TANYA G. K. BENTLEY, PhD

Health Services Researcher, Decision Scientist (617) 359-8407 • <u>tanyabentley@gmail.com</u> LinkedIn: Tanya GK Bentley

EDUCATION

Harvard University, Faculty of Arts and Sciences

Cambridge, MA

PhD in Health Policy, Decision Sciences concentration, 2006

Dissertation: "U.S. Folic Acid Fortification Policy: Methods for Evaluating Folate Intake and Projecting Health Outcomes"

Committee: Karen Kuntz, ScD (chair); Milton Weinstein, PhD; Walter Willett, MD, DrPH

Harvard School of Public Health, Dept. Health Policy & Management Boston, MA **MS** in Management of Health Hazards, June 1998

Cornell University, College of Arts & Sciences

Ithaca, NY

BA in Psychology, French & Spanish Concentration, May 1992

Center for Undergraduate Programs Abroad, Paris, France, Spring 1991

Phi Beta Kappa Honor Society; Psi Chi Honor Society

University of Barcelona

Barcelona, Spain

Spanish language program, Summer 1992

FELLOWSHIPS AND AWARDS

Agency for Healthcare Research and Quality, University of California at Los Angeles/RAND Corporation

National Research Service Individual Postdoctoral Fellowship in Health Services Research, 2006-2008

National Cancer Institute, Dana-Farber/Harvard Cancer Center

Program in Cancer Outcomes Research Training Fellowship, 2003-2005

National Cancer Institute

Cancer Prevention Fellowship, 2000-2002

Harvard School of Public Health

Charles Wilinsky Award for Academic Excellence, 1998

Harvard School of Public Health

Carson Family Scholarship, 1997

RESEARCH EXPERIENCE

Health and Human Performance Foundation (HHPF)

Los Angeles, CA

CEO, Co-Founder

2018 – present

Created and lead independent nonprofit research organization that conducts research and communicates findings on the effectiveness of breath-related solutions for improving health and human performance. Conduct research and communicate findings on accessible, nocost, solutions to improve outcomes associated with CO2 and stress adaptation during mental and physical performance. Studying use of timed exhale test of CO2 tolerance as index of psychological anxiety in healthy adults (collaboration with California State University Fullerton). Evaluating influence of physiological CO2 adaptation on gut microbiome (collaboration with San Francisco State University). Leading program among firefighters using regulated breath techniques to improve CO2 adaptation and O2 efficiency during exertion. Led program that improved CO2 adaptation and reduced stress among high school youth. Conducting systematic literature review on effectiveness of breath solutions to psychological stress.

UCLA Mindful Awareness Research Center (MARC)

Los Angeles, CA

Research Scientist

2018 – present

Lead the design, implementation, and dissemination of economic analyses of MARC clinical trials evaluating mindfulness interventions in various populations. Currently conducting micro-cost analysis for CARES clinical trial on the non-inferiority of mindful awareness research practices (MAPS) vs cognitive behavior therapy (CBT) for insomnia among Alzheimer's caregivers. Work with clinical trial team to identify, itemize, and abstract intervention-specific data. Conduct analyses to estimate total, per-component, and perparticipant costs.

Partnership for Health Analytic Research, LLC

Beverly Hills, CA

Senior Director. Health Economics

2016 - 2017

Director, Health Economics and Outcomes Research

2009 - 2016

Led health economics team at research firm providing support to development, marketing, and health economics professionals in the life science industry. Developed new and ongoing client relationships. Identified and brought in new business of up to \$1M annually. Developed and delivered presentations for scientific, research, and client audiences. Managed research staff, including clinician and other consultants. Conducted and led projects using quantitative and qualitative methodology, focusing primarily on cost-effectiveness analyses, decision-analytic modeling, outcomes research, and related theoretical analyses. Worked with team and clients to design studies, conduct analyses, prepare and present abstracts, and write manuscripts for publication.

University of California Los Angeles, Center for Health Policy Research

Research Scientist Los Angeles, CA 2008 – 2010

Conducted and lead health services research focusing on improving population health outcomes through health policy decision-making, disease prevention, and health and medical care assessment. Performed and consulted on outcomes-evaluations for publicly and commercially sponsored projects in the University of California San Diego (UCSD) Health Outcomes Assessment Program. Directed and managed analytic team, data, and statistical models to evaluate Veterans Administration (VA) national cancer pain performance for four quality pain indicators in a national cancer cohort. Oversaw and developed models that use cost-effectiveness, quality of life assessment, decision analytic, and other economic or statistical methods to evaluate health, social and economic outcomes of specific health services and policy interventions.

