Curriculum Vitæ

Ziad Obermeyer

Acting Associate Professor of Health Policy and Management
School of Public Health, University of California at Berkeley

Date Prepared: 28 July 2018

Contact

Division of Health Policy and Management
School of Public Health
University of California at Berkeley
2121 Berkeley Way
Berkeley, CA 94720-7360
Phone: +1 (510) 664 5390
Email: zobermeyer@berkeley.edu

Education

2001	Harvard College, Cambridge, MA A.B., History and Science (*magna cum laude* with highest honors in field)
2002	University of Cambridge, Cambridge, UK M.Phil., History and Philosophy of Science
2008	Harvard Medical School, Boston, MA M.D. (*magna cum laude*)
2012	Brigham and Women's & Massachusetts General Hospitals, Boston, MA Emergency Medicine (clinical residency)

Faculty Positions

5/13-6/18	Assistant Professor of Emergency Medicine and Health Care Policy Harvard Medical School
7/18-	Acting Associate Professor of Health Policy and Management UC Berkeley, School of Public Health

Other Professional Experience

8/02-8/03   Business Analyst
             McKinsey & Co., Florham Park, NJ

9/03-7/07   Research Associate
             Harvard Initiative for Global Health, Cambridge, MA

7/07-6/08   Research Scientist
             Institute for Health Metrics and Evaluation, Seattle, WA

07/12-6/ 18 Associate Physician, Emergency Medicine
             Brigham and Women's Hospital, Boston, MA

07/12-6/18   Affiliated Faculty
             Harvard Institute for Quantitative Social Science, Cambridge, MA

12/13-6/18   Associate Faculty
             Ariadne Labs, Boston, MA

6/15-6/18   Faculty Member
             Dana Farber/Harvard Cancer Center, Boston, MA

1/2016-   Affiliate
             ideas42, New York, NY

11/2016   Visiting fellow
             University of Chicago Booth School of Business, Chicago, IL

7/2018-   Research economist
             National Bureau of Economic Research, Cambridge, MA

Honors and Prizes

1998-2000   John Harvard and Harvard College Scholarships
             Harvard College

2001   Phi Beta Kappa
             Harvard College

2001   Rothschild Award (Best Senior Thesis)
             Harvard University Department of the History of Science, Cambridge, MA

2001   Frank Knox Scholarship ($30,000)
             Harvard College

2004   Summer Research Award ($2,000)
             Harvard Medical School

2004	Certificate of Distinction in Teaching Harvard College
2008	Rose Seegal Prize Harvard Medical School
2010	Richard C. Wuerz Award ($2,000) Emergency Medicine, Brigham and Women's Hospital, Boston, MA
2012	Early Independence Award Office of the Director, National Institutes of Health, Bethesda, MD
2014	Certificate of Excellence in Tutoring Harvard Medical School
2015	Young Investigator Award Society for Academic Emergency Medicine
2018	Peter K. Ranney Innovation Award ($10,000) World Medical Innovation Forum

Professional Service

2013-	Institutional Review Board National Bureau of Economic Research, Cambridge, MA
2013-16	Scientific Committee African Federation of Emergency Medicine
2013-16	Executive Committee Acute Care Development Consortium
2016-17	Advisory Committee on Emergency and Post-Conflict Health Systems World Bank Group

Current Licensure and Certification

2011-	Massachusetts Medical License
2013-	Diplomate, American Board of Emergency Medicine

Teaching and Training

2012-2018	Clinical supervision and training: Emergency medicine Brigham and Women's Hospital

2016	Data science and medicine (ECON 1160) Harvard University
2018	Econometric Methods for Applied Research II (Ec 2115 / HKS API-115) Harvard Kennedy School
2018	Theories and Methods in Health Policy and Health Services Research (PH 237A) School of Public Health, UC Berkeley

Editorial Activities

General interest and general medical journals: *JAMA, Lancet, New England Journal of Medicine, PNAS, Science Translational Medicine, The BMJ*

Computer science conferences: *Machine Learning and Health Care (2016, 2017), Association for Computing Machinery Conference on Bioinformatics, Computational Biology, and Health Informatics, Workshop on Methods and Applications in Healthcare Analytics (2016)*

