The Faculty of Medicine of Harvard University

Curriculum Vitae

Date Prepared: September 18, 2018

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Place of Birth: United States

Education:

2003	BS	Genetics	Iowa State University
2008	MS	Biostatistics	University of Minnesota
2011	PhD	Biostatistics	University of Minnesota
		Thesis advisor: Bradley P. Carlin	

Faculty Academic Appointments:

9/2011–3/2017	Assistant Professor	Health Care Policy	Harvard Medical School
4/2017–	Associate Professor	Health Care Policy	Harvard Medical School

Committee Service:

Local

2015–	Standing Committee on Health Policy	Harvard University
2015–		Member
2016–	Curriculum Development Board, Essentials of Medicine Part I	Harvard Medical School
2016–		Member
2016	Junior Faculty Search Committee	Department of Health Care Policy
2016		Member
2016–	Dissertation Committees	Harvard University
2016–18		Member, Jamie Daw Committee
2016–18		Member, Jeannie Biniek Committee
2016–18		Member, Christine Baugh Committee
2017–		Chair, Kate Lofgren Committee

National

2015–16	Program Committee	Annual Meeting of the Eastern North American Region (ENAR) of the International Biometric Society 2016
	2015–2016	Associate Chair
2016–	Conflict of Interest Mitigation Panel	RAND Evaluation of Coverage to Care
	2016–	Member
2016–	Early Career Reviewer Program	NIH Center for Scientific Review (awaiting assignment)
	2016–	
2017–18	Technical Advisory Panel	Urban Institute Program on Retirement Policy

	2017–18	Member
2018–21	Regional Committee (RECOM)	Eastern North American Region of the International Biometric Society
	2018–21	Member

International

2014–15	Scientific Organizing Committee	International Conference on Health Policy Statistics (ICHPS)
	2014–2015	Member
2017	Outreach Committee	ICHPS 2018
	2017	Member

Professional Societies:

2009–	American Statistical Association	Member, Biometrics Section
	2009–2010	Member, Twin Cities Chapter
	2009–	Member, Section on Bayesian Statistical Science (SBSS)
	2009–	Member, Biopharmaceutical Section
	2011–	Member, Health Policy Statistics Section (HPSS)
	2013–	Member, Boston Chapter
	2014–2015	Secretary, HPSS
	2014–	Member, Section of Medical Devices and Diagnostics
	2019–	Chair-elect, HPSS
	2018	Reviewer, HPSS Student Paper Awards
	2018–	Member, COPSS Florence David Award Committee
2009–	International Biometric Society	Member
	2009–	Member, Eastern North American Region (ENAR)
2010–	International Society of Bayesian Analysis	Member
2011–13	International Statistics Institute	Member
2012–	Institute of Mathematical Statistics	Member
2016–17	AcademyHealth	Member

Grant Review Activities:

2014–	External peer review of funding proposals	Medical Research Council, UK
	2014–	Ad hoc Reviewer
2017–	Biobehavioral and Behavioral Processes Integrated Review Group, R01/R21 Special Emphasis Panel	NIH
	2017–	Ad hoc Member
2018–	External peer review of funding proposals	National Science Foundation
	2018–	Ad hoc Reviewer
2018–	External peer review of funding proposals	Economic and Social Research Council, UK
	2018–	Ad hoc Reviewer

Editorial Activities:

Ad hoc Reviewer

Annals of Applied Statistics
Annals of Internal Medicine
Biostatistics
BMC Medical Research Methodology
Computational Statistics and Data Analysis
Circulation: Cardiovascular Genetics
Circulation: Cardiovascular Quality and Outcomes
Epidemiology
Health and Quality of Life Outcomes
Health Services and Outcomes Research Methodology
Health Services Research
JAMA Internal Medicine
Journal of General Internal Medicine
Journal of Health Economics
Journal of the American Statistical Association
Journal of the Royal Statistical Society
Medical Care
Medical Decision Making
Naval Research Logistics
Pharmacoepidemiology and Drug Safety (recognized as a top reviewer, 2015 & 2016)
Quality of Life Research
Statistics and Public Policy
Statistics in Medicine

Other Editorial Roles

2013–15	Editorial Board	Medical Decision Making

Honors and Prizes:

2000	National Merit Scholar	National Merit Scholarship Corp	
2003	Phi Beta Kappa	Iowa State University	
2005	Dean's Scholar	University of Minnesota School of Public Health	
2009	Outstanding Teaching Assistant Award	Division of Biostatistics, University of Minnesota School of Public Health	
2010	James R. Boen Award	Division of Biostatistics, University of Minnesota School of Public Health	Achievements in applied biostatistics
2010	Student Paper Award	Section on Bayesian Statistical Science, American Statistical Association	Research on Bayesian methodology
2010–11	Doctoral Dissertation Fellowship	University of Minnesota Graduate School	
2011	Young Investigator Travel Award	Institute of Mathematical Statistics and International Society of Bayesian Analysis (ISBA)	To attend the ISBA Annual Meeting
2011	Student Travel Award	University of Texas MD Anderson Cancer Center	To attend the Bayesian Biostatistics Conference

2011	Student Travel Award	American Statistical Association	To attend the International Statistics Institute World Congress
2011	Jacob E. Bearman Award	Division of Biostatistics, University of Minnesota School of Public Health	Outstanding academic and professional achievement
2016	Finalist, Annual Research Award	National Institute for Health Care Management Foundation	For McWilliams, Hatfield, et al. 2016 NEJM (below)
2018	Award for Excellence in Methodology	International Society for Pharmacoeconomics and Outcomes Research	For Hatfield et al. 2017 Med Decis Making (below)

Report of Funded and Unfunded Projects

Funding Information:

Past

2009–14   Income Effects and Current Law Forecasts of Health Care Spending Growth
NIH R01 AG034417-01
Co-Investigator (PI: Michael Chernew)
This project addresses forecasting health care spending in light of forces expected to impact future growth, such as changing generosity of benefits and health technology. We will construct a microsimulation model of Medicare spending that focuses on the extent to which current-law cost sharing and financing rules may slow spending growth in the future, when premiums and out-of-pocket obligations will constitute a significant share of disposable income for many elderly Americans.

2011–14   The Medical Device Epidemiology Network (MDEpiNet) Methodology Center
Chickasaw Nation Industries/FDA HHSF223201110172C
Co-Investigator (PI: Sharon-Lise Normand)
This center will develop and apply novel statistical and epidemiological methods to monitoring the safety and effectiveness of medical devices. Investigators will identify medical devices for post-market surveillance, develop statistical methods for inferring causal effects of the selected medical devices, and demonstrate the implementation of a unique device identifier within a hospital system.

2014   Durata and Riata ST Optim ICD Lead Independent Multicenter Study
Minneapolis Heart Institute Foundation
Principal Investigator (total direct costs $26440)
This prospective multicenter study will examine the failure modes and longevity of implantable cardioverter-defibrillator leads. In addition to clinical variables, detailed lead failure data will be collected. Phase I of this study is a retrospective enrollment of patients implanted or followed at each clinical center. Phase II will follow these patients prospectively to monitor leads and clinical status. HCP collaborators will analyze Phase I data, producing baseline summaries, exploratory analyses of clustering, and treatment choice models as well as statistical plans for analyses of Phase II data.

2015–16   Harvard Integrated Program to Protect and Improve the Health of NFLPA Members
NFL Players Association
Co-Investigator (PI: Lee Nadler)
Participation in organized football presents both risks and benefits. In order to make a decision about whether or not to participate in organized football, individuals must accurately appraise the risk-related information and then weigh future health risks against current and future financial, psychological, physical, and social benefits. Given the complex, and in some case unknown, risks associated with football participation, the goal of this program of research is to create effective risk communication strategies

that inform and empower individual athletes to make informed autonomous decisions related to beginning, continuing, or ceasing football participation.

2015–17   Comparative Effectiveness of Treatment Regimens in Lung Cancer
NIH 5R21AG047175-02
Co-Investigator (PI: Haiden Huskamp)
In this project, we will compare the survival and health care utilization of elderly individuals with extensive-stage small cell lung cancer treated with two different chemotherapy regimens. We will use propensity score methods to create matched cohorts from the SEER-Medicare database. The work fills important gaps in the existing literature by including an older, less healthy cohort than typically enroll in clinical trials and studying real-world outcomes following treatment.

2013–17   The MDEpiNet Medical Counter Measures Study
US Food & Drug Administration 1U01FD004493
Co-Investigator (PI: Sharon-Lise Normand)
This proposal plans to advance statistical and epidemiological methods to improve our understanding of the safety and effectiveness of medical countermeasure-related devices in general, and of their vulnerabilities to chemical, biological, radiological, chemical, or nuclear events in particular. Our methods will facilitate this research through the development of a probabilistic risk assessment framework supported by a comprehensive set of methodological approaches for continuous evaluation of premarket and postmarket device data and by harnessing the increasing power of large clinical and administrative databases, including government claims data; clinical data found in international, national and state registries run by professional societies and public health departments; and electronic medical record data.