University of California, Office of the President Lead Health Economist, Analyst – CA Health Benefits Review Program 2009 – 2010

Analyst – CA Health Benefits Review Program 2008 – 2009

Provided health economic and analytic leadership to team of five to nine faculty and staff in conducting independent and objective cost impact analyses of proposed health insurance benefit mandates and repeals for the California state legislature. Worked with task force of faculty from several UC campuses as well as actuarial consultants to complete 10-15 analyses during a 60-day legislative period. Conducted and oversaw detailed analyses and reports evaluating the cost and utilization impacts of insurance mandate bills for use by legislators during the formal bill consideration. Supervised the collection and evaluation of data from multiple sources, including actuarial data, medical claims data, and scientific evidence from the published literature.

RAND Corporation/University of California Los AngelesSanta Monica, CAAdjunct Research Scientist2008 – 2010Post-doctoral Research Fellow2006 – 2008

Conduct health services research for various economic and decision-analytic projects and work with teams to write and prepare presentations, manuscripts, proposals, and reports. Developed large microsimulation model to establish a quality-of-care decision tool for implementing genetic testing services in U.S. clinical practice. Built and evaluated Markov cohort model to estimate lifetime social and economic costs of illicit drug use in the U.S. Evaluated and quantified economic and health-related waste in the U.S. healthcare system. Conducted analysis to evaluate potential bias in Markov cohort models when prior event history impacts – yet is not incorporated in probability of – future risk.

Harvard University and Massachusetts General HospitalBoston, MA 2001 – 2006

Conducted doctoral dissertation research on changes in national, population-level folate intake and disease outcomes after folic acid fortification in the U.S. Designed and implemented extensive epidemiological analysis of two national population-based surveys. Evaluated health and economic impact associated with changes in folate intake for neural tube defects, coronary heart disease, colon cancer, and B-12 deficiency. Conducted separate

analysis to examine tradeoffs involved in categorizing continuous risk factors in decisionanalytic models. Oversaw, wrote, and prepared abstracts for presentations and manuscripts for publication.

Dana Farber Cancer Institute, Center for Community-Based Research. Boston, MA Research Project Director 1998 – 2000

Managed multi-site, 4-year research project that delivered a smoking intervention to pregnant women. Supervised staff of 10, including RNs, research assistants, recruitment staff, and student interns. Designed, wrote, and oversaw implementation of research protocol. Supervised case management of 300 clients. Wrote research-funding proposals. Monitored project budget of over \$2 million. Marketed program to Boston-area healthcare sites. Trained RNs in program intervention. Managed and provided support for project tasks.

TEACHING EXPERIENCE

University of Southern California, IPPAM School of Policy Planning and Development, Los Angeles, CA

Instructor, Decision Analysis, Public Policy Formulation and Implementation 2007 – 2011 Taught decision-analytic module of three, 3-hour sessions for a graduate-level public policy course that provides students with a set of tools to help policymakers make better decisions, with a heavy emphasis on applications in a wide range of substantive policy areas. Used interactive teaching tools to guide students towards developing an understanding of the applications, theoretical underpinnings, and methods of decision analysis for policy formulation. Helped students to develop and practice basic decision-analytic skills and to become familiar with a software tool used in such work. Utilized applications from preventive and therapeutic medicine, environmental health, and other areas of policy formulation. Developed and evaluated reading assignments and in-class group exercises.

Harvard University, Harvard School of Public Health

Teaching Assistant, Cost-Effectiveness Analysis and Benefit-Cost Analysis in Public Health
and Medicine (Milt Weinstein, Jim Hammitt)

Winter-Spring 2005

Provided teaching assistance for a Master's- and doctoral-level course on the theory,
methods, and applications of economic evaluation in the health context. Helped students to
develop an understanding of the theoretical underpinnings of – and the analytic methods and
data acquisition strategies for – different types of economic evaluation. Utilized applications
from preventive and therapeutic medicine, environmental health, and other areas of public
health. Developed final exam questions and answers. Graded assignments, papers, and
exams.

Harvard University, Harvard School of Public Health

Teaching Assistant, Decision Theory (Jim Hammitt)

Assisted in teaching a doctoral-level lecture course in the economic theory of choice and decision analysis, with applications to health policy. Prepared and taught sections for reviewing concepts from lecture and for assisting students in solving analytical problems. Focused on the following topics: decision-making under uncertainty; expected utility; multi-

attribute utility theory; subjective probability; expected value of information; and alternative models of decision-making.