Specialty journals & presses: *Academic Emergency Medicine, Bulletin of the World Health Organization, Cambridge University Press (Mathematical Sciences), Critical Care, BMJ Global Health, BMJ Supportive and Palliative Care, Demography, EMJ, Healthcare: The Journal of Delivery Science and Innovation, JAMA Oncology, Journal of Clinical Oncology, Journal of Medical Economics, Journal of Peace Research, NPJ: Precision Oncology, Pancreas, PLoS Medicine, Population and Development Review, Prehospital and Disaster Medicine, World Journal of Surgery*

Associate editor: *Emergency Medicine Journal* (2015-17)

Report of Scholarship

Peer reviewed research

1. Ottmani S, **Obermeyer Z**, Bencheikh N, Mahjour J. Beliefs and behaviors surrounding tuberculosis in Morocco. *Eastern Mediterranean Health Journal*. 2008 Mar-Apr;14(2):298-304.

2. **Obermeyer Z**, Abbott-Klafter J, Murray CJL. Has the DOTS strategy impacted case detection or treatment success? An empirical assessment. *PLoS One*. 2008 Mar 5;3(3):e1721.

3. Gakidou E, Nordhagen S, **Obermeyer Z**. Coverage of cervical cancer screening in 57 countries: Low average levels and large inequalities. *PLoS Medicine*. 2008 Jun 17;5(6):e132.

4. **Obermeyer Z**, Murray CJL, Gakidou E. Fifty years of violent war deaths from Vietnam to Bosnia: Analysis of data from the world health survey programme. *BMJ*. 2008 Jun 28;336(7659):1482-6.

5. **Obermeyer Z**, Rajaratnam JK, Park CH, Gakidou E, Hogan MC, Lopez AD, Murray CJL. Measuring adult mortality using sibling survival: A new analytical method and new results for 44 countries, 1974-2006. *PLoS Medicine*. 2010 Apr 13;7(4):e1000260.

6. **Obermeyer Z**, Makar M, Abujaber S, Dominici F, Cutler DM. Association Between the Medicare Hospice Benefit?and Health Care Utilization and Costs for Patients?With Poor-Prognosis Cancer. *JAMA*. 2014 12 Nov; 312(18):1888-1896.

7. Bobb J, **Obermeyer Z**, Wang Y, Dominici F, Cutler DM. Cause-Specific Risk of Hospital Admission Related to Extreme Heat in Older Adults. *JAMA*. 2014 24/31 Dec; 312(24):2659-2667.
    * Paper of the year, National Institute of Environmental Health Sciences, National Institutes of Health (2015)

8. Makar M, Ghassemi M, Cutler DM, **Obermeyer Z**. Short-term Mortality Prediction for Elderly Patients Using Medicare Claims Data. *International Journal of Machine Learning and Computing*. 2015 Jun; 5(3): 192-7.

9. Ezzati M, **Obermeyer Z**, Tzoulaki I, Mayosi BM, Elliott P, Leon DA. The contributions of risk factor trends to cardiovascular mortality trends. *Nature Reviews Cardiology*. 2015 16 Jun; 82: 1-23.

10. Powers B, Makar M, Jain SH, **Obermeyer Z**. Cost Savings Associated with Expanded Hospice Use in Medicare. *Journal of Palliative Medicine.* 2015 May; 18(5): 400-1.

11. **Obermeyer Z**, Powers B, Makar M, Keating NL, Cutler DM. Physician Characteristics Strongly Predict Patient Enrollment In Hospice. *Health Affairs*. 2015 Jun; 34(6): 993-1000.
    * Recognized as "One of the year's major achievements in clinical cancer research and care," American Society of Clinical Oncology's Clinical Cancer Advances (2016)

12. Liu S, Chang Y, **Obermeyer Z**, Narayan K. Frequency of ED revisits and death among older adults after a fall. *American Journal of Emergency Medicine*. 2015 Aug; 33(8): 1012-8.

13. **Obermeyer Z**, Abujaber S, Makar M, Stoll S, Kayden SR, Wallis LA, Reynolds TA. Emergency care delivery in 60 low- and middle-income countries: Systematic review and descriptive analysis. *Bulletin of the World Health Organization*. 2015 Aug 1; 93(8):577-586.

14. **Obermeyer Z**, Clarke AC, Makar M, Schuur JD, Cutler DM. Association of the Medicare Hospice Benefit with Emergency Utilization. *Journal of the American Geriatrics Society*. 2016 Feb; 64(2): 323-9.

