

## CURRICULUM VITAE (8/28//2018)

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Professor of Health Policy & Management  
Professor of Medicine, Professor of Industrial Engineering  
Professor of Clinical and Translational Science  
Chair, Department of Health Policy & Management  
University of Pittsburgh Graduate School of Public Health

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### BIOGRAPHICAL INFORMATION

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### EDUCATION AND TRAINING

#### Undergraduate

1972–1977 Harvard College Cambridge, Massachusetts A.B. (1977), *cum laude*, Economics

#### Graduate

1979–1980 University of Pittsburgh School of Medicine Pittsburgh, Pennsylvania First year of medical school

1980–1984 Tufts University School of Medicine Boston, Massachusetts M.D. (1984)

1981–1984 John F. Kennedy School of Government Harvard University Cambridge, Massachusetts M.P.P. (1984), Public Policy and Health Policy

#### Postgraduate

1984–1987 New England Deaconess Hospital Harvard Medical School Boston, Massachusetts Intern and Resident, Department of Medicine  
Clinical Fellow  
[Program Director: Dr. Robert C. Moellering, Jr., Chief of Medicine]

1984–1987 Massachusetts General Hospital Chelsea Memorial Health Center Chelsea, Massachusetts Affiliated Resident  
[Program Director: Dr. Fred Rubin, Unit Chief]

1987–1989 New England Deaconess Hospital Harvard Medical School Boston, Massachusetts Fellow, General Internal Medicine,  
Faculty Development Program in General Internal Medicine  
[Program Director: Dr. Keith Marton, Division Chief, General Internal Medicine]

1996 Intermountain Health Care Salt Lake City, Utah Graduate, Advanced Training Program in Health Care Delivery Improvement

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## APPOINTMENTS AND POSITIONS

### Academic Appointments

1987–1989	Clinical and Research Fellow, Harvard Medical School, Boston.
1989–1993	Instructor in Medicine, Harvard Medical School, Boston.
June 1992	Visiting Professor of Decision Sciences, University of Leiden, Netherlands.
1993–1994	Adjunct Assistant Professor of Health Policy and Medical Decision Sciences, Carnegie Mellon University, Pittsburgh.
1993–1998	Assistant Professor of Medicine, University of Pittsburgh School of Medicine.
1998–2002	Associate Professor of Health Services Administration, University of Pittsburgh School of Public Health.
1998- present	Senior Associate and Charter Member, Center for Biomedical Informatics, University of Pittsburgh.
1998- 2007	Associate Professor of Medicine, University of Pittsburgh School of Medicine.
2000- 2010	Chief, Section of Decision Sciences and Clinical Systems Modeling, Division of General Internal Medicine, University of Pittsburgh School of Medicine.
2002- 2007	Associate Professor of Health Policy and Management, University of Pittsburgh Graduate School of Public Health.
2003- 2007	Associate Professor of Industrial Engineering, University of Pittsburgh School of Engineering.
2005- present	Affiliate Faculty Member, McGowan Institute for Regenerative Medicine, University of Pittsburgh
2005- present	Associate Faculty Member, The CRISMA Laboratory: Clinical Research, Investigation and Systems Modeling of Acute Illness. Department of Critical Care Medicine, University of Pittsburgh.
2007-present	Professor of Medicine, University of Pittsburgh School of Medicine
2007-2010	Professor of Health Policy and Management (secondary appointment)
2007-present	Professor of Industrial Engineering (secondary appointment)
2008-present	Professor of Clinical and Translational Science (secondary appointment)
Nov 2009	Dozer Visiting Scholar, Faculty of Health Sciences, Ben Gurion University of the Negev, Be'er Sheva, Israel
2010-Present	Professor of Health Policy and Management (with tenure)
2010-Present	Chair, Department of Health Policy and Management, University of Pittsburgh Graduate School of Public Health
2014-Present	Director, Public Health Dynamics Laboratory (PHDL) University of Pittsburgh Graduate School of Public Health

### Administrative Appointments

1989–1991	Medical Director, Emerson College Health Services, Boston.
1990–1991	Medical Director, Employee Health Service, New England Deaconess Hospital, Boston.
1991–1993	Director, Center for Clinical Information Systems, New England Deaconess Hospital, Boston.
1993–1998	Director, Internal Medicine Residency Training Program, Shadyside Hospital, Pittsburgh.
1994–1997	Co-Director, General Medicine Fellowship Training Program, University of Pittsburgh School of Medicine.
1997–2000	Medical Director, Department of Informatics and Process Improvement, UPMC Shadyside, Pittsburgh.
1997–2003	Director, General Medicine Fellowship Training Program, University of Pittsburgh School of Medicine.
1998–1999	Associate Medical Director, Institute for Quality and Medical Management, University of Pittsburgh Medical Center (UPMC) Health System.
2001–2004	Associate Director, Clinical Research Training Program, University of Pittsburgh School of Medicine.
1993–present	Core Faculty, Center for Research on Health Care, University of Pittsburgh.
2000-1010	Core Curriculum Director, Clinical Research Training Program (Now: Degree Programs in Clinical Research)
2001-present	Track Director, Outcomes, Effectiveness and Quality, MS program in Clinical Research
2004-2009	Co-Director, Clinical Research Training Program, University of Pittsburgh School of Medicine.
2005-2007	Associate Director, Institute for Clinical Research Education, University of Pittsburgh School of Medicine
2007-2010	Director, Degree-granting Programs, Institute for Clinical Research Education
2007-2010	Director, MS in Clinical Research
2007-2010	Co-Director, PhD in Clinical and Translational Science
2010-present	Co-Director, Center for Research on Health Care
2013-2014	Senior Medical Director, UPMC Health Plan

### Other Appointments

1977–1978	Research Assistant, Harvard-MIT Joint Center for Urban Studies, Cambridge [Supervisor: Professor Robert Schaffer].
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1978–1979	Research Assistant, Center for the Analysis of Health Practices, Harvard University School of Public Health, Boston [Supervisor: Professor Bill Hsiao].
1983–1984	Computer User Assistant, Office for Information Technology, Harvard University, Cambridge.
1978–present	Private Consultant: statistics, data analysis, decision analysis and cost effectiveness analysis, mathematical modeling
1992-present	occasional medical expert witness testimony, various venues

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### CERTIFICATION AND LICENSURE

1985	Diplomat, National Board of Medical Examiners.
1989	Certified, American Board of Internal Medicine (#116274).
1994–2004	Advanced Certification in Geriatric Medicine, American Board of Internal Medicine.
1984–1991	Advanced Cardiac Life Support.
1987–1991	Advanced Trauma Life Support.
1987–1993	Massachusetts Medical License (#56535)
1993–present	Pennsylvania Medical License (MD-050279-L)

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### MEMBERSHIPS IN PROFESSIONAL AND SCIENTIFIC SOCIETIES

1987–1992	Member, International Society for Technology Assessment.
1988–1993	Member, American Medical Informatics Association.
1990–1994	Member, American College of Physicians.
1993–1998	Member, Association of Program Directors in Internal Medicine.
1996–1998	Member, Association of Pharmacoeconomics and Outcomes Research.
2000–2001	Vice-President, Society for Medical Decision Making.
1985–present	Member, Society for Medical Decision Making.
1987–present	Member, Society of General Internal Medicine.
1988–present	Member, Association for Health Services Research, now Academy Health.
1989–2003	Member, American Federation for Clinical Research.
1990–present	Member, American Public Health Association.
1994–present	Fellow, American College of Physicians.
2003–present	Member, Institute for Operations Research and Management Sciences (INFORMS).
2004–present	Member, International Society for Pharmacoeconomics and Outcomes Research (ISPOR)
2007-2008	President Elect, Society for Medical Decision Making
2008-2009	President, Society for Medical Decision Making
2009-2010	Immediate Past President, Society for Medical Decision Making
2012-present	Member, American College of Healthcare Executives (ACHE)

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### HONORS AND DISTINCTIONS

1981–1982	John F. Kennedy Fellow in Public Policy, Kennedy School of Government, Harvard University, Cambridge.
1984–1985	Dr. Elmer E. Hinton Prize for "Outstanding Physician in Patient Relationships," New England Deaconess Hospital, Boston.
1989	First Prize, Lee Lusted Postdoctoral Student Competition, "Simulating Complex Disease: Monte Carlo Models with Memory," annual meeting of the Society for Medical Decision Making, Minneapolis, 1989.
1993–1997	Teacher of the Year for 1993, 1994, 1995, 1996, and 1997, UPMC Shadyside Hospital, Pittsburgh, PA.
2002	Award for Outstanding Short Course, "Advanced Decision Analysis", Society of Medical Decision Making, 24 <sup>th</sup> Annual Meeting, 2002
2003	Cross-Program Faculty Mentoring Award, Association of Clinical Research Training Program Directors (awarded for mentorship of Michael A. Rubin, M.D., Ph.D., Assistant Professor of Medicine, University of Utah).

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2009	Chancellor's Distinguished Teaching Award, University of Pittsburgh
2009-present	Member, University of Pittsburgh Academy of Master Educators.
2012	Member, Delta Omega National Honor Society
June 2012	Nominated for the Dr. James L. Craig Endowed Excellence in Education award – University of Pittsburgh, Graduate School of Public Health
2014	Lifetime Career Achievement Award – Society for Medical Decision Making (SMDM) Annual Meeting, Miami FL