Harvard College, Faculty of Arts and Sciences

Cambridge, MA

Teaching Fellow, AIDS, Health, and Human Rights (Jonathan Mann) Spring 1997 Worked with professor and faculty team to teach and write curriculum for 20-student section of large introductory, undergraduate-level lecture course. Introduced students to interdisciplinary subject of health and human rights as entry into extensive field of public health. Graded papers. Held office hours.

SYMPOSIA AND OTHER PROFESSIONAL TEACHING EXPERIENCE

ISPOR 2015 20th Annual International Meeting

Philadelphia, PA

Presenter, Satellite Symposium

Spring 2015

Conceptualized, developed and presented continuing education seminar entitled "Measuring the Economic Value of Biosimilars In an Uncertain (& Evolving) Market" as part of panel on the introduction of biosimilars to US market. Worked with co-presenters to tailor presentation for ISPOR audience. Presented recommendations for methods of incorporating biosimilars into frequently utilized modeling techniques given price, market share and indication/interchangeability considerations.

Harvard University, Harvard Ph.D. Program in Health PolicyBoston, MA
Founder & Coordinator, Decision Sciences Student Roundtable Series 2003 – 2004
Initiated, organized, and lead doctoral-level working group for decision sciences students in all phases of the dissertation-writing process. Directed monthly sessions as a forum for students to accomplish the following: share research goals and strategies; review and discuss the application of statistical, decision-analytical, and research methods; rehearse presentations; and provide peer review of written work in progress.

Harvard University, Harvard Center for Risk Analysis

Boston, MA

Coordinator, Risk & Decision Sciences Seminar Series

Spring 2003

Co-managed seminar series in the methods and applications of risk analysis and decision science in environment, health, and safety. Arranged for, hosted, and presented guest speakers.

American Red Cross of Mass Bay

Boston, MA

Teacher & Coordinator, HIV/AIDS School & College Program

1993 - 1996

Managed HIV prevention program for local schools and colleges. Developed, marketed, and taught curricula to college students as well as to elementary and secondary school youth, teachers, and parents. Designed and taught instructor-certification course for school teachers and college students.

PEER-REVIEWED PUBLICATIONS

Sprimont P, **Bentley TGK**, MacKenzie B, Wilson R, Galpin A. The Use of a Timed Exhale CO2 Tolerance Test as an Index of State/Trait Anxiety in Healthy Adults. [manuscript in progress]

Hussain SA, Ortendahl JD, **Bentley TGK**, Harmon AL, Gupta S, Begley CE, Khilfeh I, Knoth RL. The economic burden of caregiving in epilepsy: An estimate based on a survey of US caregivers. *Epilepsia*. 2020;61(2):319-329.

Lim S, Gangoli G, Adams E, Hyde R, Broder MS, Chang E, Reddy SR, Tarbox MH, **Bentley T**, Ovington L, Danker W 3rd. Increased Clinical and Economic Burden Associated With Peripheral Intravenous Catheter-Related Complications: Analysis of a US Hospital Discharge Database. *Inquiry*. 2019 Jan-Dec;56:46958019875562.

Cherepanov D, **Bentley TGK**, Hsiao W, Xiang P, O'Neill F, Qian Y, Yurgin N, Beenhouwer D. Real-world cardiovascular disease burden in patients with atherosclerotic cardiovascular disease: a comprehensive systematic literature review. *Curr Med Res Opin*. 2018 Mar;34(3):459-473.

Shankaran V, Ortendahl JD, Purdum AG, Bolinder B, Anene AM, Sun GH, **Bentley TG**. Cost-Effectiveness of Cetuximab as First-line Treatment for Metastatic Colorectal Cancer in the United States. *Am J Clin Oncol*. 2018 Jan;41(1):65-72.

Bentley TGK, Cohen JT, Elkin EB, Huynh J, Mukherjea A, Neville TH, Mei M, Copher R, Knoth R, Popescu I, Lee J, Zambrano JM, Broder MS. Measuring the Value of New Drugs: Validity and Reliability of 4 Value Assessment Frameworks in the Oncology Setting. *J Manag Care Spec Pharm*. 2017 Jun;23(6-a Suppl):S34-S48.

Ortendahl JD, Pulgar SJ, Mirakhur B, Cox D, **Bentley TG**, Phan AT. Budget impact of somatostatin analogs as treatment for metastatic gastroenteropancreatic neuroendocrine tumors in US hospitals. *Clinicoecon Outcomes Res.* 2017 Aug;9:495-503.

Rosenblatt L, Broder MS, **Bentley TGK**, et al. Tolerability of central nervous system symptoms among HIV-1 infected efavirenz users: analysis of patient electronic medical record data. *AIDS Care*. 2017 Aug;29(8):1067-1073.