15. Niedzwiecki M, Wilson M, Cutler DM, **Obermeyer Z**. Short-term Outcomes for Medicare Beneficiaries after Low-acuity Visits to Emergency Departments and Clinics. *Medical Care*. 2016 May; 54(5): 498-503.

16. Chang CJ, Abujaber S, Reynolds T, Camargo CA, **Obermeyer Z**. Burden of emergency conditions and emergency care utilization: New estimates from 40 countries. *Emergency Medicine Journal*. 2016 Nov;33(11):794-800.

17. Abujaber S, Chang CJ, Reynolds T, Mowafi H, **Obermeyer Z**. Developing metrics for emergency care research in low- and middle-income countries. *African Journal of Emergency Medicine*. 2016 Sep;6(3): 116–124.

18. Lakin JR, Robinson MG, Bernacki RE, Powers BW, Block SD, Cunningham R, **Obermeyer Z**. Predicting One-Year Mortality for High-Risk Primary Care Patients Using the "Surprise" Question. *JAMA Internal Medicine*. 2016 Dec 1;176(12):1863-1865.

19. Chang B, Pany MJ, **Obermeyer Z**. Early death after emergency department discharge in patients with psychiatric illness. *American Journal of Emergency Medicine*. 2016 Nov 17. pii: S0735-6757(16)30868-3.

20. Venkatesh A, Mei H, Kocher K, **Obermeyer Z**, Spatz E, Granovsky M, Rothenberg C, Krumholz H, Lin Z. Identification of Emergency Department Visits in Medicare Administrative Claims: Approaches and Implications. *Academic Emergency Medicine*. 2017 Apr;24(4):422-431.

21. **Obermeyer Z**, Cohn B, Wilson M, Jena AB, Cutler DM. Early death after discharge from emergency departments: analysis of national US insurance claims data. *BMJ*. 2017 Feb 1;356: 239.

22. Asaria P, Elliott P, Douglass M, **Obermeyer Z**, Soljak M, Majeed A, Ezzati M. Half of all acute myocardial infarction deaths occur in the 28 days following hospitalisation and in one third of these acute myocardial infarction is not recorded during the admission. *Lancet Public Health*. 2017 Apr; 2(4): 191–201.

23. Ouchi K, Jambaulikar G, George NR, Xu W, **Obermeyer Z**, Aaronson EL, Schuur JD, Schonberg MA, Tulsky JA, Block SD. The "Surprise Question" Asked of Emergency Physicians May Predict 12-Month Mortality among Older Emergency Department Patients. *J Palliat Med*. 2017 Aug 28.

24. **Obermeyer Z**, Samra JK, Mullainathan S. Individuals' body temperatures vary meaningfully and predict mortality. *BMJ*. 2017 Dec 13;359: 5468.

25. Ouchi K, Jambaulikar G, George NR, Xu W, **Obermeyer Z**, Aaronson EL, Schuur JD, Schonberg MA, Tulsky JA, Block SD. The "Surprise Question" Asked of Emergency Physicians May Predict 12-Month Mortality among Older Emergency Department Patients. *J Palliat Med*. 2018 Feb;21(2):236-240.

26. Finkelstein A, Einav L, Mullainathan S, **Obermeyer Z**. Predictive modeling of US healthcare spending in late life. *Science*. 2018 Jun 29;360(6396):1462-1465.

27. Elfiky A, Pany MJ, Parikh RB, **Obermeyer Z**. Development and application of a machine learning approach to assess short-term mortality risk in patients with cancer starting chemotherapy. *JAMA Network Open*. 2018 1, e180926 (preprint: bioRxiv 204081).
    * Awarded "Most promising idea," Dana Farber Junior Investigators in Cancer Research Symposium (2016)

Perspectives and commentaries

1. Mowafi H, Dworkis D, Bisanzo M, Hansoti B, Seidenberg P, **Obermeyer Z**, Hauswald M, Reynolds TA. Making Recording and Analysis of Chief Complaint a Priority for Global Emergency Care Research in Low-income Countries. *Academic Emergency Medicine*. 2013 Dec;20(12):1241-5.