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## PUBLICATIONS

### Refereed Articles (\* indicates work done by a trainee)

1. Bern MM, **Roberts MS**, Yoburn D. Cyclosporin treatment for aplastic anemia: a case report demonstrating a second response to second exposure to cyclosporin. *American Journal of Hematology*. 1987;24:307-9.
2. Zarich SW, Arbuckle BE, Cohen LR, **Roberts MS**, Nesto RW. Diastolic abnormalities in young asymptomatic diabetic patients assessed by pulsed doppler echocardiography. *Journal of the American College of Cardiology*. 1988;11:114-20.
3. Friedman LS, **Roberts MS**, Brett AS, Marton KI. Management of asymptomatic gallstones in the diabetic patient: a decision analysis. *Annals of Internal Medicine*. 1988;109:913-9.
4. Freeman R, **Roberts MS**, Friedman LS, Broadbridge C. Autonomic function and human immunodeficiency virus infection. *Neurology*. 1990;40:575-80.
5. Freeman R, Saul JP, **Roberts MS**, Berger RD, Broadbridge C, Cohen RC. Spectral analysis of heart rate in diabetic autonomic neuropathy. *Archives of Neurology*. 1991;48:185-90.
6. **Roberts MS**, D'Agostino RB, Dillon M, Odell P. Technology assessment in the Framingham Heart Study. *International Journal of Technology Assessment in Health Care*. 1991;7(2):156-70.
7. Klawansky S, Antczak-Bouckoms A, Barr J, Burdick E, **Roberts MS**, Wyshak G, Mosteller F. Using medical registries and data sets for technology assessment: an overview of seven case studies. *International Journal of Technology Assessment in Health Care*. 1991;7(2):194-9.
8. Nesto RW, Phillips RT, Kett KG, McAuliffe LS, **Roberts MS**, Hegarty P. Effect of nifedipine on total ischemic activity and circadian distribution of myocardial ischemic episodes in angina pectoris. *American Journal of Cardiology*. 1991;67:128-32.
9. Friedman LS, Samet JH, **Roberts MS**, Hudlin M, Hans P. Inquiry about victimization experiences: a survey of patient preferences and physician practices. *Archives of Internal Medicine*. 1992;152:1186-90.
10. Schulte L, **Roberts MS**, Zimmerman C, Kettler J, Simon LS. A quantitative assessment of limited joint mobility in diabetics: a goniometric analysis of upper extremity passive range of motion. *Arthritis and Rheumatism*. 1993;36(10):1429-43.
11. \*Ahluwalia JS, **Roberts MS**, Calkins DR. Housestaff knowledge of prevention guidelines. *American Journal of Health Promotion*. 1993;8(2):101-4.
12. Sonnenberg FA, **Roberts MS**, Tsevat J, Barry M, Kent DL. Toward a peer review process for medical decision analysis models. *Medical Care*. 1994;32(suppl 7):JS52-64.
13. \*Saitz R, Mayo-Smith MF, **Roberts MS**, Redmond H, Bernard D, Calkins DR. Individualized treatment for alcohol withdrawal: a randomized double-blind controlled trial. *JAMA*. 1994;272:519-23.
14. Brett AS, **Roberts MS**. Screening for vitamin B<sub>12</sub> deficiency in psychiatric patients. *Journal of General Internal Medicine*. 1994;9:522-4.
15. Collins LA, Samore MH, **Roberts MS**, Luzzati R, Jenkins RL, Lewis DW, Karchmer AW. Risk factors for invasive fungal infections complicating orthotopic liver transplantation. *Journal of Infectious Diseases*. 1994;170:644-52.
16. **Roberts MS**. Decision analysis fosters physician/patient decision making. *Pharmacocepts*. 1995;2(1):9-10.
17. Freeman R, Weiss ST, **Roberts MS**, Zbikowski SM, Sparrow DS. Relationship between heart rate variability and measures of body habitus. *Clinical Autonomic Research*. 1995;5:261-6.
18. Bode RH Jr, Lewis KP, Zarich SW, Pierce ET, **Roberts MS**, Kowalchuck GJ, Satwiciz PR, Gibbons GW, Hunter JA, Espanola CC. Cardiac outcomes after peripheral vascular surgery: comparison of general and regional anesthesia. *Anesthesiology*. 1996;84(1):3-13.

19. \*Smith KJ, **Roberts MS**. Cost-effectiveness of newer antiviral agents for herpes zoster: is the evidence spotty? *Journal of Infectious Diseases*. 1998;178(suppl 1):S85-90.
20. \*Smith KJ, **Roberts MS**. Cost-effectiveness of early treatment with oral acyclovir in adults with chickenpox. *Pharmacoeconomics*. 1998;13(5, pt 2):645-51.
21. Merryman T, Sharbaugh D, **Roberts MS**. Informatics and process improvement: the clinical design unit. *Journal of Nursing Administration*. 1999;29(6):55-61.
22. \*Smith KJ, **Roberts MS**. Cost-effectiveness of vaccination strategies in adults with no history of chickenpox. *American Journal of Medicine*. 2000;108:723-9.
23. \*Smith KJ, **Roberts MS**. Cost-effectiveness of sildenafil. *Annals of Internal Medicine*. 2000;132:933-7.
24. \*Smith KJ, **Roberts MS**. Antiviral therapies for herpes zoster infections: are they economically justifiable? *Pharmacoeconomics*. 2000;18(2):95-104.
25. Angus DC, Rubenfeld GD, **Roberts MS**, Curtis JR, Connors AE, Pinsky MR. Understanding costs and cost-effectiveness in critical care: report from the Second American Thoracic Society Workshop on Outcomes Research. *American Journal of Respiratory and Critical Care Medicine*. 2002;165:540-50.
26. \*Smith KJ, **Roberts MS**. Cost-effectiveness of newer treatment strategies for influenza. *American Journal of Medicine*. 2002;113:300-7.
27. \*King JT Jr, **Roberts MS**. Validity and reliability of the Short Form-36 in cervical spondylotic myelopathy. *Journal of Neurosurgery: Spine*. 2002;97(suppl 2):180-5.
28. \*Smith KJ, **Roberts MS**. Pharmacoeconomics of antiviral therapies for herpes zoster infections. *Expert Review of Pharmacoeconomics and Outcomes Research*. 2002;2(6):527-34.
29. \*King JT Jr, McGinnis KA, **Roberts MS**. Quality of life assessment with the Medical Outcomes Study Short Form-36 among patients with cervical spondylotic myelopathy. *Neurosurgery*. 2003;52(1):113-20.
30. \*King JT Jr, Justice AC, **Roberts MS**, Chang CH, Fusco JS. Long-term HIV/AIDS survival estimation in the highly active antiretroviral therapy era. *Medical Decision Making*. 2003;23:9-20.
31. Beddhu S, Samore MH, **Roberts MS**, Stoddard GJ, Pappas LM, Cheung AK. Creatinine production, nutrition, and glomerular filtration rate estimation. *Journal of the American Society of Nephrology*. 2003;14:1000-5.
32. \*King JT Jr, Styn MA, Tsevat J, **Roberts MS**. "Perfect health" versus "disease-free": the impact of anchor point choice on the measurement of preferences and the calculation of disease-specific disutilities. *Medical Decision Making*. 2003;23(3):212-25.
33. Calabrese AT, Cholka K, Lenhart SE, McCarty B, Zewe G, Sunseri D, **Roberts MS**, Kapoor W. Pharmacist involvement in a multidisciplinary-designed inpatient medication education program. *American Journal of Health-System Pharmacy*. 2003;60(10):1012-8.
34. \*Stahl JE, **Roberts MS**, Gazelle S. Optimizing management and financial performance of the teaching ambulatory care clinic. *Journal of General Internal Medicine*. 2003;18(4):266-74.
35. Beddhu S, Samore MH, **Roberts MS**, Stoddard GJ, Ramkumar N, Pappas LM, Cheung AK. Impact of timing of initiation of dialysis on mortality. *Journal of the American Society of Nephrology*. 2003;14(9):2305-12.
36. Angus DC, Clermont G, Watson RS, Linde-Zwirble WT, **Roberts MS**. Cost-effectiveness of inhaled nitric oxide in the treatment of neonatal respiratory failure in the United States. *Pediatrics*. 2003;112:1351-60.
37. \*Bryce CL, Angus DC, Switala J, **Roberts MS**, Tsevat J. Health status versus utilities of patients with end-stage liver disease: results from the Optimal Timing of Liver Transplantation Project. *Quality of Life Research*. 2004;13:773-82.
38. \*King JT Jr, Tsevat J, Moosy JJ, **Roberts MS**. Preference-based quality of life measurement in patients with cervical spondylotic myelopathy. *Spine*. 2004;29(11):1271-80.
39. \*Williams BA, Kentor ML, Vogt MT, Vogt W, Coley KC, Valalik S, Williams JP, **Roberts MS**, Chelly JE, Harner CD, Fu FH. Economics of nerve block pain management after anterior cruciate ligament reconstruction. *Anesthesiology*. 2004;100(3):697-706.
40. \*King JT Jr, Tsevat J, **Roberts MS**. Positive association between current health and health values for hypothetical disease states. *Medical Decision Making*. 2004;24:367-78.
41. **Roberts MS**, Angus DC, Bryce CL, Valenta Z, Weissfeld L. Survival after liver transplantation in the United States: a disease-specific analysis of the UNOS database. *Liver Transplantation*. 2004;10(7):886-97.
42. Mendeloff J, Ko K, **Roberts MS**, Byrne M, Dew MA. Procuring organ donors as a health investment: how much should we be willing to spend? *Transplantation*. 2004;78(12):1704-10.