2013–17   Evaluating a Tiered Hospital Network
CareFirst
Co-Investigator (PI: Michael Chernew)
In 2011 CareFirst, the leading not-for-profit health insurance plan in the mid-Atlantic, implemented its Patient-Centered Medical Home (PCMH) model. The program rewards greater attention to patients with chronic disease who consume a substantial portion of health care spending and can benefit from care plans, and it provides extensive support to physicians to help them care for these patients. We propose to conduct a comprehensive evaluation of the effects of the CareFirst PCMH and to assess the aspects of the model that lead to its success. The evaluation will combine 3 rigorous components. The first two will be quantitative, using data from CareFirst and the Truven MarketScan database, respectively. The third will be a qualitative analysis based on original data collection.

2014–17   Impact of Price Transparency on Utilization and Spending
Health Care Markets and Regulation Lab / Arnold Foundation
Co-Investigator (PI: Ateev Mehrotra)
This project will estimate the impact of offering a price transparency tool to a health plan enrollee. We will analyze health care cost and utilization data from a national database of commercial claims (Truven MarketScan) using a difference-in-difference approach to compare the differential change over time between firms that offer or do not offer a price transparency tool to their enrollees. Key outcomes are utilization and spending across a variety of services, some of which we consider "shoppable".

2014–17   An Intervention to Manage Acute Changes in Home Care Patients
Health Care Markets and Regulation Lab / Arnold Foundation
Co-Investigator (PI: David Grabowski)
This randomized evaluation of an Intervention in Home Care to Improve Health Outcomes (In-Home) will evaluate a telephone checklist that allows home care caregivers to assess acute changes in a patient's physical or cognitive status. Primary outcomes are mortality and avoidable hospitalizations.

2015–17	The Impact of Castlight's Price Transparency Tool on Utilization
	CalPERS
	Co-Investigator (PI: Ateev Mehrotra)
	The overall goal of the proposed research is to examine whether use of the Castlight price-transparency tool is associated with a decrease in health care costs and greater use of higher-quality physicians and facilities. An analysis will be conducted of health plan claims of CalPERS members who use the Castlight tool and a control population.
2016–18	Impact of Maryland's Hospital Global Budgets on Utilization, Quality, and Spending
	The Commonwealth Fund 20160555
	Co-Investigator (PI: Ateev Mehrotra)
	Our goal is to conduct the first rigorous evaluation of Maryland's hospital global budget program. Specifically, we will examine the program's effects on hospitalizations and readmissions, spending, inpatient and ambulatory care quality, and unintended provider behaviors. This work will shed light on the effects of population-based health care financing, when implemented at the hospital level, on patient outcomes and provider behavior.
2016–18	Constructing U.S. Life Tables by Educational Status, 1990-2011
	National Institute on Aging R03AG050902
	Co-Investigator (PI: David Cutler)
	Health and survival are known to be worse for those with less education in the United States. However, the data for examining life expectancy by education level are not ideal. Vital Statistics data accurately measure deaths, but education reports on death certificates are known to be stated with error, and differences across states result in missing data. This project will combine these two types of data to estimate mortality by age, sex, race and education and adjust for changing educational attainment over time.

Current

2012–22	CAHPS V
	Yale University Subcontract (u/d AHRQ) 2 U18 HS016978-11
	Co-Investigator (PI: Alan Zaslavsky/Paul Cleary)
	The Harvard Medical School team will: Maintain, develop and document the CAHPS analysis macro and assist with response to user queries that are beyond the expertise of the support staff; (2) Perform selected analyses of psychometric properties of CAHPS pilot and field test data; (3) Provide statistical advice on design and analysis of CAHPS instruments, field tests and implementations as required
2017–20	National Implementation of Medicare Advantage and Prescription Drug Plan CAHPS Survey
	RAND Subcontract (u/d CMS) 9920120015
	Co-Investigator (PI: Alan Zaslavsky/Marc Elliot)
	The purpose of this project is the implementation of the MA and PDP CAHPS surveys using the model where MA, MMP, and PDP contracts contract with CMS-approved vendors for data collection. The work shall also include analyses of the survey results and preparation of Medicare CAHPS measures, as well as sampling and analysis of the Medicare Fee-For Service (FFS) CAHPS data and production of comparable FFS CAHPS measures for public reporting.
2014–19	Effects of Expanded Coverage on Access, Health Care and Health in the South
	National Cancer Institute / Vanderbilt R01CA189152
	Co-Investigator (PI: Michael McWilliams/John Graves)
	This project will provide timely and rigorous analysis of the effect of health insurance coverage expansions on health care use and outcomes among a large cohort of low-income adults in 12 southeastern states (VA, WV, KY, TN, NC, SC, FL, GA, AL, MS,

LA, AR). Using a quasi-experimental research design, we aim to quantify the effects of coverage expansion through Medicaid and private health insurance exchanges on access to care, cancer screening and use of preventive clinical services (Aim 1); on self-reported health outcomes, mortality and use of emergent and inpatient care (Aim 2); and on cancer stage at diagnosis and quality of cancer care (Aim 3).