2. Reynolds TA, Bisanzo M, Dworkis D, Hansoti B, **Obermeyer Z**, Seidenberg P, Hauswald M, Mowafi H. Research Priorities for Data Collection and Management Within Global Acute and Emergency Care Systems. *Academic Emergency Medicine*. 2013 Dec;20(12):1246-1250.

3. Brown JA, Grudzen C, Kyriacou D, **Obermeyer Z**, Quest T, Rivera D, Stone S, Wright J, Shelburne N. The Emergency Care of Patients with Cancer. *Annals of Emergency Medicine*. 2016 Dec;68(6):706-711.

4. Kleinberg J, Ludwig J, Mullainathan S, **Obermeyer Z**. Prediction Policy Problems. *American Economic Review: Papers and Proceedings* 2015, 105(5): 491–495.

5. **Obermeyer Z**, Emanuel E. Predicting the Future: Big Data, Machine Learning, and the Future of Clinical Medicine. *NEJM*. 2016 Sep 29;375(13):1216-9.

6. Mullainathan S, **Obermeyer Z**. Does Machine Learning Automate Moral Hazard and Error? *American Economic Review: Papers and Proceedings*. 2017 107(5): 1–5.

7. **Obermeyer Z**. Is less more, or is it less? The growing evidence on high-intensity hospital care. *Emergency Medicine Journal*. 2017 Oct;34(10):698-699.

8. **Obermeyer Z**, Lee TH. Lost in Thought—The limits of the human mind and the future of medicine. *NEJM*. 2017 Sep 27;377(13):1209-11.

Report of Funded Projects

2007-08   Measuring adult mortality in the developing world
             Bill & Melinda Gates Foundation / Institute for Health Metrics and Evaluation,
             Seattle, WA
As part of the larger Global Burden of Disease effort ($110 million), this study developed new methods for measuring mortality in the developing world on the basis of household survey data.

2011-13   Measuring death after discharge from the Emergency Department
             Center of Excellence in Quality and Patient Safety, Boston, MA
             Department of Emergency Medicine, Brigham and Women's Hospital
This study aims to identify patients who die within two weeks of being sent home from an Emergency Department visit, and understand clinical factors that might predict these events.

2012-17   Unexpected death after medical encounters: Measurement, reporting, and
             analysis
             Office of the Director, National Institutes of Health / DP5 OD012161
             PI ($1,229,397)

The project studies patients who die unexpectedly after being sent home from a medical encounter. In order to reliably identify expected and unexpected deaths, the project also aims to improve existing methods for predicting short-term mortality in general outpatients. Finally, rate of early unexpected death after discharge is proposed as a novel outcome measure of the quality of health services.

2014-17   Adaptive Quality Measurement
             Arnold Foundation
             Co-Investigator
As part of a larger grant ($10 million) this project aims to develop and pilot test an innovate approach to quality measurement, based on adaptive approaches and grounded in measurement science. The new approach will not be overly burdensome or easily gameable. Because a single measurement system cannot serve all purposes, we will develop a measurement system intended to ensure system level quality of care in systems held accountable for economic and clinical outcomes (e.g. in ACOs or MA plans).

2014-16   Population health analytics: Identifying phenotypes for end-of-life care
             Dana Farber Cancer Institute
             Co-Investigator ($75,000)
The project seeks to optimize end of life care for a cohort of patients undergoing treatment for cancers. We use machine learning to predict six-month prognosis, and feed predictions back to treating oncologists. We track uptake of palliative and hospice care, chemotherapy and surgical interventions, and place of death in these patients, and compare these outcomes to a control group of patients about whom no prognostic information was given to physicians.

2015-16   Bad incentives or bad predictions? Rethinking low-value health care using
             machine learning
             Harvard University Interfaculty Collaboration Fund
             Co-PI ($50,000), with Mullainathan S
This interdisciplinary project combines insights from behavioral economics and clinical medicine with machine learning, to identify human misjudgments in medical practice. For a set of important medical decisions, we use machine learning to predict the utility of a procedure or test, and compare this prediction to the physician's decision. This method can identify both mistakes, and predictable mistakes, and help design interventions to reduce them.

2015-16   Improving the Effectiveness and Efficiency of High-Risk Care Management
             through Machine Learning
             National Institute for Health Care Management
             PI ($50,000)
This project applies machine learning to identify individuals who will benefit from so-called 'care management programs' for high-risk or high-cost patients. The aim is to create more effective and efficient programs, and amplify the ability of these initiatives to provide patients with better care at lower cost.