43. \*Kreke J, Schaefer AJ, **Roberts MS**. Simulation and critical care modeling. *Current Opinions in Critical Care*. 2004;10(5):395-8.
44. \*Alagoz O, Maillart LM, Schaefer AJ, **Roberts MS**. The optimal timing of living-donor liver transplantation. *Management Science*. 2004;50(10):1420-30.
45. \*King JT Jr, Yonas H, Horowitz MB, Kassam AB, **Roberts MS**. A failure to communicate: patients with cerebral aneurysms and vascular neurosurgeons. *Journal of Neurology, Neurosurgery, and Psychiatry*. 2005;76:550-4.
46. \*Stahl JE, Kong N, Shechter SM, Schaefer AJ, **Roberts MS**. A methodological framework for optimally reorganizing liver transplant regions. *Medical Decision Making*. 2005;25:35-46.
47. \*King JT Jr, Tsevat J, **Roberts MS**. Preference-based quality of life in patients with cerebral aneurysms. *Stroke*. 2005;36:303-9.
48. \*Aujesky DA, Smith KJ, Cornuz JD, **Roberts MS**. Cost-effectiveness of low-molecular-weight heparin for secondary prophylaxis of cancer-related venous thromboembolism. *Thrombosis and Haemostasis*. 2005;93(3):592-9.
49. \*Smith KJ, **Roberts MS**. Quality of life utility values for erectile function and sildenafil treatment. *Clinical Drug Investigation*. 2005;25(2):99-105.
50. \*King JT Jr, Horowitz MB, Kassam AB, Yonas H, **Roberts MS**. The Short Form-12 and the measurement of health status in patients with cerebral aneurysms: performance, validity, and reliability. *Journal of Neurosurgery*. 2005;102:489-94.
51. \*Shechter SM, Bryce CL, Alagoz O, Kreke JE, Stahl JE, Schaefer AJ, Angus DC, **Roberts MS**. A clinically based discrete-event simulation of end-stage liver disease and the organ allocation process. *Medical Decision Making*. 2005;25(2):199-209. PMID 15800304
52. Tabas G, Rubin F, Hanusa BH, **Roberts MS**. Expectations of groups versus pairs of attendings and residents about phone communications and bedside evaluation of hospitalized patients. *Teaching and Learning in Medicine*. 2005;17(3):217-27.
53. \*King JT Jr, Moossy JJ, Tsevat J, **Roberts MS**. Multi-modal assessment of surgery for cervical spondylotic myelopathy. *Journal of Neurosurgery: Spine*. 2005;2:526-34.
54. Kraemer KL, **Roberts MS**, Horton NJ, Palfai T, Samet JH, Freedner N, Tibbetts N, Saitz R. Health utility ratings for a spectrum of alcohol-related health states. *Medical Care*. 2005; 43(6):541-50.
55. \*Aujesky D, Smith KJ, **Roberts MS**. Oral anticoagulation strategies after a first idiopathic venous thromboembolic event. *American Journal of Medicine*. 2005;118(6):625-35.
56. \*Braithwaite RS, Justice AC, Chang CC, Fusco JS, Raffanti SR, Wong JB, **Roberts MS**. Estimating the proportion of individuals infected with human immunodeficiency virus who will die of comorbid diseases. *American Journal of Medicine*. 2005;118(8):890-98.
57. Stoffman MJ, **Roberts MS**, Tsevat J, King JT Jr. Cervical spondylotic myelopathy, depression, and anxiety: a cohort analysis of 89 patients. *Neurosurgery*. 2005;57:307-13.
58. \*Aujesky D, Smith KJ, Cornuz J, **Roberts MS**. Cost-effectiveness of low-molecular-weight heparin for treatment of pulmonary embolism. *Chest*. 2005;128(3):1601-1610. PMID:16162764
59. \*King JT Jr, Kassam AB, Horowitz MB, Yonas H, Tsevat J, **Roberts MS**. Mental health, anxiety, and depression in patients with cerebral aneurysms. *Journal of Neurosurgery*. 2005; 103:636-641.
60. \*Alagoz O, Bryce CL, Shechter S, Schaefer A, Chang J, Angus DC, **Roberts MS**. Incorporating biological natural history in simulation models: empiric estimates of the progression of end-stage liver disease. *Medical Decision Making*. 2005;25:620-32 PMID 16282213
61. \*King JT Jr, Tsevat J, Lave JR, **Roberts MS**. Willingness to pay for a quality-adjusted life-year in neurosurgical disease: implications for societal health care resource allocation. *Medical Decision Making*. 2005;25:667-77
62. \*Braithwaite S, Fridsma D, **Roberts MS**. The cost-effectiveness of strategies to reduce mortality from an intentional release of aerosolized Anthrax spores. *Medical Decision Making*. 2006;26:182-193 PMID:16525172
63. \*King JT Jr, Horowitz MB, Tsevat J, **Roberts MS**. What do patients with cerebral aneurysms know about their condition? *Neurosurgery*. 2006;58 (5):824-30
64. \*Smith KJ, Ness RB, **Roberts MS**. Hospitalization for pelvic inflammatory disease: a cost-effectiveness analysis. *Sexually Transmitted Diseases*. 2006;33 (8):1-5
65. \*Shechter SM, Schaefer AJ, Braithwaite RS, **Roberts MS**. Increasing the efficiency of Monte Carlo cohort simulations with variance reduction techniques. *Medical Decision Making*. 2006;26 (5):550-553

66. \*King JT Jr, Tsevat J, **Roberts MS**. The physical performance test and the evaluation of functional status in patients with cerebral aneurysms. *Journal of Neurosurgery*. 2006;104 (4):525-530
67. \*Smith KJ, Barnato AE, **Roberts MS**. Teaching medical decision modeling: A qualitative description of student errors and curriculum responses. *Medical Decision Making* 2006;26:583-588
68. **Roberts MS**. The use of decision analysis for understanding the impact of diagnostic testing errors in pathology. *American Journal of Clinical Pathology* 124 (suppl 1- Pathology Pattern Reviews) 2006;S126:S136
69. \*Zgibor JC, Piatt GA, Ruppert K, Orchard TJ, **Roberts MS**. Deficiencies of cardiovascular risk prediction models in type 1 diabetes. *Diabetes Care*. 2006;29 (8):1860-1865
70. \*King JT, DiLuna ML, Cicchetti DV, Tsevat J, **Roberts MS**. Cognitive functioning in patients with cerebral aneurysms measured with the Mini Mental State Examination and the Telephone Interview for Cognitive Status. *Neurosurgery*. 2006;59 (4): 803-811
71. \*Braithwaite RS, Shechter S, **Roberts MS**, Schaefer A, Bangsberg DR, Harrigan PR, Justice AC. Explaining variability in the relationship between adherence to antiretroviral medications and HIV mutation accumulation. *Journal of Antimicrobial Chemotherapy*. 2006;58 (5): 1036-43
72. Braithwaite RS, **Roberts MS**, Justice AC. Incorporating quality of evidence into decision analytic modeling. *Annals of Internal Medicine*. 2007;146: 133-141
73. Saitz R, Palfai TP, Cheng DM, Horton NJ, Freedner N, Dukes K, Kraemer KL, **Roberts MS**, Guerriero RT, Samet, JH. Brief intervention for unhealthy alcohol use in hospitalized medical patients: a randomized-controlled effectiveness trial. *Annals of Internal Medicine*. 2007;146:167-176.
74. \*Alagoz O, Maillart LM, Schaefer AJ, **Roberts MS**. Determining the acceptance of cadaveric livers using an implicit model of the waiting list. *Operations Research*. 2007;55 (1): 24-36
75. Ahmad J, Bryce C, Cacciarelli T, **Roberts MS**. Differences in access to liver transplantation: Disease severity, waiting time, and transplantation center volume. *Annals of Internal Medicine*. 2007;146:707-713
76. \*Smith KJ, **Roberts MS**. Sequential medication strategies for postherpetic neuralgia: a cost-effectiveness analysis. *Journal of Pain*. 2007;8 (5): 396-404
77. Braithwaite RS, Shechter S, Chang CCH, Schaefer A, **Roberts MS**. Estimating the rate of accumulating drug resistance mutations in the HIV genome. *Value in Health*. 2007; 10 (3): 201-213
78. \*Campbell KA, Berger RP, Ettaro L, **Roberts MS**. Cost-effectiveness of head CT in infants with possible inflicted traumatic brain injury. *Pediatrics*, 2007;120 (2): 295-304. PMID:17671055
79. Ness RB, Koopman JS, **Roberts MS**. Causal system modeling in chronic disease epidemiology: A proposal. *Annals of Epidemiology*. 17(7):564-8, 2007 Jul.
80. \*Braithwaite RS, Conigliaro J, **Roberts MS**, Shechter S, Schaefer A, McGinnis K, Rodriguez MC, Rabenek L, Bryant K, Justice AC, MD, PhD. Estimating the Impact of Alcohol Consumption on Survival for HIV+ Individuals *AIDS Care*. 19(4):459-66, 2007 Apr
81. \*Smith KJ, Cook RL, **Roberts MS**. Time from sexually transmitted infection acquisition to pelvic inflammatory disease development: influence on the cost-effectiveness of different screening intervals. *Value in Health*. Sep-Oct;10(5):358-66, 2007. PMID:
82. \*Alagoz O, Maillart LM, Schaefer AJ, **Roberts MS**. Choosing among living-donor and cadaveric livers. *Management Science*. 53(11):1702-1715, 2007
83. \*Braithwaite RS, Kozal M, Chang CCH, **Roberts MS**, Fultz S, Goetz M, Gibert C, Rodriguez-Barradas M, Mole L, Justice AC. Adherence, virologic responses and immunologic outcomes for HIV-infected veterans starting combination antiretroviral therapies. *AIDS* 2007 Jul 31;21(12):1579-89. PMID 17630553
84. Ruppert K, **Roberts MS**, Orchard TJ, Zgibor JC. Cardiovascular disease risk prediction in Type 1 Diabetes: Accounting for the differences. *Diabetes Res Clin Pract* 2007 Nov;78(2):234-7. PMID: 17467846
85. Palfai TP, Cheng DM, Samet JH, Kraemer KL, **Roberts MS**, Saitz R. Depressive symptoms and subsequent alcohol use and problems: a prospective study of medical inpatients with unhealthy alcohol use. *J Stud Alcohol Drugs* 2007 Sep;68(5):673-80. PMID: 17690800
86. \*Smith KJ, Ness RB, Wiesenfeld HC, **Roberts MS**. Cost-Effectiveness of alternative outpatient pelvic inflammatory disease treatment strategies. *Sex Transm Dis* 2007 Dec;34(12):960-6. PMID: 18077847
87. \*Saka G, Kreke, JE, Schaefer AJ, Angus DC, **Roberts MS**. Use of dynamic microsimulation to predict disease progression in patients with pneumonia-related sepsis. *Critical Care* 2007;11(4):146. PMID: 17570835, PMCID: PMC2206430
88. \*Braithwaite RS, Concato J, Chang CC, **Roberts MS**, Justice AC. A framework for tailoring clinical guidelines to comorbidity at the point of care. *Arch Int Med* 2008 Jun 9;168(11):1230-1. PMID: 18039996