2015–20   Medicare in a Restructured Delivery System
National Institute of Aging P01AG032952
Co-Investigator (PI: Joseph Newhouse)
Successful integration of financing and care in the Medicare program is the single most important objective of health policy, and arguably, with its powerful budgetary implications, of social and fiscal policy in the US today. This Program Project proposal lays out a forward-looking research agenda encompassing three areas: 1) innovative and comprehensive analyses of current initiatives around ACOs, 2) rigorous research on the current form of integration, the MA program which, as our research has shown, has demonstrated improved performance in recent years, and, 3) research on innovative beneficiary as well as provider payment policy.

2015–19   Behavioral Economics and Improving Chemotherapy Decisions for Advanced Cancer
National Cancer Institute K24CA181510
Co-Investigator (PI: Nancy Keating)
The proposed work will provide support for Dr. Keating to further develop her research program focused on improving care for cancer patients by acquiring skills in behavioral economics and intervention research. It will also allow her to expand her mentoring activities to junior investigators in rigorous patient-oriented cancer research. In the proposed research, Dr. Keating and her mentees will develop and implement a new chemotherapy consent form, and assess if use of this consent form can increase advanced cancer patients' understanding of the goals of chemotherapy.

2017–20   Health Care Markets and Regulation Lab
Laura and John Arnold Foundation
Co-Principal Investigator, Methods Core (PI: Michael Chernew)
The methodological research of the Methods Core is designed to strengthen the robustness, validity, and rigor of health policy research. There are numerous methods challenges for which no "off-the-shelf" solutions exist, particularly for evaluations of policy impacts using difference-in-difference designs. Methods Core papers will address these shortcomings and provide practical, statistically valid, and causally appropriate approaches to health services researchers engaged in evaluation studies. Dr. Hatfield will develop improved tests for the key assumptions of diff-in-diff and new methods for control group selection in hierarchical settings.

2017–19   Using Telemedicine to Reduce Hospital Transfers
Donaghue Foundation
Principal Investigator
We study whether providing access to physicians via video (telemedicine) reduces unnecessary ED visits for residents of independent living communities. Continuing Life, our partnering stakeholder organization, operates three independent living communities in California, each with several hundred residents. At one community, staff members now respond to resident calls carrying a mobile tablet that allows residents and staff to interact with an emergency medicine physician via video. We will study changes in ED transfers and hospital admissions.

Training Grants and Mentored Trainee Grants

2017–18   The Impact of Resource Constraints on Provider Behavior and Health Outcomes in Childbirth
AHRQ R36HS024898
Faculty (PI: Katherine Donato)

This project tests how resource availability affects the clinical decision to expedite childbirth by performing a cesarean delivery (C-section) on low-risk mothers. Economic theory does not provide a clear prediction about the impact of resource availability on quality of care: at times, limited resources can lead to improved efficiency and coordination; at other times they could lead to insufficient, delayed, or rushed care.

2016–21 A Multistakeholder Examination of the Drivers and Value of Inpatient Consultation
AHRQ K08HS024288
Faculty (PI: Jennifer Stevens)
Inpatient consultation by specialists is the primary mechanism by which specialist care is provided to hospitalized patients. The aims of the research project are to 1) engage patients and providers through a mixed-methods approach to identify characteristics of beneficial consultations, 2) use Medicare claims and electronic health record data to investigate novel non-clinical drivers of variation in the use of inpatient consultation, and 3) incorporate these drivers into models that quantify the impact of consultation on patient outcomes and costs.

Report of Local Teaching and Training

Teaching of Students in Courses:

2012–16	Methods Seminar Graduate students, fellows	Harvard Health Economics Seminar 2-hr sessions, twice a year
2014–	Methods Seminar Graduate students, fellows	Department of Health Care Policy 7, 1-hr sessions each year
2014–	Graduate Reading Course: Evaluative Science and Statistics (Health Policy 3080) Health Policy PhD students	Harvard University 2-hr sessions, twice a year
2015	Health Care Policy (HC 750) 1st year medical students	Harvard Medical School 8, 1-hr sessions each January
2015–	Research Seminar in Health Policy (Health Policy 3040hf) Health Policy PhD students	Harvard University 1-hr sessions, weekly
2017, 18	Health Policy, Essentials of the Profession, Part I 1st year medical students	Harvard Medical School 8, 1-hr sessions each January
2017–	Evaluative Science and Statistics PhD written exam prep Health Policy PhD students	Harvard University 4, 1-hr sessions each spring