2015-18   Strengthening emergency care in conflict zones
             World Bank
             Co-PI ($485,000), with Mowafi H
This project seeks to assess needs for emergency care in conflict zones in the Middle East. It will collect preliminary data from emergency departments, and develop a focused training and

quality improvement intervention as a function of needs. This intervention will be deployed in a block-randomized fashion to half of the hospitals in which data collection is taking place, to measure impact.

2015-17   Predicting acute complications in cancer with machine learning
         National Cancer Institute
         PI, Intergovernmental Personnel Agreement ($90,000)

In collaboration with researchers at the Division of Cancer Control and Population Sciences, this projects will use large observational datasets—Medicare claims, electronic health record data—to understand and predict acute complications of cancer care. This will range from medical complications like infections and venous thromboembolic disease, to complications of treatment, especially novel chemotherapeutic agents.

2015-18   Physician judgment and machine predictions: understanding and   improving medical decisions using machine learning
         Robert Wood Johnson Foundation
         Co-PI ($499,600), with Navathe A

This project seeks to improve the value of care and reduce health disparities by developing a set of powerful algorithms to consistently improve upon human clinical judgments. Our test case will be detecting sepsis in patients in the emergency department of the University of Pennsylvania Health System. We will measure the potential impact of improved decision-making on both low-value care and health disparities.

2016-18   Learning more about effectiveness for less: Applying novel statistical techniques
         to claims data
         National Institute on Aging, P01 AG005842 (Pilot)
         Co-PI ($50,000) with Baicker K

We aim to use Medicare claims data to quantify experimental effects for drugs as they are prescribed, using "incidental experimentation" and the tools of machine learning. These data are uniquely well-suited to this analysis, both because of the scope of the information captured and the scale of the population represented. We will draw on the large literature on doctor prescription pattern variation as well as the natural experiment of drug introduction to generate difference-in-difference and IV strategies.

2016-17   Incorporating physiological sensor data into household surveys
         World Bank
         PI ($32,000)

The advent of sensors and wearables for physiological monitoring could transform how we collect data in household surveys. Just as dried blood allowed us to test for HIV or diabetes, physiological monitors like accelerometers, ECG, pulse oximeters, or digital retinal photography could allow us to screen reliably for a wide range of other conditions, including COPD, prior heart attack, and stroke. This project aims to review the literature and do preliminary field testing on high-performance physiological sensors, to lay the groundwork for incorporation into a large World Bank funded household survey.

2017-18   Low-Value Care: Moral Hazard or Mis-Prediction?
         Pershing Square Fund for Research on the Foundations of Human Behavior
         Initiative, Harvard
         Co-PI ($40,000) with Mullainathan S

Economics provides a compelling explanation for why the return on health care dollars can be low: moral hazard, i.e. physicians provide too much care because they are incentivized to do so. The proposed work will provide another explanation for low-value care, grounded in a behavioral perspective on medical decision-making: doctors make mistakes. Critically, this account is capable of accounting for potential under-use, not just over-use. Deciding who should receive care is hard and biases can lead to the wrong people being tested: this is neither over- nor under-use, but misuse. We will examine both sides of this coin in a concrete decision: deciding who should be tested for acute coronary syndromes in the emergency setting.

2017-18   Assessing the Overuse and Underuse of Diagnostic Testing
               National Institute on Aging P30 AG012810 (Pilot)
               Co-PI ($50,000) with Baicker K

Low-value health care—care that provides little health benefit in light of its costs—is a central concern for policymakers. Diagnostic testing is a particularly important example: the use of high-cost diagnostic tests has skyrocketed, but for many tests the "yield"—the frequency with which tests identify new diagnoses or trigger effective interventions—appears low. This project draws on advances in machine learning to (1) gauge the extent of over- and under-use of diagnostic tests nationally using Medicare claims, and (2) develop the basis for a clinical decision support tool using data from the Harvard hospital system.