89. Kahn JM, Linde-Zwirble WT, Wunsch H, Barnato AE, Iwashyna TJ, **Roberts MS**, Lave JR, Angus DC. Potential value of regionalized intensive care for mechanically ventilated medical patients. *American Journal of Respiratory and Critical Care Medicine*. 177:285-291, 2008 PMID: 18006884 PMCID: PMC2218846.
90. \*Braithwaite RS, **Roberts MS**, Chang CCH, Goetz MB, Gibert CL, Rodriguez-Barradas MC, Shechter S, Schaefer AJ, Nucifora K, Koppenhaver R, Justice AC. The influence of alternative thresholds for initiating HIV treatment on life expectancy and quality-adjusted life expectancy: A decision model. *Ann Intern Med*. 2008 Feb 5;148(3):178-85 PMID: 18252681 PMCID: PMC3124094.
91. Dickinson DM, Arrington CJ, Fant G, Levine G, Schaubel DE, Pruett TL, **Roberts MS**, Wolfe RA. SRTR Program-Specific Reports on Outcomes: A Guide for the New Reader. *Am J Transplant*. 2008 Apr;8(4 Pt 2):1012-1026 PMID: 18336703
92. Shechter SM, Bailey MD, Schaefer AJ, **Roberts MS**. The optimal time to initiate HIV therapy under ordered health states. *Operations Research*. 2008; 56: 20-33
93. \*Smith KJ, Zimmerman RK, Lin CJ, Nowalk MP, Ko FS, McEllistrem C, **Roberts MS**. Alternative strategies for adult pneumococcal polysaccharide vaccination: A cost-effectiveness analysis. *Vaccine*. 2008 Mar;26(11): 1420-31 PMID: 18272262
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128. Shechter S, Bailey M, Schaefer A, Chang J, Braithwaite S, **Roberts M**. Optimal time to initiate HIV therapy: A Markov decision process approach. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*. 2005;26(1):E40.
129. Shechter S, Schaefer A, Chang J, Braithwaite S, **Roberts M**. A Markov model of the natural history of HIV. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E59.
130. Kong N, Schaefer A, Hunsaker B, **Roberts M**. Computational improvement of integer programming models for determining the optimal configuration of regions in the U.S. organ transplantation and allocation network. Oral abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E14.
131. Saka G, Kreke J, Schaefer A, Angus D, **Roberts M**. Predicting disease progression using dynamic simulation in pneumonia-related sepsis. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E64.
132. Campbell K, **Roberts M**. Detecting occult neurotrauma in infancy: a cost effectiveness analysis. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E38.
133. Smith K, Ness R, Wiesenfeld H, **Roberts M**. A little bit means a lot: Cost-effectiveness of alternative outpatient PID treatment strategies. Oral abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E29.
134. Smith K, Ness R, **Roberts M**. Hospitalization vs. outpatient therapy for PID: An exploratory cost-effectiveness analysis. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E5.
135. Zgibor J, Rupert R, Orchard T, **Roberts M**. Poor prediction of the Framingham risk function for CHK in Type 1 diabetes: Identifying the gaps. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E32.
136. Stockman C, **Roberts M**. The effect of the hypothetical nature of the decision task on measurements of health risk preferences. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E47.
137. Stockman C, **Roberts M**. The influence of belief in luck on choices involving uncertainty. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E61.
138. Alagoz O, Maillart L, Schaefer A, **Roberts MS**. Choosing between cadaveric and living-donor livers: a Markov decision process approach. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E74.
139. King J, Tsevat J, **Roberts M**. The effects of difficulty with preference assessment and cognitive impairment on measuring preferences for current health. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E48.
140. Braithwaite S, Justice A, **Roberts M**. Taming Table 1: Making modeling assumptions more transparent through a sensitivity analysis based on strength of evidence. Poster abstract at the annual meeting of the Society for Medical Decision Making, 2005. *Medical Decision Making*, 2005;26(1):E74.
141. Roberts, Mark S. Risk Preferences and Perceptions and Medical Decision Making. Invited presentation at the Evidence-Based Public Policy: New Tools from Experimental Economics Meeting, Gatineau, QC, October, 2005.
142. Kreke J, Bailey M, **Roberts M**, Schaefer A. Optimizing testing and discharge decisions in the management of severe sepsis. Annual meeting of the Institute for Operations Research and the Management Sciences (INFORMS), 2005
143. Kong N, Hunsaker B, **Roberts M**, Schaefer A. Optimal region design for the liver allocation and transplantation system. Annual meeting of the Institute for Operations Research and Management Sciences (INFORMS) 2005

144. Saka G, Angus D, Kreke J, **Roberts M**, Schaefer A. Simulating the natural history of sepsis progression in the GENIMS Cohort. Annual meeting of the Institute for Operations Research and Management Sciences (INFORMS) 2005
145. Shechter S, Bailey M, Braithwaite S, **Roberts M**, Schaefer A. The optimal time to initiate HIV therapy. Annual meeting of the Institute for Operations Research and Management Sciences (INFORMS) 2005
146. Alagoz O, Maillart L, **Roberts M**, Schaefer A. Determining the optimal set of regions for multiple listing patients with end-stage liver disease. Annual meeting of the Institute for Operations Research and Management Sciences (INFORMS) 2005
147. Schaefer A, Alagoz, O, Maillart L, **Roberts M**, Sandikci B. Optimal cadaveric liver acceptance with an explicit model of the waiting list. Annual meeting of the Institute for Operations Research and Management Sciences (INFORMS) 2005
148. Ozkasap T, Bailey M, **Roberts M**, Schaefer A. What objective are liver surgeons optimizing? Annual meeting of the Institute for Operations Research and Management Sciences (INFORMS) 2005
149. Zgibor JC, Ruppert KM, Orchard TJ, **Roberts MS**. Predicting coronary heart disease events in Type 1 diabetes: A new opportunity for prevention. Poster Presentation, American Diabetes Association, 2006
150. Zimmerman RK, Smith K, **Roberts M**: Vaccination to prevent invasive pneumococcal disease: what age to start and how often? A decision analyses. Poster at the Infectious Disease Society of America 2006 meeting, Toronto, Ontario, October 2006
151. King J, Tsevat J, **Roberts, MS**. Health values in patients with cervical spondylotic myelopathy as measured with the quality of well-being scale, self-administered (QWB-SA). Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
152. Barnato AE, Smith K, Resnick NM, Rosenberg L, **Roberts MS**. Absence of hedonic adaptation in urge incontinence. Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
153. Smith KJ, **Roberts MS**. Quality of life utilities for pelvic inflammatory disease health states. Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
154. Smith KJ, **Roberts MS**, Zimmerman RK. Vaccination to prevent invasive pneumococcal disease: What ages and how often? Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006
155. Sandikci B, Alagoz O, Maillart L, Schaefer A, **Roberts MS**. Using the waiting list information to optimize the timing of liver transplantation. Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
156. Lee BY, Bedford VL, **Roberts MS**, Smith KJ, Carley KM. An agent-based city-wide computer simulation of the hypothetical spread of avian influenza in Norfolk, VA. Oral abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
157. Stockman CK, Somers TJ, **Roberts MS**. Belief in luck and the perceived risk of developing breast cancer. Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
158. Byrne MM, **Roberts MS**, Weissfeld J. Long term psychosocial effects of lung cancer screening. Poster abstract at the annual meeting of the Society for Medical Decision Making, October, 2006.
159. Saka G, Maillart L, **Roberts M**, Schaefer A. A new liver allocation mechanism that increases patient autonomy. Oral presentation at the annual meeting of INFORMS, November, 2006.
160. Sandikci B, Alagoz O, Maillart L, **Roberts M**, Schaefer A. Modeling the patient perspective on liver acceptance using an explicit model of the waiting list. Oral presentation at the annual meeting of INFORMS, November, 2006.
161. Koppenhaver R, Braithwaite RS, **Roberts M**, Schaefer A, Shechter S. Incorporating toxicity information in HAART therapy initiation. Poster abstract at the annual meeting of INFORMS, November, 2006
162. Shechter S, Bailey M, Braithwaite S, **Roberts M**, Schaefer A. An MDP model of the optimal time to initiate HIV therapy as a function of two variables. Oral presentation at the annual meeting of INFORMS, November, 2006.
163. Kong N, Hunsaker B, **Roberts M**, Schaefer A. Maximizing the Efficiency of the U.S. Liver Allocation System through region selection Oral presentation at the annual meeting of INFORMS, November, 2006
164. Demirci M, Hunsaker B, **Roberts M**, Schaefer A. Optimal design of regions for liver transplantation: A stochastic programming approach. Oral presentation at the annual meeting of INFORMS, November, 2006.
165. Smith KJ, Zimmerman RK, Lin CJ, Nowalk MP, Ko, FS, McEllistrem MC, **Roberts MS**. Alternative Timing and Revaccination Strategies for Adult Pneumococcal Polysaccharide Vaccination. Poster at 41st National Immunization Conference, Kansas City, MO March 5-8, 2007
166. Smith KJ, Zimmerman RK, Lin CJ, Nowalk MP, Ko FS, McEllistrem MC, **Roberts MS**. Alternative strategies for adult pneumococcal polysaccharide vaccination: A Markov Analysis. Research Forum, 40<sup>th</sup> Annual STFM Spring Conference, Chicago, IL, April 24 – 29, 2007
167. Byrne MM, Weissfeld J, **Roberts MS**. *Fear of cancer, anxiety and perceived risk of cancer following lung cancer screening*. Plenary podium presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007

168. Sandikci B, Maillart LM, Schaefer AJ, Alagoz O, **Roberts MS**. *Estimating the patient's price of privacy in liver transplantation*. Podium presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007
169. Kapoor A, Kraemer KL, Smith K, **Roberts MS**, Saitz R. *Cost-effectiveness of adding the serum CDT test to questionnaire based screening for unhealthy alcohol use in the primary care setting*. Poster presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007
170. King JT, Brandt CA, Tsevat J, **Roberts MS**. *A national internet-based survey of health values for cerebral Aneurysms*. Poster presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007
171. Hsu HE, Smith KS, **Roberts MS**, Kramer KM, Orchard TJ, Piatt GA, Seidel M, Zgibor JC, Bryce CL. *Cost-effectiveness analysis of community-based efforts to prevent diabetes*. Poster presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007
172. Byrne MM, Weissfeld J, **Roberts MS**, *Health care utilization following lung cancer screening*. Poster presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007
173. Stockman CK, **Roberts MS**. Risk preferences, risk (mis)perceptions and racial treatment disparities. Poster presentation, 29<sup>th</sup> meeting of the Society for Medical Decision Making, Pittsburgh, PA. October, 2007
174. Zimmerman RK, Smith KJ, **Roberts MS**, Nowalk MP, Lin CJ: *Markov Decision Analyses of Pneumococcal Polysaccharide Vaccine Policy Options*. Poster at the 45th Infectious Disease Society of America 2007 annual meeting, San Diego, CA, October 2007.
175. Bhandari A, **Roberts MS**, Schaefer AJ. Optimal Liver Acceptance Policies for Risk-sensitive Patients. Oral presentation, INFORMS annual meeting, Seattle, WA, Nov, 2007.
176. Sandikci B, Alagoz O, Maillart L, **Roberts MS**, Schaefer AJ. Estimating the Patient's Price of Privacy in Liver Transplantation. Oral presentation, INFORMS annual meeting, Seattle, WA, Nov, 2007.
177. Saka G, Alagoz O, Maillart L, **Roberts MS**, Schaefer AJ. In Which OPOs Should an End-stage Liver Disease Patient List? Oral presentation, INFORMS annual meeting, Seattle, WA, Nov, 2007.
178. Koppenhaver R, Braithwaite RS, **Roberts MS**, Schaefer AJ, Shechter S. The Effect of Adherence and Toxicity on HIV Therapy Initiation. Oral presentation, INFORMS annual meeting, Seattle, WA, Nov, 2007.

