Research, Stanford, CA (February 2004)  
University of Maryland, Smith School of Business, Leading through Innovation Research Conference, College Park, MD (January 2004)  
Harvard University, School of Applied Sciences, Information and Technology Management Seminar (November 2003)  
Harvard University, Graduate School of Business, Technology and Operations Management Seminar, Boston, MA (November 2003)  
Academy of Management Conference, Seattle, WA (August 2003)

## “Why the Valley Went First: Aggregation and Emergence in Regional Collaboration Networks”

Harvard University, Graduate School of Business, Entrepreneurial Management Seminar, Boston, MA (March 2004)  
University of Pennsylvania, Wharton Technology Conference, Philadelphia, PA (March 2004)  
Harvard University, Graduate School of Business, Technology and Operations Management Seminar, Boston, MA (March 2004)  
[Santa Fe Institute Conference on Regional Economics, Monterrey, Mexico \(March 2004\)](#)

## “Small Worlds and Regional Innovation”

University of Chicago, Graduate School of Business, Chicago, IL (November 2004)  
INFORMS Conference, Denver, CO (October 2004)  
National Bureau of Economic Research, Cambridge, MA (May 2004)  
Academy of Management Conference, Seattle, WA (August 2003)  
Santa Fe Institute, Workshop on Network Evolution, Santa Fe, NM (May 2003)  
Harvard University, Government 3009 Applied Methods Seminar, Cambridge, (April 2002)  
Stanford University, Scandinavian Consortium for Organizational Research, Stanford, CA (February 2003)  
Harvard University, School of Applied Sciences, Information Technology Management Seminar, Boston, MA (December 2002)

## “Cut the Fat or Swing for the Fences? Budgetary vs. Innovative Search”

Utah-Brigham Young University Winter Strategy Conference, Salt Lake City, UT (March 2003)  
Hewlett Packard Laboratories, Palo Alto, CA (February 2003)  
Hewlett Packard Corporate Headquarters, Palo Alto, CA (February 2003)  
Agilent Laboratories, Palo Alto, (February 2003)  
Academy of Management Conference, Denver, CO (August 2002)

## “Complexity, Networks, and Knowledge Flow”

[4th European Meeting on Applied Evolutionary Economics, Utrecht, Netherlands \(May 2005\)](#)  
University of Pennsylvania, Wharton Technology Conference, Philadelphia, PA (April 2002)  
Academy of Management Conference, Denver, CO (August 2002)

## “Technological Diversity and Inventive Creativity”

Academy of Management Conference, Denver, CO (August 2002)  
Stanford University, Scandinavian Consortium for Organizational Research, Stanford, CA (March 2002)  
Harvard University, Graduate School of Business, Organizational Behavior Seminar, Boston, MA (March 2002)

## "Finding the Organizational Sources of Breakthrough Invention: The Story of Hewlett Packard's Ink Jet Invention”

[Gordon Conference on Solid State Ceramics, Kimball Union Academy, NH \(August 2001\)](#)  
Dupont Central Research and Development Laboratories, Wilmington, DE (April 2001)  
[INSEAD \(May 2000\), Fontainebleau, France \(May 2002\)](#)  
Massachusetts Institute of Technology, Sloan School of Management, Management of Innovation Seminar (March 2000)  
Harvard University, Graduate School of Business, Technology and Operations Management Seminar, Boston, MA (April 2000)  
University of Minnesota, Carlson School of Management, Minneapolis, MN (April 2000)  
University of Chicago, Graduate School of Business Strategy Workshop, Chicago, IL (June 2000)

## “Science and the Diffusion of Knowledge”

Harvard University, International Conference on Science, Technology and Innovation: Emerging International Policy Issues, Cambridge, MA (September 2002)  
National Bureau of Economic Research, Cambridge, MA (April 2001)  
Harvard University, Center for Research in the Social Sciences, Cambridge, MA (April 2001)  
Harvard University, Graduate School of Business, Technology and Operations Seminar, Boston, MA (April 2001)

## “Science As a Map in Technological Search”

Association for Laboratory Automation Annual Conference, Boston, MA (June 2004)  
Santa Fe Institute, Founding Workshop: Innovation in Natural, Experimental, and Applied Evolution, Santa Fe, NM (February 2004)  
Stanford University, Social Science and Technology Seminar, Stanford, CA (February 2003)  
Carnegie Mellon University Strategy Conference, Pittsburg, PA (October 2002)  
[Gordon Conference on Solid State Ceramics, Kimball Union Academy, NH \(August 2001\)](#)  
Dupont Central Research and Development Laboratories, Wilmington, DE (April 2001)  
Massachusetts Institute of Technology, Sloan School of Management, Operations Seminar, Boston, MA (November 2000)  
[Academy of Management Conference, Toronto, ON \(August 2000\)](#)  
Massachusetts Institute of Technology, Sloan School of Mngt, Operations Management Summer Camp, Boston, MA (July 2000)

National Bureau of Economic Research, Cambridge, MA (April 2000)

## “Invention as a Complex Adaptive System: Evidence from Patent Data”

Massachusetts Institute of Technology, Sloan School of Management, Management of Innovation Seminar, Boston, MA (April 2000)  
Academy of Management Conference, Chicago, IL (August 1999)

## “A Prospect Theory Model of R&D Allocation”

Massachusetts Institute of Technology, Sloan School of Management, Economic Sociology Seminar, Boston, MA (May 2001)  
National Bureau of Economic Research, Cambridge, MA (December 2000)  
Harvard University, Center for Research in the Social Sciences, Cambridge, MA (December 2000)  
Harvard University, Graduate School of Business, Technology and Operations Seminar, Boston, MA (December 2000)

## “Explaining the Source and Tempo of Technological Variation: Recombinant Learning and Exhaustion in Technological Evolution”

Academy of Management Conference, San Diego, CA (August 1998)  
Massachusetts Institute of Technology, Sloan School of Management, Boston, MA (March 1998)  
Harvard University, Graduate School of Business, Technology and Operations Seminar, Boston, MA (March 1998)  
CCC Doctoral Consortium, Harvard University, Boston MA (February 1998)  
University of Minnesota, Carlson School of Management, Minneapolis, MN (February 1998)  
University of Michigan, Graduate School of Business Strategy Seminar, Ann Arbor, MI (January 1998)  
University of California at San Diego, Graduate School of International Relations and Pacific Studies, San Diego, CA (Dec 1997)  
University of Texas at Dallas, Dallas, TX (December 1997)