Laboratory and Other Research Supervisory and Training Responsibilities:

2016–	Health Policy Data Science Lab	1-hr group lab meeting, monthly
2015–17	Co-supervisor of two-year Seidman Fellow	1-hr 1:1 meeting, twice monthly
2015–	Supervision of research assistantships and dissertation research of Harvard health policy PhD students	1-hr 1:1 meetings, weekly

Formally Mentored Harvard Medical, Dental and Graduate Students:

2015–18	Christine Baugh, PhD candidate, Harvard University Co-supervised dissertation research and co-authored three manuscripts (all in preparation) on risks, benefits, and decision-making in sports. Now an NIMH postdoctoral fellow.
2015–18	Jamie Daw, PhD candidate, Harvard University

	Co-supervised dissertation research and co-authored two papers. Now Assistant Professor at Columbia University.
2016–18	Jeannie Biniek, PhD candidate, Harvard University Co-supervised dissertation research in provider responses to information shocks and use of new medical technologies. Now a Senior Researcher at Health Care Cost Institute.
2016–	Kate Lofgren, PhD student, Harvard University Supervising dissertation research in value-of-information approaches to evaluating heterogeneous treatment effects.
2016–17	Robbert Zusterzeel, MD, PhD, MPH Student, Harvard T.H. Chan School of Public Health Co-mentored MPH practicum on establishing an objective performance goal for transcatheter aortic valve replacement, with a manuscript in preparation.
2016–	Caroline Kelley Geiger, PhD student, Harvard University Academic advisor
2017–	Alyssa Bilinski, PhD student, Harvard University Supervising dissertation research in assessing assumptions of difference-in-difference designs.
2017–	Rebecca Gourevitch, PhD student, Harvard University Academic advisor

Other Mentored Trainees and Faculty:

2015–17	Megan Schuler, PhD, Marshall J. Seidman Fellow in Health Care Policy Co-supervised two-year fellowship and co-authored three manuscripts. Now a Health Policy Researcher at RAND (Boston).
2016–17	Nina Joyce, PhD, NIMH Postdoctoral Fellow Co-authored two manuscripts on longitudinal trajectories. Now a K12 Fellow at Brown University.
2017–	Christoph Kurz, PhD student, Helmholtz Zentrum München, University of Munich Mentoring dissertation research in mixture models for health care utilization data (manuscript under review) and synthetic control methods (in preparation).
2018–	Bret Zeldow, PhD, Postdoctoral Fellow Supervising two-year fellowship
2018–	Christine Baugh, PhD NIMH Postdoctoral Fellow Supervising one-year fellowship

Formal Teaching of Peers (e.g., CME and other continuing education courses):

No presentations below were sponsored by outside entities

2015–	Methods Toolkit: Health Services, Outcomes Research, and Policy Analysis T3/T4 Research: Translating Effective Interventions into Practice (Harvard Catalyst)	1-hr lecture, yearly Boston, MA
2018	Machine Learning and Bayesian Approaches for Data Science in Medicine (Harvard Catalyst)	6-hour short course (co-instructor) Boston, MA

Local Invited Presentations:

No presentations below were sponsored by outside entities

2011	Bayesian hierarchical joint modeling for longitudinal and survival data / Invited seminar Department of Biostatistics, Harvard School of Public Health

2012	Comparing block Kronecker and unstructured covariance matrix estimation in a hierarchical model for health care quality / Invited seminar Department of Statistics, Harvard University
2013	Statistical properties and health policy applications of microsimulation / Invited seminar Applied Statistics Workshop, Institute for Quantitative Social Science, Harvard University
2014	Tailoring treatment information using personal characteristics and health outcome preferences/ Invited seminar Dana Farber / Harvard Cancer Center Health Outcomes Research Seminar
2016	Learning in Bayesian hierarchical joint models for longitudinal and survival data / Guest lecture Applied Bayesian Analysis (BST 228), Harvard T.H. Chan School of Public Health
2016	Incorporating decision-maker loss functions in safety monitoring / Invited seminar Harvard/MIT Econometrics seminar, Cambridge, MA
2018	Reproducibility and Open Science / Invited seminar (co-presenter) Dana Farber/Harvard Cancer Center Outcomes Research Seminar, Boston, MA
2018	Methods for difference-in-differences studies / Invited seminar Beth Israel Deaconess Medical Center Richard A. and Susan F. Smith Center for Outcomes Research in Cardiology, Boston, MA

Report of Regional, National and International Invited Teaching and Presentations