<did not record abstracts between 2007 and 2011>

179. Kuo S, Smith KJ, Piatt GA, Seidel MC, Zgibor JC, **Roberts MS**, Bryce CL. Cost-effectiveness of multiple modalities of lifestyle intervention in the community - projections from the Rethinking Eating and ACTivity Study [abstract]. *Diabetes* 2011;60(suppl 1):A67.
180. Donohue J, Herbeck Belnap B, Men A, He F, **Roberts MS**, Rollman BL. The 12-month cost effectiveness of telephone-delivered collaborative care for post-CABG depression. Oral presentation, 2012 SGIM meeting, Orlando, FL. May 10, 2012.
181. **Roberts, MS**. Health Systems Engineering: A Multidisciplinary Approach to Redesigning Education in Improving Health Systems. AUPHA 2012 Annual Meeting, 5/31-6/03, Minneapolis, MN
182. J. Chhatwal, M.H. Mofrad, **M.S. Roberts** (2012) "Cost-Effectiveness Analysis Using Markov Decision Processes" – 2012 Annual SMDM meeting
183. **Roberts, MS** "Rheumatoid Arthritis Patients: Experiences of Medication Side Effects and Subsequent Decision Making about Medication", Epidemiology and Health Services Poster Session, 2012 ACR/ARHP Annual Meeting, Washington DC, Nov 9-12, 2012.
184. J. Chhatwal, **MS Roberts** "Cost-Effectiveness of Hepatitis C Screening in United States Prisons: An Agent-Based Approach", presented at the ISPOR 19<sup>th</sup> Annual International Meeting, Palais des Congres de Montreal, Montreal, QC, Canada, May 31-June 4, 2014.
185. Anahita Khojandi, Lisa M. Maillart, Oleg A. Prokopyev, **Mark S. Roberts**, Timothy Brown, William W. Barrington (2014) Optimal Implantable Cardioverter Defibrillator (ICD) Generator Replacement. *INFORMS Journal on Computing* 26(3):599-615. <http://dx.doi.org/10.1287/ijoc.2013.0586>
186. Chhatwal J, Li K, He T, **Roberts MS**, Ayer T, Samur S, Grefenstette J, Spaulding AC. Hepatitis C Treatment in United States Prisons Prevents Transmission and is Cost Saving for the Society. Poster presentation at the Liver Meeting for the AASLD, Boston, MA, Nov, 2016.
187. Chhatwal J, Samur S, Kues B, Ayer T, **Roberts MS**, Kanwal F, Hur C, Donnell DMS, Chung RT. Optimal Timing of Hepatitis C Treatment for Patients on the Liver Transplant Waiting List. Poster or oral presentation at the Liver Meeting for the AASLD, Boston, MA, Nov, 2016.
188. Chhatwal J, Chen Q, Ayer T, Kanwal F, Wang X, Roberts, MS, Fagiuoli S, Petersen J. Projection of patients who fail treatment in the era of direct-acting antivirals. International Liver Conference for the EASL, Amsterdam, The Netherlands, April 2017.

189. Krauland, MG, R. Frankeny, J Lewis, L. Brink, E. Hulse, **MS Roberts**, K. Hacker. The Relationship between Social Determinants of Health and Excess Cardiovascular Disease in Allegheny County. Presented at Society for Medical Decision Making 39th Annual North American Meeting, October 2017.
190. Emily D. Bethea, MD, Sumeyye Samur, PhD, Fasiha Kanwal, MD, MSHS, Turgay Ayer, PhD, Chin Hur, MD, MPH, **Mark S. Roberts**, MD, MPP, Norah Terrault, MD, Raymond T. Chung, MD, Jagpreet Chhatwal, PhD. "Transplanting HCV-Infected Livers into Uninfected Recipients is a Cost-effectiveness Strategy." Oral presentation by Jagpreet Chhatwal, Parallel Session at The Liver Meeting® 2018 in San Francisco, Monday, November 12, 2018, 2:00 p.m.

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### PROFESSIONAL ACTIVITIES: TEACHING

#### Nonclinical Teaching

##### *Harvard University*

- 1977–1979 Teaching Assistant, Economic Analysis, Department of Economics, Harvard College, Cambridge.
- 1982–1983 Head Teaching Fellow, Empirical Analysis, John F. Kennedy School of Government, Harvard University, Cambridge.
- 1983–1984 Teaching Fellow, Quantitative Methods for Public Choice, John F. Kennedy School of Government, Harvard University, Cambridge.
- 1985–1986 Nonresident Pre-Medical Advisor, North House, Harvard University, Cambridge.
- 1985–1986 Resident Director, Richardson House, Tufts University, Medford, Massachusetts.
- 1985–1993 Guest Lecturer, Statistical and Ethical Considerations in Medical Clinical Trials (in M332 Empirical Analysis for Public Choice), John F. Kennedy School of Government, Harvard University, Cambridge.
- 1986–1993 Resident Tutor and Chairman of the Pre-Medical Advisory Committee, North House, Harvard University, Cambridge.
- 1987–1990 Guest Lecturer, An Introduction to Decision Analysis (in HST 190 Introduction to Statistics), Harvard Medical School, Boston.
- 1989–1993 Director, General Medicine Fellowship Research Seminar Series, Division of General Medicine, New England Deaconess Hospital, Boston.
- 1990 Instructor, Decision Theory and Clinical Research, Summer Clinical Effectiveness Program, General Medicine Fellowship Program, Harvard Medical School, Boston.
- 1991–1993 Guest Lecturer, Markov Models/Simulation Models (in HPB 284ab Topics in Health Decision Sciences), Harvard School of Public Health, Boston.
- 1991–1993 Guest Lecturer, Probabilistic Sensitivity Analysis (in HPB 281c Seminar in Clinical Decision Analysis), Harvard School of Public Health, Boston.

##### *University of Pittsburgh*

- 1996 Guest Lecturer, Markov Processes in Medical Decision Making (in ISP-2015 Introduction of Medical Informatics), University of Pittsburgh School of Medicine.
- 1998–present Guest Lecturer, Quality Measurement and Improvement in Health Care Organizations (in HSADMIN 2105 Health and Medical Care Organization), University of Pittsburgh Graduate School of Public Health.
- 1998–present Course Director, CLRES 2120/HS ADMIN 2220 Cost Effectiveness Analysis in Health and Medicine (1 credit, taught with K. Kramer, C. Bryce, and J. Lave), University of Pittsburgh School of Medicine.
- 1999–2009 Course Director, CLRES 2121/HS ADMIN 2217 Clinical Decision Analysis (1 credit, taught with C. Bryce, who is now course director), University of Pittsburgh School of Medicine.
- 2000–2005 Course Director, CLRES 2110 Quality Improvement in Health Care (1 credit), University of Pittsburgh School of Medicine.
- 2001–2010 Course Director, CLRES 2005 Computerized Methods of Clinical Research (1 credit), University of Pittsburgh School of Medicine.
- 2001–2006 Course Director, CLRES 2122 Advanced Methods for Decision and Cost-Effectiveness Analysis (1 credit), University of Pittsburgh School of Medicine.
- 2001–2010 Instructor, CLRES 2020 Biostatistics: Statistical Approaches to Clinical Research (3 lectures), University of Pittsburgh School of Medicine.
- 2003-2010 Course Director, CLRES 2010 Clinical Research Methods (3 credits), University of Pittsburgh School of Medicine.

- 2003-2005 Course Director, CLRES 2071/2072: Research Design and Development Seminar (5 credit longitudinal grant development and writing course)
- 2005, 2008 Instructor, CLRES 2024 Non-Parametric Methods, University of Pittsburgh School of Medicine (3-4 lectures in 1 credit course)
- 2004-present Instructor, course co-director CLRES 2124 Directed Research in Decision Analysis and Cost Effectiveness Analysis, University of Pittsburgh School of Medicine
- 2005–present Instructor, CLRES 2410 Translating Research into Practice Methods: Barriers and Evaluation (1 lecture), University of Pittsburgh School of Medicine.
- 2005–2006 Instructor: BIOINF2115/CLRES 2420 Mathematical Modeling Techniques for Complex Biological Systems (co-developer of the course and developing and giving 6 lectures) University of Pittsburgh School of Medicine
- 2009-present Guest Lecturer, CLRES 2700 Know Your K's and R's: Successful Grant Applications for Fellows and Junior Faculty, Clinical Research Training Program (CRTP), University of Pittsburgh
- 2011-present Course Director: HPM 2141 *Managerial Epidemiology*, University of Pittsburgh Graduate School of Public Health
- Sept-Dec 2011 Co-Instructor: HPM 2135 *Health Policy*, University of Pittsburgh, Graduate School of Public Health
- Sept 20, 2011 Guest Lecturer - Health Services Research Seminar Series – *The Effect of HIV Treatment Strategies on Population Life Expectancies in Resource Limited Settings*
- Sept 21, 2011 Guest Lecturer, BIOINF2011 – *Decision Making and Probabilistic Reasoning*
- Sept 28, 2011 Guest Lecturer – Global Health Seminar Series – *Health Insurance Systems in Low Middle Income Countries*
- Sept 28, 2011 Guest Lecturer – PUBHLT 1001: *Introduction to Global Health*
- Oct 14, 2011 Guest Lecturer – Department of Biomedical Informatics – *Comparative Effectiveness Research: An Overview*
- Jan 25, 2012 Guest Lecturer, UPMC Internal Medicine Residency Program – Montefiore Hospital – *Quality and Variation in US Medical Care Systems*
- Jan 26, 2012 Guest Lecturer, UPMC Internal Medicine Residency Program – VA Pittsburgh Healthcare System – *Quality and Variation in US Medical Care Systems*
- Sept 7, 2012 Guest Lecturer, UPMC Fundamentals of Bench Research, *Know Your K's & R's: Successful Grant Applications for Fellows and Junior Faculty*
- Sept 17, 2012 Guest Lecture, BIOINF 2011 Foundations of Clinical and Public Health Informatics, *Decision Making and Probabilistic Reasoning*
- Sept 18, 2012 Guest Lecturer, University of Pittsburgh School of Nursing/UPMC Health Plan – *Management of Patients with Chronic Disease: A Pathway to Wellness*
- Sept 19, 2012 Guest Lecturer – CLRES 2900, *Using Decision Sciences to Improve Practice*
- Nov 8, 2012 Invited Lecturer – UPMC Department of Medicine Annual Cooper Lecture – *The Power and Pitfalls of Evidence-Based Medicine...and the Promise of Comparative Effectiveness Research*
- Nov 15, 2012 Guest Lecture, NEXT-UP Workshop – UPMC Department of Neurology Resident Lecture – *Foundation of Aims*
- Nov 27, 2012 Guest Lecture, UPMC Department of Medicine Resident Lecture, *Cost-Effectiveness*
- Nov 27, 2012 Guest Lecture, CLRES
- Nov 28, 2012 Panelist, ICRE Career Development Session, *Career Development, Obstacles, Challenges and Successes*
- Dec 7, 2012 TEAM (Training Early Academic Mentors) Panelist, ICRE
- 2013-present Co-Instructor, HPM 2001 *Introduction to Health Policy*, University of Pittsburgh, Graduate School of Public Health
- Jan 4, 2013 Guest Lecturer, UPMC Medicine Grand Rounds, *Quality Improvement/System Change Research in Palliative Care*
- Feb 6, 2013 Guest Lecturer, IE 1108 Health Systems Engineering – *Pay for Performance and Evidence Based Medicine*
- Feb 13, 2013 Guest Lecturer, CLRES 2010, *Quasi-experimental designs*
- Mar 29, 2013 Guest Lecturer, UPMC Endocrine Grand Rounds, *The Power and Pitfalls of Evidence-Based Medicine...and the Promise of Comparative Effectiveness Research*
- May 1, 2013 Guest Lecturer, CLRES 2610 Research Methods in Palliative Care, *Quality Improvement/System Change Research in Palliative Care*
- June 7, 2013 Guest Lecture, UPMC Health Plan Conclave 2013: *Putting the Value in Value-Based Care*
- Sept 25, 2013 Guest Lecture – BIOINF2011 – *Decision Making and Probabilistic Reasoning*
- Sept 25, 2013 Guest Lecture - Global Health Seminar Series – *Health Insurance Systems in Low Middle Income Countries*