2017-18   Integrated Model of Palliative and Primary Care in Seriously Ill Older Adults
               National Institute on Aging R56 AG055728
               Co-PI ($382,595) with Temel J

Despite major advances in palliative care for patients with specific diseases, we know little about how to deliver palliative interventions 'upstream'—earlier in the disease trajectory for older adults with multiple chronic conditions. This project applies advanced predictive modeling techniques ('machine learning') to identify older patients in a primary care setting who would benefit most from palliative care: those whose complex interplay of chronic conditions puts them at high risk of near-term death. Building on our team's strong infrastructure for clinical trials in palliative care, we will enroll the highest-risk patients in a randomized controlled trial, comparing usual primary care to primary care integrated with palliative care.

2017-22   Assessing the Overuse and Underuse of Diagnostic Testing
               National Institute on Aging P01 AG005842 (R01)
               Co-PI (R01 budget TBD) with Baicker K

This project draws on advances in machine learning to gauge the extent of over- and under-use of diagnostic tests nationally, and to develop the basis for a clinical decision support tool. Building on early evidence that machine learning algorithms combined with massive datasets can make highly accurate predictions, we will assess the extent to which doctors are testing patients with predictably low benefit or failing to test patients with predictably high benefit. After identifying the most promising opportunities to optimize testing using Medicare claims, we will use electronic health records (EHR) to predict yield using data available to doctors at the time of decision. This will pave the way for real-time clinical decision support tools.

Invited Presentations

No presentations below were sponsored by outside entities. Includes scheduled presentations.

2007	Measuring war deaths: Data from the World Health Surveys Harvard Humanitarian Health Conference, Cambridge, MA
2007	Has the Directly Observed Treatment Short course (DOTS) strategy impacted tuberculosis case detection or treatment success? International Health Economics Association, Copenhagen, Denmark
2007	Mortality measurement using sibling survival from household surveys Population Health Metrics Consortium, Hyderabad, India
2008	Tuberculosis impact evaluation Global Fund to Fight AIDS, TB, and Malaria, Glion, Switzerland
2008	Estimating war mortality from surveys Centre for Research on the Epidemiology of Disasters, Brussels, Belgium
2013	Documenting the burden of acute disease African Federation for Emergency Medicine, Cape Town, South Africa
2013	Unexpected death after medical encounters NIH Director's Early Independence Award Symposium, Bethesda, MD
2013	Predictive modeling at the end of life Institute for Health Metrics and Evaluation, University of Washington, Seattle, WA
2013	Improving Prognosis Ariadne Labs, Boston, MA
2014	Accounting for care at the end of life Department of Health Care Policy, Harvard Medical School, Boston, MA
2014	Current debates on costs and hospice use at the end of life Grand Rounds, Palliative Care, Massachusetts General Hospital, Boston, MA
2014	New approaches to predicting mortality with routine administrative data Department of Primary Care and Public Health, Imperial College, London, UK
2014	Emergency care delivery in low- and middle-income countries. African Conference on Emergency Medicine, Addis Ababa, Ethiopia
2014	Emergency care delivery in low and middle income countries Grand Rounds, Department of Emergency Medicine, Yale School of Medicine, New Haven, CT
2014	Clinically relevant predictive analytics Weill Cornell School of Medicine, Department of Healthcare Policy and Research, New York, NY
2015	Unexpected death and misdiagnosis in the ED: Insights from US Medicare data.

National conference on emergency care, Helsingborg, Sweden

2015   Measuring coverage of emergency care and essential surgery.
World Health Organization, Bellagio, Italy

2015   Predicting mortality in Medicare beneficiaries with cancer
Outcomes Research Group, Dana Farber/Harvard Cancer Center, Boston, MA

2015   Rethinking emergency care
TEDx Harvard, Cambridge, MA

2015   End of life care and the new clinical data sciences: understanding and augmenting decision making with machine learning
Associate Secretary for Planning and Evaluation, Department of Health and Human Services, Washington, DC

2015   Understanding clinical decisions at the end of life: insights from national Medicare claims
National Cancer Institute, Symposium on Oncologic Emergencies, Bethesda, MD

2015   Cancer-related dyspnea: understanding and improving clinical diagnosis
National Cancer Institute, Symposium on Oncologic Emergencies, Bethesda, MD

2015   Clinical decisions at the end of life: insights from national Medicare claims
National Heart, Lung, and Blood Institute, Big Data Symposium, Bethesda, MD