Ortendahl JD, Harmon AL, **Bentley TGK**, Broder MS. A systematic literature review of methods of incorporating mortality in cost-effectiveness analyses of lipid-lowering therapies. *J Med Econ*. 2017 Jul;20(7):767-775.

Cogle CR, Kurtin SE, **Bentley TG**, Broder MS, Chang E, Megaffin S, Fruchtman S, Petrone ME, Mukherjee S. The Incidence and Health Care Resource Burden of the Myelodysplastic Syndromes in Patients in Whom First-Line Hypomethylating Agents Fail. *Oncologist*. 2017 Apr;22(4):379-385.

Bentley TGK, Cohen JT, Elkin EB, et al. Validity and Reliability of Value Assessment Frameworks for New Cancer Drugs. *Value in Health*. 2017 Feb;20(2):200-205.

Martinez JM, Anene A, **Bentley TGK**, et al. Cost Effectiveness of Metal Stents in Relieving Obstructive Jaundice in Patients with Pancreatic Cancer. *J Gastrointest Canc.* 2017 Mar;48(1):58-65.

Cogle CR, Ortendahl JD, **Bentley TG**, et al. Cost-effectiveness of treatments for high-risk myelodysplastic syndromes after failure of first-line hypomethylating agent therapy. *Expert Rev Pharmacoecon Outcomes Res.* 2016;16(2):275-284.

Cangelosi MJ, Ortendahl JD, Meckley LM, **Bentley TG**, Anene AM, Shriner KM, Fox J. Cost-effectiveness of bronchial thermoplasty in commercially-insured patients with poorly controlled, severe, persistent asthma. *Expert Rev Pharmacoecon Outcomes Res*. 2015;15(2):357-364.

Cogle CR, Kurtin SE, **Bentley TG**, et al. Incidence of First-Line and Second-Line Myelodysplastic Syndrome in a US Commercial Claims Database. *Blood*. 2014;124(21):6008-6008.

Bentley TGK, Schroeder BE, Schnabel CA, et al. Cost effectiveness of a 92-gene assay for the diagnosis of metastatic cancer. *J Med Econ.* 2014;17(8):527-537.

Cartwright T, Chao C, Lee M, Lopatin M, **Bentley T**, et al. Effect of the 12-gene colon cancer assay results on adjuvant treatment recommendations in patients with stage II colon cancer. *Current Medical Research and Opinion*. 2014;30(2):321-328.

Juday T, Correll T, Anene A, Broder MS, Ortendahl J, **Bentley T**. Cost-effectiveness of the once-daily efavirenz/emtricitabine/tenofovir tablet compared with the once-daily elvitegravir/cobicistat/emtricitabine/ tenofovir tablet as first-line antiretroviral therapy in HIV-infected adults in the US. *ClinicoEconomics and Outcomes Research*. 2013;5:437-445.

Broder MS, Juday T, Chang EY, Jing Y, **Bentley TGK**. Using administrative claims data to estimate virologic failure rates among human immunodeficiency virus-infected patients with antiretroviral regimen switches. *Med Decis Making*. 2012;32(1):118-131.

Bentley TGK, Malin J, Longino S, Asch S, Dy S, Lorenz KA. Methods for improving efficiency in quality measurement: the example of pain screening. *Int J Qual Health Care*. 2011;23(6):657-663.

Bentley TGK, Palta M, Paulsen AJ, et al. Race and gender associations between obesity and nine health-related quality-of-life measures. *Qual Life Res.* 2011;20(5):665-674.

Broder MS, Chang EY, **Bentley TGK**, Juday T, Uy J. Cost effectiveness of atazanavirritonavir versus lopinavir-ritonavir in treatment-naïve human immunodeficiency virus-infected patients in the United States. *J Med Econ*. 2011;14(2):167-178.

Vanderlaan BF, Broder MS, Chang EY, Oratz R, **Bentley TGK**. Cost-effectiveness of 21-gene assay in node-positive, early-stage breast cancer. *Am J Manag Care*. 2011;17(7):455-464.

Bentley TGK, Kuntz KM, Ringel JS. Bias Associated With Failing To Incorporate Dependence On Event History In Markov Models. *Med Decis Making*. 2010;30(6):651-660.

Bentley TGK, Weinstein MC, Kuntz KM. Effects of categorizing continuous variables in decision-analytic models. *Med Decis Making*. 2009;29(5):549-556.