- Oct 3, 2013 University of Pittsburgh, Science 2013 Convergence – *A Trillion Here, A Trillion There: The Pathophysiology of the Costs of US Health Care*
- Oct 8, 2013 University of Pittsburgh and MIDAS National Center of Excellence, MIDAS Workshop on Engaging Computational Methods for Public Health Law and Policy
- Oct 10, 2013 Co-Instructor, CLRES 2121 Cost Effectiveness – *ROC Curves, Value of Information, Sensitivity Analysis*
- Oct 11, 2013 2013 Update in Internal Medicine: Evidence Based Approaches to Common Medical Problems – *Choosing Wisely: Evidence Based Recommendations for Evaluation and Management*
- Oct 28, 2013 Guest Lecturer, EPIDEM 2260 – *Cost Effectiveness*
- Oct 31, 2013 Guest Lecturer - NIH Mentored Career Development Award Workshop - *Know Your K: Writing a Successful Career Development Award Application*
- Nov 26, 2013 Guest Lecturer - CLRES 2122 - *Accounting for Future Costs*
- Feb 7, 2014 Guest Lecturer-Geriatric Medicine Grand Rounds - *From Blunt Rules to Personalized Care: The Power and Pitfalls of Evidence-Based Medicine*
- April 30, 2014 Guest Lecturer - Transplant Hepatology Didactic Series – *Cost-Effectiveness Use of Special Instruments, Tests and Therapy in the Diagnosis and Management of Liver Disorders*  
(2014-2016 Not recorded)
- Jan. 17, 2017 Guest Lecturer - HPM 2001/*Health Policy and Management in Public Health: Determinates of the Organization, Financing and Delivery of Health Care*
- Feb. 9, 2017 Guest Lecturer - Health Systems Engineering (IE2108/1108)
- Mar. 2, 2017 Guest Lecturer - ARC 2017 - "*Data and Modeling – the Research Strategy of the Public Health Dynamics Laboratory*"
- Mar. 31, 2017 Guest Lecturer - School of Medicine - Medical School Elective - "*Health Insurance and Health Care Systems*"
- April 4, 2017 Univ. of Pittsburgh - Air Quality Scenario Modeling Workshops with Intermedix, GSPH and 100 Resilient Cities
- April 21, 2017 Guest Speaker - UPMC Stroke Conference – Talk based on experience as a healthcare leader and survivor
- May 10, 2017 Guest Lecturer - Univ. of Pittsburgh - CLRES 2610 - "*Research Methods in Palliative Care*"
- Oct. 2, 2017 Workshops Moderator - Univ. of Pittsburgh - PHDL Workshop series on Opioid Modeling
- Oct. 5, 2017 Guest Lecturer - CMU Gates Hillman Center - (PM-BME Course) "*The Precision Medicine for Biomedical Engineers*"
- Oct. 4, 2017 Guest Lecturer - Univ. of Pittsburgh - BIOINF 2011 "*Foundations of Clinical and Public Health Informatics*"
- Feb. 8, 2018 Guest Lecturer - Univ. of Pittsburgh - (IE 1108/2108) - Health Systems Engineering
- Mar. 30, 2018 Guest Lecturer - Univ. of Pittsburgh - Medical School Course - "*Health Insurance and Healthcare Systems*"
- May 3, 2018 Course Director - (BIND 2902) - Comparative Healthcare Policy. Katz Business School Executive MBA in Healthcare (May 3-July 28, 2018)
- May 17, 2018 Guest Lecturer - Univ. of Pittsburgh "Grand Rounds" for Anesthesiology at Montefiore Hospital
- May 23, 2018 Course Instructor – Palliative Care Course "*Session 8: Quality Improvement/System Change Research in Palliative Care*"

#### *University of Utah School of Medicine*

- 2002-present Course Director, Cost Effectiveness Analysis and Decision Analysis. In collaboration with the University of Utah CTSA, I teach two intensive, 2 and ½ day courses in CEA and DA at the University of Utah

#### *National Venues and Other*

- 1991 Co-Director, Markov Models and the Alternatives (full day pre-course), annual meeting of the Society for Medical Decision Making.
- 1991–1998 Instructor, Introduction to Decision Analysis (conference pre-course), annual meeting of the Society of General Internal Medicine.
- 1992–2002 Instructor (1992–2002) and Course Director (1999–2002), Advanced Decision Analysis/Markov Decision Modeling (advanced pre-course), annual meeting of the Society for Medical Decision Making.
- 1993 Instructor, Introduction to Decision Analysis (conference pre-course), annual regional meeting of the American College of Physicians.
- 1993–1995 Instructor, Advanced Decision Analysis (conference workshop), annual meeting of the Society of General Internal Medicine.

- 1996–present Course Director, Introduction to Decision Analysis, annual national meeting of the International Society for Pharmacoeconomics and Outcomes Research.
- 2003–present Instructor, Markov Decision Processes: Analytic Methods for Sequential Decisions (pre-course), annual meeting of the Society for Medical Decision Making.
- 2010-present Decision Analysis and Simulation Modeling in Health Care Improvement. Intermountain Healthcare Advanced Training Program in Health Care Improvement, Salt Lake City, Utah, (twice a year)
- Sept 14, 2011 Guest Lecturer, ChiLDREN Network Steering Committee, University of Michigan – Disease Modeling and Endpoints for Clinical Studies
- Oct 6, 2011 Guest Lecturer, Fred Hutchison Cancer Research Center (FHCR), Seattle WA – The Use of Mechanistic Modeling and Simulation in HIV Policy
- Oct 7, 2011 Guest Lecturer, University of Washington, Department of Health Services Administration – Virtual Clinical Trials: Gaining Biological Insights Through Mathematical Models
- Oct 9, 2011 Decision Analysis and Simulation Modeling in Health Care Improvement. Intermountain Healthcare Advanced Training Program in Health Care Improvement, Salt Lake City, Utah
- Oct 22-28, 2011 Instructor, Markov Decision Processes: Analytic Methods for Sequential Decisions (pre-course), annual meeting of the Society for Medical Decision Making, Chicago IL
- Jan 17, 2012 Geisinger Medical Center – Activating Patients in Their Own Care and Personalizing Health Care
- Jan 30-31, 2012 Interactive Panel Discussion, Center for Applied Value Analysis at the 3<sup>rd</sup> Annual Health Outcomes and Pharmacoeconomics Research Conference – “Preparing for the Impact of Comparative Effectiveness Research on Med Device Companies”, Philadelphia PA
- March 27, 2012 Decision Analysis and Simulation Modeling in Health Care Improvement. Intermountain Healthcare Advanced Training Program in Health Care Improvement, Salt Lake City, Utah
- May 10, 2012 SGIM/SMDM Joint Abstract Presentation, SGIM Annual Meeting, Orlando FL
- June 2, 2012 Course Instructor, ISPOR 17<sup>th</sup> Annual International Meeting, “Introduction to Modeling” and “Modeling: Design and Structure of a Model”, Washington DC
- July 30, 2012 Plenary speaker – Healthcare Management - MOPTA 2012 (Modeling Optimization Conference: Theory and Applications), Bethlehem, PA
- Oct 17, 2012 INFORMS-SMDM lecture – “Decision Analytic and Patient-Centered Modeling in Medicine” – Phoenix, AZ
- April 2, 2013 Guest speaker – Columbia University – “Discrete event simulations – Archimedes-type Models”, New York City, NY
- (2013-2016 Not recorded)
- April 19, 2017 Guest Speaker - DASH National Meeting, Denver, CO - “Using big data analytics in public health to identify needs and target limited resources at the neighborhood level”
- May 19, 2017 Guest Lecturer - ISPOR National Meeting, Boston, MA -
- Mar 19, 2018 Course Instructor – Winter ATP, Salt Lake, Utah - Decision Analysis” Workshops
- April 3, 2018 Guest Speaker - MIDAS Network Meeting, Bethesda, MD - “FRED Web: A Declarative Interface to an Agent-based Modeling Tool”
- April 9, 2018 Guest Lecturer - ISPOR National Meeting, Chicago, IL
- May 1, 2018 Guest Speaker - Texas Pediatric Society, The Texas chapter of the AAP, Texas State Capitol – Immunization Education Presentation – “FRED Measles and negative effects of diminishing herd immunity”
- May 19, 2018 Guest Lecturer – ISPOR National Meeting, Baltimore, MD – “Introduction to Modeling Methods” and “Modeling: Design and Structure of a Model”

#### *International Venues*

- March 2000 Course Director and Instructor, Medical Decision Analysis (intensive two-day seminar conducted for the Hospital Authority of Hong Kong), Hong Kong, PRC.
- April 2001 Instructor, Cost-Effectiveness (seminar presented for the Infectious Disease Society of France), Lille, France.
- June, 2004 Advanced Decision Analysis. European Society for Medical Decision Making. Rotterdam, The Netherlands
- June, 2008 Course co-director: Introduction to Cost Effectiveness. Post graduate course at the University of Lausanne School of Medicine, Lausanne, Switzerland.
- Nov 5, 2011 Course instructor, ISPOR 14<sup>th</sup> Annual European Congress, “Pharmacoeconomic Modeling – Applications”, Madrid, Spain
- Dec 1, 2011 Guest Lecturer, Duke University, Graduate Medical School, “The Application of Decision Modeling Methodologies to Projects Related to Long Term Care for the Elderly”, Singapore