2015   Predicting mortality for Medicare Beneficiaries with Cancer
American Medical Informatics Association, San Francisco, CA

2015   Are we over-testing? Using machine learning to understand physician decisions
Department of Healthcare Management, University of Pennsylvania, Philadelphia, PA

2016   Are we over-testing? Using machine learning to understand physician decisions
Department of Emergency Medicine, New York University, New York, NY

2016   Are we over-testing? Using machine learning to understand physician decisions
Department of Health Policy, Cornell Medical School, New York, NY

2016   Bits, Bytes, and Better Care: Technology-Enabled Innovations for Advanced Care
National Summit on Advanced Illness Care, National Academy of Sciences, Washington, DC

2016   Are we over-testing? Using machine learning to understand physician decisions
Applied Microeconomics, Chicago Booth School of Business, Chicago, IL

2016   Machine learning and clinical oncology
Surveillance Research Program, National Cancer Institute, Rockville, MD

2016   Are we over-testing? Understanding doctors' decisions with machine learning
Bioinformatics, Harvard Medical School, Boston, MA

2016   Are we over-testing? Understanding doctors' decisions with machine learning
Ariadne Labs, Boston, MA

2016   Machine learning for high-performance health systems
Skåne University Hospital seminar, Malmö, Sweden

2016   Strengthening health sector resilience in fragile, conflict and violence settings
Global Symposium on Health Systems Research, Vancouver, BC, Canada

2017   Will machine learning simply automate physician biases and moral hazard?
American Economic Association, Chicago, IL

2017   Machine learning and clinical science
Seminar, Department of Internal Medicine, Hospital da Luz, Lisbon, Portugal

2017   Predictive health policy and machine learning
Institute of Public Administration / Department of the Prime Minister and Cabinet,
Canberra, Australia

2017   Biological age and machine learning
Department of Internal Medicine, Lund University, Malmö, Sweden

2017   Uses and misuses of machine learning in medicine
TIMI Study Group, Brigham and Women's Hospital, Boston, MA

2017   Uses and misuses of machine learning in medicine
Machine Learning & AI in Healthcare Conference, Boston, MA

2017   Uses and misuses of machine learning in medicine
The Dartmouth Institute, Hanover, NH

2017   Uses and misuses of machine learning in medicine
IBM Research, Yorktown, NY

2017   Uses and misuses of machine learning in medicine
Briefing to Jason Study Group, La Jolla, CA

2017   Can a machine predict your death? Should it?
TEDx Boston, Boston, MA

2017   Are we over-testing? Using machine learning to understand physician decisions
Health Economics, University of Chicago, Chicago, IL

2017   Machine learning for understanding social systems
Microsoft Research New England, Cambridge, MA

2018	Machine learning and clinical science Recenti Progressi in Medicina, Pensiero Scientifico, Rome, Italy
2018	Are we over-testing? Using machine learning to understand physician decisions UC Berkeley School of Public Health, Berkeley, CA
2018	Are we over-testing? Using machine learning to understand physician decisions Harvard Kennedy School of Government, Cambridge, MA
2018	Are we over-testing? Using machine learning to understand physician decisions Harris School of Public Policy, University of Chicago, Chicago, IL
2018	Are we over-testing? Using machine learning to understand physician decisions Program of Applied Translational Research Seminar, Yale School of Medicine
2018	Interpreting the left hand side of machine learning models NorthEast Computational Health Summit 2018 on AI in Healthcare, MIT-IBM Watson AI Lab, Cambridge, MA
2018	A machine learning algorithm to increase quality and reduce costs World Medical Innovation Forum, Boston, MA * Won Peter K. Ranney Innovation Award.
2018	The limits of the human mind and the future of medicine Health Leadership Program, Harvard Kennedy School, Cambridge, MA
2018	Are we over-testing? Using machine learning to understand physician decisions Meeting on Machine Learning and Health, National Bureau of Economic Research, Cambridge, MA
2018	Does high healthcare spending at end of life imply waste? Max Planck/NBER Workshop on Ageing and Health, Munich, Germany
2017	Machine learning for understanding social systems Verily, Cambridge, MA
2018	Are we over-testing? Using machine learning to understand physician decisions Department of Economics, Berkeley, CA
2018	Are we over-testing? Using machine learning to understand physician decisions Haas School of Business, Berkeley, CA