Lorenz KA, Krebs EE, **Bentley TGK**, et al. Exploring alternative approaches to routine outpatient pain screening. *Pain Med*. 2009;10(7):1291-1299.

Bentley TG, Catanzaro A, Ganiats TG. Implications of the impact of prevalence on test thresholds and outcomes: lessons from tuberculosis. *BMC Research Notes*. 2012;5:563.

Bentley TG, Weinstein MC, Willett WC, Kuntz KM. A cost-effectiveness analysis of folic acid fortification policy in the United States. *Public Health Nutr*. 2009;12(4):455-467.

Bentley TGK, Effros RM, Palar K, Keeler EB. Waste in the U.S. Health care system: a conceptual framework. *Milbank Q*. 2008;86(4):629-659.

Bentley TGK, Willett WC, Weinstein MC, Kuntz KM. Population-Level Changes in Folate Intake by Age, Gender, and Race/Ethnicity after Folic Acid Fortification. *Am J Public Health*. 2006;96(11):2040-2047.

Bentley, TGK. The benefits and risks of folic acid fortification. *Harvard Health Policy Review*. 2003;4(2):25-33.

RECENT PRESENTATIONS AND ABSTRACTS

Bentley TGK, Castillo D, Sadeghi N, Irwin M. Costs Associated with Mindfulness Meditation and Cognitive Behavioral Therapy for Insomnia in Alzheimer's Disease Caregivers. ICIMH 2020 Abstracts; 2020. Global Advances in Health and Medicine. Poster presented at: ICIMH May 2020.

Bentley TGK, Wilson R, MacKenzie B, Russell S. Anxiety, CO2 Tolerance, and Breath Practice in High School Students: Feasibility and Observations of a 6-week Slow Breathing Program. ICIMH 2020 Abstracts; 2020. Global Advances in Health and Medicine. Poster presented at: ICIMH May 2020.

Bentley TGK, Cohen JT, Elkin EB, et al. Validity and Reliability of Three Value Frameworks for Oncology Therapeutics: A Pilot Study. Poster presented at: SMDM 38th Annual North American Meeting; October 2016; Vancouver, BC, Canada.

Bentley TGK, Cohen JT, Elkin EB, Huynh J, Mukherjea A, Neville TH, Popescu I, Zambrano JM, Lee J, Chang E, Broder MS. Validity and Reliability of Three Value Frameworks for Oncology Therapeutics: A Pilot Study. Poster presented at: 38th Annual Meeting of the Society for Medical Decision Making; October 2016; Vancouver, BC, Canada.

Bentley TGK, Aggarwal H, Ortendahl JD, Anene AM, Purdum AG. Economic Implications of Instituting Clinical Care Pathways in Metastatic Colorectal Cancer. Poster presented at: AMCP Managed Care & Specialty Pharmacy Annual Meeting; April 2016; San Francisco, CA.

Bentley TGK, Anene A, Broder MS. Pharmacoeconomic Modeling of Biosimilars in the US: A Conceptual Framework. Poster presented at: Society of Medical Decision Making 37th Annual North American Meeting; October 2015; St. Louis, MO.

Bentley TGK, Broder MS, DeCristofaro A, Megaffin S, Petrone ME, McKearn TJ, Kurtin S, Cogle C. Myelodysplastic Syndromes Management and Treatment: A Conceptual Framework. *Haematologica*. 2014;99(s1);622-623. Abstract n. PB1606.

Bentley TG, Broder MS, Das L, Ortendahl J, Su Y, Wagner S. Targeted therapies for metastatic colorectal cancer (mCRC): A systematic review of cost-effectiveness (CE). *J Clin Oncol*. 2012;30(4). Abstract n. 583.

PROFESSIONAL AFFILIATIONS AND SERVICE

Academy Health, Member, 2004-2015

American Journal of Preventive Medicine, Peer Reviewer

American Public Health Association, Member, 2004-2015

International Journal for Quality in Health Care, Peer Reviewer

International Society for Pharmacoeconomics and Outcomes Research

Member, 2004-present

Scientific Review Committee, 2009 - present

Journal of the American Medical Association, Peer Reviewer

Journal of Medical Economics, Peer Reviewer

Medical Decision Making Policy & Practice, Peer Reviewer

PharmacoEconomics, Peer Reviewer

Society for Medical Decision Making

Co-Chair, Scientific Review Committee, 2013-2014 Annual Meetings

Co-Chair, Social Committee, 2009 Annual Meeting

Editor-in-chief, SMDM Newsletter, 2009-2011

Member, 2003-present

Scientific Review Committee, 2005 - present

LANGUAGES

Fluent French; proficient Spanish, beginner Italian.