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Aug 10, 2012	Guest Lecturer, Asia-Pacific Economic Cooperation (APEC) – “Basic Principles of Cost Effectiveness in Healthcare Services”, Taipei, Taiwan
Sept 2, 2012	Course Instructor, ISPOR 5 <sup>th</sup> Asia-Pacific Conference, “Applied Modeling”, Taipei, Taiwan
Sept 30, 2012	Course Instructor, SMDM Singapore International Public Health Conference “Modeling Methods for Health Care Decisions: An Introductory Course”, Singapore
Nov 3, 2012	Course Instructor, ISPOR 15 <sup>th</sup> Annual European Congress, “Pharmacoeconomic Modeling: Applications”, Berlin, Germany
April 9-12, 2013	Guest Lecturer, Duke University, Graduate Medical School, “Building Models to Inform Aging Policy: Getting it Right”, Singapore
Nov 2, 2013	Course Instructor, ISPOR 16 <sup>th</sup> Annual European Congress, “Pharmacoeconomic Modeling – Applications”, Dublin, Ireland
2014-present	Course Instructor, ISPOR 19 <sup>th</sup> Annual International Meeting, “Introduction to Modeling Methods”, Montreal, Canada
May 21, 2016	Course Instructor, ISPOR 21 <sup>st</sup> Annual International Meeting, “Pharmacoeconomic Modeling Applications”, Washington DC, USA
Sep 3, 2016	Course Instructor, ISPOR 7 <sup>th</sup> Asia-Pacific Conference, “Modeling: Design and Structure of a Model”, Singapore
Oct 29, 2016	Course Instructor, ISPOR 19 <sup>th</sup> European Conference, “Development of Conceptual Models” and “Pharmacoeconomic Modeling”, Vienna, Austria
Nov. 2, 2017	Course Instructor, ISPOR 20 <sup>th</sup> Annual European Conference, Glasgow, Scotland “ <i>Pharmacoeconomic Modeling – Applications</i> ”
Mar. 3, 2018	Course Instructor – HADM PHDL 2018 India Workshops and Symposium Speaker– Day 1 & 2 – Public Health Dynamics Workshop ( <i>PHDL Overview and Agent-based Modeling</i> ), Day 3 – Keynote Talk “ <i>Mathematical Modeling as a Tool for Improving Population Health</i> ”

### Clinical Teaching

#### *Harvard Medical School, Boston*

1986–1987	Resident Preceptor, Introduction to Clinical Medicine.
1987–1993	Preceptor, Introduction to Clinical Medicine.

#### *New England Deaconess Hospital, Boston*

1989–1990	Director, General Medicine Fellowship Training, Division of General Medicine.
1989–1993	Ward Attending Rounds, 1 month/year.
1989–1993	Faculty Preceptor, Chief Resident’s Clinic.
1990–1991	Preceptor, Senior Resident Elective in Primary Care, Emerson College Health Services.
1990–1993	Instructor and Attending, Emergency Room.

#### *UPMC Shadyside (Formerly Shadyside Hospital), Pittsburgh*

1993–1997	Ambulatory Preceptor, Shea Medical Center.
1993–1998	Director, Internal Medicine Residency Program.
1993–1998	Medicine Teaching Rounds, 3 months/year.
1993–1998	Morning Report, 5 days/week, 12 months/year.
1994–1998	Intern Report, 5 days/week, every other week.

#### *University of Pittsburgh School of Medicine, Pittsburgh*

1993–1997	Preceptor, Physical Diagnosis.
1994–2011	Internal Medicine Teaching Rounds, 1 month/year.

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**PROFESSIONAL ACTIVITIES: MENTORING AND ADVISING****Mentoring and Advising of Faculty**

- Cindy Bryce, PhD, Research Assistant Professor of Medicine, University of Pittsburgh School of Medicine. K25 Mentor (K25 DK02903), NIDDK: *Estimating End-Stage Liver Disease Prevalence and Treatment Variation* (funded, priority score 144).
- James Stahl, MD, Assistant Professor of Medicine, Harvard Medical School. K23 Consultant (K23 AI 18708-01), NIAID: *Modeling Pneumonia and the Effect of Guidelines* (approved but not funded). K08 Consultant (K08 HS011637), AHRQ: *Organ Replacement Technology Analysis Project* (funded).
- Joseph King, Jr., MD, MSc, Assistant Professor of Surgery, Yale University School of Medicine. K23 Mentor (K23 NS002169), NINDS: *The Optimal Management of Cerebral Aneurysms* (funded, priority score 133).
- Chung-Chou H. (Joyce) Chang, PhD, Research Assistant Professor of Medicine, University of Pittsburgh School of Medicine. K25 Mentor (K25 DK59928), NIDDK: *A Generalized Model for Post-transplant Survival* (funded, priority score 192).
- Brian Williams, MD, MBA, Assistant Professor of Anesthesia and Critical Care, University of Pittsburgh School of Medicine. K23 Co-Mentor (K23 AR047631), NIAMS: *Outcomes after ACL Reconstruction: Effect of Femoral Nerve Block Analgesia* (funded).
- Carol Stockman, PhD, Assistant Professor of Health Services Administration, University of Pittsburgh Graduate School of Public Health. K25 Mentor (K25 HL069880), NHLBI: *Risk and Preferences: Racial Disparities in Cardiac Care* (funded, priority score 152).
- R. Scott Braithwaite, MD, Assistant Professor of Medicine, Yale University School of Medicine. K23 Mentor (K23 AA014483), NIAAA: *Tailoring HIV Therapy for Alcohol-Using Populations* (funded, priority score 194).
- Margaret Byrne, PhD, Research Assistant Professor of Medicine, University of Miami. K07 Co-Mentor (K07 CA10181), NCI: *Resource and QOL Consequences of Lung Cancer Screening* (funded, priority score 174).
- Kenneth Smith, MD, Assistant Professor of Medicine, University of Pittsburgh School of Medicine. K23 Mentor (K23 AI056347), NIAID: *Optimal Strategies for PID Prevention and Management* (funded, priority score 161).
- Michael A. Rubin, MD, PhD, Assistant Professor of Medicine, University of Utah. (For mentoring, I received the 2003 Cross-Program Faculty Mentoring Award from the Association of Clinical Research Training Program Directors.)
- Janice Christine Zgibor, RPh, PhD, Assistant Professor of Epidemiology, Director of Evaluation, University of Pittsburgh Diabetes Institute. Mentor, American Diabetes Association Junior Faculty Award: *Predicting cardiovascular Risk in Type I diabetes*. (Funded); also Mentor, K01 DK070725-01A1 *Predicting Cardiovascular Risk in Type I Diabetes*, funded
- Andrew J. Schaefer, PhD, Assistant Professor of Industrial Engineering and Medicine, University of Pittsburgh Schools of Engineering and Medicine. K-25 Award primary mentor: K25 EB005804-01 *Patient-Oriented Decision making in Liver Transplantation: and MDP Approach* (scored, not funded)
- Bryna Harwood, MD, MSc. Assistant Professor of Obstetrics and Gynecology, University of Illinois at Chicago. Primary mentor on a K-23 award: *Contraceptive Decision-Making: Women's Preferences for IUD-related Health States*,
- Bruce Lee, MD, MBA, Assistant Professor of Medicine, University of Pittsburgh School of Medicine. Mentor on K-12 Clinical Research Scholar Award: "Computer Simulation Modeling to Characterize the Spread and Optimize the Response to Influenza".
- Smita Nayak, MD, Assistant Professor of Medicine, University of Pittsburgh School of Medicine. Mentor on K-12 Clinical Research Scholar Award: *Optimizing Screening Strategies for Identifying Postmenopausal Women at Risk for Osteoporotic Fracture*
- Matthew F. Reeves, MD, MPH, Assistant Professor of Obstetrics, Gynecology and Reproductive Sciences, University of Pittsburgh School of Medicine. Mentor on K-12 Clinical Research Scholar Award: *Modeling Contraceptive Cost-effectiveness and Service Delivery in the Developing World*
- Jagpreet Chhatwal, PhD, Assistant Professor of Health Policy and Management, University of Pittsburgh, Graduate School of Public Health. Mentor on KL2 Award - *Optimal treatment and screening strategies for hepatitis C in the era of direct-acting antivirals*. Currently Assistant Professor of Medicine at Harvard Medical School.
- Theodore You, MD, MSC, Assistant Professor of Vascular Surgery, University of Pittsburgh School of Medicine. KL2 Mentored award.
- Janel Hanmer, MD, PhD, Assistant Professor of Internal Medicine, University of Pittsburgh School of Medicine. KL2 Mentored award: *Integrating Health Utility Theory and Item-Response Theory for Individual Health Measurement*. 2011-2013.

Hawre Jalal, MD, PhD, Assistant Professor of Health Policy and Management, University of Pittsburgh Graduate School of Public Health. KL2 Mentored award: *The Impact of the Opioid Epidemic and the Efficacy of Its Mitigation Strategies*. 2017-current