No presentations below were sponsored by outside entities

Regional

2011	Bayesian adaptive methods for clinical trials / Invited 2-day short course Yale Center for Analytical Sciences, Yale School of Public Health, New Haven, CT
2012	Learning and information in Bayesian joint models for longitudinal and survival data / Invited seminar Center for Statistical Sciences, Brown University, Providence, RI
2012	Comparing block Kronecker and unstructured covariance matrix estimation in a hierarchical model for health care quality / Contributed presentation New England Statistics Symposium, Boston University, Boston, MA
2012	Learning and information in Bayesian joint models for longitudinal and survival data / Invited seminar Department of Statistics, University of Connecticut, Storrs, CT
2015	Incorporating regulator loss functions for safety signal escalation / Invited seminar Department of Biomedical Data Science, Dartmouth College, Hanover, NH
2016	A Picture is Worth a Thousand Tables / Invited guest lecture Phys 1130, Northeastern University
2018	Methods for difference-in-differences studies / Invited seminar RAND Corporation, Boston, MA

National

2010	Hierarchical joint models of zero-inflated longitudinal patient-reported outcomes and progression-free survival times in mesothelioma / Contributed presentation Annual Meeting of the Eastern North American Region (ENAR) of the International Biometric Society, New Orleans, LA
2010	Multilevel Bayesian models of zero-inflated longitudinal outcomes and survival times in oncology / Invited presentation Eli Lilly & Co., Indianapolis, IN
2010	Multivariate Bayesian models for longitudinal patient-reported outcomes and survival data in cancer clinical trials / Invited presentation Eli Lilly & Co., Indianapolis, IN

2011	Multilevel Bayesian models of zero-inflated longitudinal outcomes and survival times in mesothelioma / Contributed presentation Bayesian Biostatistics Conference, Houston, TX
2011	Hierarchical Bayesian modeling of zero-inflated longitudinal patient-reported outcomes and survival / Invited seminars Department of Mathematics & Statistics, University of Maryland—Baltimore County, Baltimore, MD Department of Statistics, University of Florida, Gainesville, FL Department of Biostatistics, University of Pittsburgh School of Public Health, Pittsburgh, PA Department of Epidemiology & Biostatistics, Memorial Sloan-Kettering, New York, NY Department of Biostatistics, John Hopkins School of Public Health, Baltimore, MD Department of Statistics, University of Missouri, Columbia, MO Department of Statistics, Iowa State University, Ames, IA Department of Health Care Policy, Harvard Medical School, Boston, MA Department of Statistics, The Ohio State University, Columbus, OH
2011	Multilevel Bayesian models for zero-inflated longitudinal patient-reported outcomes and survival times in mesothelioma / Contributed presentation Annual Meeting of the Eastern North American Region (ENAR) of the International Biometric Society, Miami, FL
2011	Hierarchical Bayesian modeling of longitudinal and survival outcomes / Contributed presentation New England Statistics Symposium, Storrs, CT
2011	Modeling, analysis, and software for spatial and other hierarchically structured data / Invited 2-day short course Centers for Disease Control and Prevention, Atlanta, GA
2012	Bayesian learning in joint models for longitudinal and survival data / Contributed presentation Bayesian Biostatistics Conference, Houston, TX
2012	Clinically relevant graphical displays of posterior predictions from Bayesian joint longitudinal-survival models / Contributed presentation Innovations in Design, Analysis, and Dissemination: Frontiers in Biostatistical Methods, Kansas City, MO
2012	Topics in Hierarchical Bayesian Analysis / 4-day graduate course University of Minnesota School of Public Health Summer Public Health Institute
2013	Bayesian methods and computing for joint longitudinal-survival and other multi-component models / Invited tutorial Annual Meeting of the Eastern North American Region (ENAR) of the International Biometric Society, Orlando, FL
2014	Hierarchical models for surveillance: Application to adverse medical device events among hospitalized children / Invited seminar Division of Epidemiology Grand Rounds, CDRH, US FDA, Silver Spring, MD
2014	Comparing treatment when effects vary across individuals and multiple outcomes matter / Invited talk Annual Meeting of the Western North American Region (WNAR) of the International Biometric Society, Honolulu, HI
2014	Shrinkage targets and utility functions in signal detection and escalation / Invited presentation MDEpiNet Annual Meeting, Silver Spring, MD
2015	Realistic loss functions in safety signal escalation / Invited presentation G70: A Celebration of Alan Gelfand, Durham, NC
2015	Methods for multiple treatment comparisons / Invited half-day short course MDEpiNet Annual Meeting, Silver Spring, MD

2016	Using Bayesian analysis to produce better and more useful estimates of intervention impacts / Invited panelist AcademyHealth Annual Research Meeting, Boston, MA
2016	Existing/national standards for interoperability, UDI, claims data, and methodological opportunities / Invited panelist GI Coordinated Registry Network: A Case for Obesity Devices (FDA MDEpiNet), Silver Spring, MD
2016	Incorporating decision-maker loss functions in safety monitoring / Invited seminar Statistics Department, Brigham Young University, Provo, UT
2016	Modeling insurance choice for the Medicare population / Invited presentation Association for Public Policy Analysis & Management 2016 Pre-Conference Workshop, Washington, DC
2016	Modeling hierarchical variance with Kronecker structure, with application to quality measures in Medicare Advantage / Invited seminar Department of Statistics, University of Washington, Seattle, WA
2017	Utility maximizing models of Medicare supplemental insurance choices / Invited presentation Annual Meeting of the Eastern North American Region (ENAR) of the International Biometric Society, Washington, DC
2017	Handling incomplete correlated continuous and binary outcomes in meta-analysis of individual participant data / Invited oral presentation Biostatistics in the Modern Computing Era, Wauwatosa, WI
2017	Methods for difference-in-difference studies / Invited seminar Department of Biostatistics, Johns Hopkins University, Baltimore, MD
2017	Networking among junior statisticians: Peer mentoring and strategies to promote one another / Invited panelist Women in Statistics and Data Science, La Jolla, CA
2018	Methods for difference-in-difference studies / Invited seminar Department of Biostatistics, MD Anderson Cancer Center, Houston, TX
2018	Clustering discrete state trajectories of varying lengths: health care utilization patterns / Invited presentation Annual Meeting of the Eastern North American Region (ENAR) of the International Biometric Society, Atlanta, GA
2018	Bayesian models for objective performance criteria / Invited presentation 11th Annual FDA/AdvaMed Medical Devices & Diagnostics Statistical Issues Conference, Washington, DC
2018	Complex real-world evidence: Networked and missing data / Invited workshop Annual meeting of the International Society of Pharmacoeconomics and Outcomes Research, Baltimore, MD
2018	Bayesian models for objective performance criteria / Invited presentation ASA Biopharmaceutical Section Regulatory-Industry Statistics Workshop, Washington, DC

International

2010	Hierarchical joint models of zero-inflated longitudinal patient-reported outcomes and progression-free survival times in mesothelioma / Contributed presentation Joint Statistical Meetings, Vancouver, BC
2011	Learning in hierarchical Bayesian models for longitudinal and survival outcomes / Contributed presentation International Conference on Health Policy Statistics, Cleveland, OH
2012	Identifiability and learning in Bayesian joint longitudinal-survival models / Special topic presentation International Society of Bayesian Analysis World Meeting, Kyoto, Japan

2012	Bayesian adaptive methods for clinical trials / Invited 2-day short course
	Erasmus University Medical Center, Rotterdam, The Netherlands
2012	Hierarchical Bayesian methods for combining multiple endpoints for comparative effectiveness research / Invited seminar
	I-Biostat (KU Leuven and Hasselt University), Belgium
2012	Introduction to Bayesian methods and software for data analysis / Invited 1-day short course
	Learning and information in Bayesian joint models for longitudinal and survival data / Topic contributed presentation
	Joint Statistical Meetings, San Diego, CA
2013	Bayesian methods developments in microsimulation / Topic contributed presentation
	Joint Statistical Meetings, Montréal, Québec, Canada
2013	Hierarchical models and computing for joint longitudinal-survival and other multiple component or endpoint data / Invited tutorial
	Combining data to study utilization and effectiveness of medical devices / Invited presentation
	International Conference on Health Policy Statistics, Chicago, IL
2014	Consumer choices in microsimulation / Invited presentation
	Institute of Mathematical Statistics-International Society for Bayesian Analysis 5th Joint Meeting, Chamonix, France
2014	Structured covariance matrices for cross-classified data: a Bayesian approach / Invited presentation
	International Society of Bayesian Analysis World Meeting, Cancún, Mexico
2014	Consumer choice modeling in microsimulation / Invited presentation
	Joint Statistical Meetings, Boston, MA
2015	Modeling multiple outcomes to inform patient treatment decisions / Invited presentation
	Joint Statistical Meetings, Seattle, WA
2015	Tailoring treatment information using personal characteristics and health outcome preferences / Invited presentation
	International Conference on Health Policy Statistics, Providence, RI
2016	Varying relationships between beneficiary traits and quality measures affect comparison in Medicare Advantage / Topic contributed presentation
	Joint Statistical Meetings, Chicago, IL
2017	Medical devices: Generating and using real-world observational data for decision-making on value / Invited panel presentation
	Canadian Agency for Drugs and Technologies in Health Symposium, Ottawa, Canada
2017	Handling incomplete correlated continuous and binary outcomes in meta-analysis of individual participant data / Invited oral presentation
	Joint Statistical Meetings, Baltimore, MD
2018	Choosing comparison groups for difference-in-difference studies / Contributed presentation
	International Conference on Health Policy Statistics, Charleston, SC
2018	Illuminating variation in implantable cardiac device use and outcomes with billing claims data / Invited presentation
	Annual meeting of the International Chinese Statistical Association, New Brunswick, NJ
2018	Big data detectives: improving human health through informing policy / Invited panelist
	Joint Statistical Meetings, Vancouver, BC, Canada
2018	Methods for difference-in-differences / Invited presentation
	Workshop on Statistical Inference, Learning, and Models in Data Science (Fields Institute), Toronto, BC, Canada

Report of Education of Patients and Service to the Community

Those activities below sponsored by outside entities are so noted and the sponsor is identified

2017   Care at the end of life / Panelist (Moore Foundation)
                     Health Affairs Issue Briefing, Advanced Illness and End-of-Life Care
2017   Data Science & Medicine / Invited presentation
                     Harvard Medical School Talks@12

Report of Scholarship

Peer-Reviewed Scholarship in print or other media:

Research investigations

1. Kossoff EH, **Hatfield LA**, Ball KL, Comi AM. Comorbidity of epilepsy and headache in patients with Sturge-Weber syndrome. Journal of Child Neurology. 2005;20(8):678-682, 2005. PMID 16225815

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3.   Bilinski A and **Hatfield LA**. Absence of evidence is not evidence of absence: A better parallel trends test. Joint Statistical Meetings. 30 July 2018. Vancouver, BC. (selected oral poster presented by A Bilinski)

Narrative Report

On a foundation of expertise in methods for analyzing data with hierarchical structure and multiple outcomes, I have expanded my work into health economics, comparative effectiveness research, variation in health care quality and delivery, evaluations of interventions using observational data and quasi-experimental designs, and health decision-making.

Hierarchical Bayesian modeling. Many analysis settings involve data with complex structure and interrelationships; hierarchical Bayesian modeling offers a natural and flexible approach to estimation and inference. Through close collaboration with subject matter experts, I have developed and applied hierarchical Bayesian models to address the complex data structures of experimental designs, spatial relationships, and repeated observations. I have made contributions in multiple outcome modeling. My earliest work focused on jointly modeling survival and patient-reported outcomes in cancer clinical trials. Clinical trials typically report each outcome separately, but patients and physicians must weigh multiple health outcomes when choosing among treatments. My approaches combine evidence across outcomes, treatments, and data sources to produce joint output that supports decisions that must trade off risks and benefits. My recent work in this area combines joint model output with explicit loss functions and utilities to improve decision-making for patients and regulators.

Observational studies of health and health care variation. Health policy research often relies on observational data to understand variation in health care spending, health outcomes, and quality of care. In recent collaborative work, I have studied variation in family reports on end-of-life care, care delivered in periodic health exams, implants of cardiac electric devices, and inpatient resource utilization (ongoing). My most recent methods development in this area addresses variation in the casemix adjustment models used for survey-based measures of quality in Medicare Advantage plans. This work has implications for the way plan quality reports could be tailored to beneficiaries' characteristics. I have also developed microsimulation models of health care spending of Medicare beneficiaries. The consequences of growing health care spending vary according to seniors' health needs and financial resources. Our models, which incorporate these distributional consequences, provide key insights into variation in the impact of health care spending growth.

Evaluations using experimental and quasi-experimental designs. Delivery systems and payers introduce numerous innovations designed to reduce health care spending and improve quality and health outcomes. I have evaluated several such innovations, including Medicare accountable care organizations and physician- and consumer-facing price transparency tools. In ongoing work, I am evaluating a checklist-based intervention for home care services, a patient-centered medical home program, and Maryland's hospital global budget initiative. Inspired by these evaluations, I am conducting ongoing methods research to improve the popular quasi-experimental difference-in-difference study design. These methods will reduce threats to validity by matching on appropriate baseline variables, selecting valid control groups, and specifying proper tests of key assumptions.

In addition to formal mentoring of graduate students, I engage in mentoring through the Health Policy Data Science Lab, which I co-lead with my colleague Dr. Sherri Rose. The Lab is an informal group of postdoctoral fellows, students, and research assistants who are interested in rigorous methods for health policy research. The Lab provides trainees a collegial space to network with faculty and peers and to present their ongoing research. It is also an accessible entry point for students who are interested in pursuing graduate studies or identifying thesis projects.