### Mentoring and Advising of PhD Candidates

- Mark McClellan, MD, PhD. Health Scientist Training Thesis Committee, Harvard Medical School, PhD awarded 1992.
- Brent McHenry, MS, PhD. University of Pittsburgh School of Public Health, Dissertation: *New Estimation Approaches in Survival Analysis with Aalen's Additive Risk Model*, PhD awarded 2004.
- Oguzahn Alagoz, PhD. Department of Industrial Engineering, University of Pittsburgh, Dissertation: *The Optimal Timing of Liver Transplantation: A Markov Decision Process Approach*, PhD awarded 2004. Honorable Mention: 2005 George B. Dantzig Dissertation Award: *Optimal Policies for the Acceptance of Living- and Cadaveric-Donor Livers*
- Nan Kong, PhD, Department of Industrial Engineering, University of Pittsburgh. Dissertation: *Optimal Design of Regions for Liver Transplantation*. PhD awarded 6/2005. Honorable Mention: 2006 George B. Dantzig Dissertation Award: *Maximizing the Efficiency of the U.S. Liver Allocation System through Region Selection*
- Steven Shechter, PhD candidate. Department of Industrial Engineering, University of Pittsburgh, Dissertation: *Optimal Therapy Planning for HIV Using Markov Decision Processes*, PhD awarded 2006. Winner, 2004 Bonder Scholarship for Applied Operations Research in Health Services, INFORMS, 2004. Finalist: 2006 Decision Analysis Society (INFORMS) student paper award.
- Jennifer Kreke, PhD candidate. Department of Industrial Engineering, University of Pittsburgh, Dissertation: *Optimal Decision Making in the Management of Severe Sepsis: A Markov Decision Process Approach*. PhD expected 2007.
- Burhan Sandiki, PhD candidate. Department of Industrial Engineering, University of Pittsburgh, Dissertation Topic *Estimating the price of privacy in liver transplantation*, PhD expected 2007. Winner, 2007 Bonder Scholarship for Applied Operations Research in Health Services, INFORMS 2007
- Mehmet Demirci, PhD candidate. Department of Industrial Engineering, University of Pittsburgh, dissertation: *Designing Liver Allocation Hierarchy: Incorporating Equity and Uncertainty*, PhD awarded 2008
- Gorkem Saka, PhD candidate. Department of Industrial Engineering, University of Pittsburgh, dissertation: *Increasing and Assessing the Impact of Patient Choice in Liver Transplantation*, PhD awarded 2008
- Fiona Callahan, PhD Candidate, Department of Biostatistics, Graduate School of Public Health, University of Pittsburgh. Dissertation topic: *Classification Tree for Survival Data with Competing Risks*. PhD awarded 2009.
- Yongyun Zhao, PhD Candidate, Department of Biostatistics, Graduate School of Public Health, University of Pittsburgh, *Dissertation Topic: Summary Functions for Data in the Presence of Competing Risks*. PhD awarded 2008
- Robert Koppenhaver, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation: title to be determined; topic involves *optimal use of HIV resources in resource-poor environments*. Recipient of University of Pittsburgh CTSI pre-doctoral T-32 training award (2007-2008; 2008-2009); PhD expected 2010.
- Sepehr Nemati, MS, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. advised for two years, student changed topic and advisors.
- Osman Yalin Özaltın, MS, PhD candidate. Department of Industrial Engineering, University of Pittsburgh. Dissertation: *"Optimal Design of the Annual Influenza Vaccine"*. PhD awarded 2011
- Sakine Batun, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation: *"Can Risk Preferences Explain Liver Transplantation Decisions in Practice? An Empirical Approach"* PhD awarded 2011
- Zeynep Erkin, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation: *"Eliciting Patient Preferences and Placing Expedited Organs"* PhD awarded 2011
- Murat Kurt, MS, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation: *"Incorporating Patient Autonomy into the Timing of Prearranged Paired Kidney Exchanges"*, PhD awarded 2012
- Zeynep Gozde Icten, MS, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation *"Markov decision process models for improving equity in liver allocation"*. PhD expected 2012
- Amin Khademi, MS, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation *"Managing HIV treatment in resource-limited and dynamic environments"*, PhD awarded 2013
- Anahita Khojandi, MS, PhD. Department of Industrial Engineering, University of Pittsburgh. Dissertation: *"Optimizing Implanted Cardiac Device Follow-Up Care"* PhD awarded 2014.
- Yomei Shaw, MS, PhD Candidate, Department of Health Policy and Management, University of Pittsburgh Graduate School of Public Health. Dissertation: TBA, PhD expected, 2016

- Kai He, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation: "*Optimal Maintenance Planning in Novel Setting*" PhD awarded 2016
- Mina Kabiri, PhD. Computer Simulations in Health Policy: "*Methodology and Applications in the Management*". PhD awarded 2017
- Caroline Lobo, PhD – "*Prescription Opioid Epidemic in Pennsylvania: Lessons from Medicare and Medicaid*". PhD awarded December 2017
- Kalyani Gopala, PhD. "*Service delivery and quality of care for individuals with mental illness.*" University of Pittsburgh". PhD awarded 2017
- Praveen Kumar, PhD Candidate, expected graduation 2020

**Mentoring and Advising of Fellows** (As General Internal Medicine Fellowship Director at New England Deaconess/Harvard Medical School from 1989 to 1992 and at the University of Pittsburgh from 1997 to 2003, I have advised a large number of fellows. However, the fellows listed below are those for which I had primary mentoring responsibility.)

- Jasit Ahluwalia, MD, MPH, MS. Mentored 1990–1992. Now Sosland Family Professor and Chair, Department of Preventive Medicine and Public Health, and Professor of Internal Medicine, Family Medicine, and Pediatrics at the University of Kansas and Director of Cancer Prevention, Control, and Population Sciences, Kansas Cancer Institute, University of Kansas.
- Richard Saitz, MD, MPH. Mentored 1991–1993. Now Professor of Medicine, Boston University School of Medicine.
- Peter Friedman, MD, MPH. Mentored 1992–1993. Now Associate Professor of Medicine, Brown University School of Medicine.
- James Stahl, MD, MPH. Mentored 1998–2000. Now Assistant Professor of Medicine, Harvard Medical School. Author of *Modeling Liver Allocation: National versus Hierarchical Distribution Policies*, University of Pittsburgh Press, 2000. Best Master's Essay, Delta Omega Honor Society in Public Health, 2001.

### **Serving solely as a Member of the Master's Student Thesis Committee, Graduate School of Public Health**

- Heather Shappell, MSc. Mentored 1998–1999, University of Pittsburgh Graduate School of Public Health, Thesis: *Decision Analysis: The Effect of Early Mammography, Prophylactic Surgeries, and Chemoprevention on Individuals with Either BRCA1 or BRCA2 Mutations*. Now genetic counselor, Yale University School of Medicine
- Bruce McCauley, MD, MSc. Mentored 2001, University of Pittsburgh Graduate School of Public Health, Thesis: *Pancreas Transplantation in the United States: Economic and Policy Considerations*. Now Assistant Professor of Medicine, University of Pittsburgh School of Medicine.
- Adam Gordon, MD, MPH. Mentored 2001, University of Pittsburgh Graduate School of Public Health. Thesis: *Exploration of Alternative Treatment Settings of Alcohol Detoxification*. Now Assistant Professor of Medicine, University of Pittsburgh School of Medicine.
- Rita Washko, MD. Master's thesis committee, 2000, University of Pittsburgh Graduate School of Public Health. Thesis: *An Overview of Case Management*.
- Barry Farkas, MD. Master's thesis committee, 2000, University of Pittsburgh Graduate School of Public Health. Thesis: *The Power and Beauty of Bedside Clinical Inference: An Evidence-Based Polemic*
- Heather Hsu, MPH 2007. Master's Thesis committee 2006, University of Pittsburgh Graduate School of Public Health *Impact Of The Pneumococcal Conjugate Vaccine On Pneumococcal Meningitis In The United States, 1998-2005*
- Zhijie Ding MS, "*Cost-effectiveness analysis of a Whole Genome Sequencing test compared to the standard care among patients with hospital-acquired bacteremia*" University of Pittsburgh Graduate School of Public Health

### **Advising of Medical Students**

- Andrew Bierhals, MSIV, MPH, (2000) Diagnostic Radiology Resident, Mallinckrodt Institute of Radiology. Thesis: *Cost-Effectiveness of PET Scanning in Epilepsy Surgery*.
- Gabriel Silverman, MS3 (MD/PhD candidate in Medicine and Social and Decision Sciences) through Carnegie Mellon University, dissertation topic to be determined.
- Aditya Iyer, University of Pittsburgh School of Medicine, class of 2013. Doris Duke Scholar, 2010-2011.

### **Advising of trainees in the University of Pittsburgh's Certificate and MS program in Clinical Research**

- David Streitman, MD, US Air Force. Project: *Placebo-Controlled Double-Blind Randomized Trial of Oral Nifedipine for Maintenance Therapy of Preterm Labor*. MS awarded 2002.
- Hyagriv Simhan, MD, Assistant Professor of OB/GYN/Reproductive Sciences, Magee-Womens Hospital, Pittsburgh. Project: *Role of Cytokines and Promoter Genotype in Preterm Birth*. MS awarded 2002.
- Jawad Ahmad, MD, Assistant Professor, Center for Liver Diseases, Division of Gastroenterology, Department of Medicine, University of Pittsburgh. Certificate in Clinical Research awarded 2002.
- Tracy Prosen, MD, Faculty, University of Minnesota. Project: *Skewed X Chromosome Inactivation and Spontaneous Abortion*. MSc awarded 2002.
- Ashi Daftary, MD, Assistant Professor of OB/GYN/Reproductive Sciences, Magee-Womens Hospital, Pittsburgh. Project: *Use of the Fetal Fibronectin Assay in the Evaluation of Preterm Labor: A Cost-Effectiveness Analysis*. MS awarded 2003.
- R. Scott Braithwaite, MD, Assistant Professor of Medicine, Yale University School of Medicine. Project: *Can Computer-Aided Selection of Highly Active Antiretroviral Therapy (HAART) Extend the Duration of Treatment Success?* MSc awarded 2004.
- John Lopez, MD, Faculty, St. Peters University Hospital, New Brunswick, NJ. Project: *Parental Bereavement in Minority Populations after Pediatric Death*. MSc awarded 2004.
- Julie Hvizda, RN, Research Nurse, Department of Diagnostic Radiology, National Institutes of Health. *Multi-modality Image Guidance for Minimally Invasive Percutaneous Therapies*. MSc awarded 2004.
- Robert Larkin, MD, Assistant Professor of Medicine, Hershey Medical Center, Hershey, PA. Project: *Preeclampsia: A Disease of Placental Hypoperfusion and Oxidative Stress*. MS awarded 2004.
- Kenneth Smith, MD, Research Assistant Professor of Medicine, University of Pittsburgh. Project: *Optimal Management Strategies for Pelvic Inflammatory Disease*. MS awarded 2006.
- Timothy Canavan, MD, Fellow in Maternal-Fetal Medicine, Magee-Womens Hospital, Pittsburgh. MS Project: *Progesterone Modulation of Innate Immunity in Pregnancy*. MS awarded 2005.
- Paul Speer, MD, Fellow in Maternal-Fetal Medicine, Magee-Womens Hospital, Pittsburgh. MS awarded 2005.
- Peter Michelson, MD, Assistant Professor, Pediatric Pulmonology, Children's Hospital, Pittsburgh. MS awarded 2007.
- Kristine Campbell, MD, Pediatrics, Children's Hospital, Pittsburgh. MS Project: *Cost-effectiveness of head CT in infants with possible inflicted traumatic brain injury*. MS awarded 2006
- David Van Pelt, MD, Critical Care Medicine, University of Pittsburgh. MS awarded 2007
- David Blandino, MD, Assistant Professor of Family Medicine, University of Pittsburgh. MS Project: *Clinical Performance of Residency Graduates: a preliminary study in practice outcome oriented educational research*. MS Awarded 2007
- Brian A. Primack, MD, PhD, Assistant Vice Chancellor for Research on Health and Society; Director, Center for Research on Media, Technology and Health; Associate Professor of Medicine, Pediatrics and Clinical & Translational Science; University of Pittsburgh. MS awarded 2008.
- Anwar Dudekula, MD, University of Pittsburgh Department of Medicine "Pancreatic Surgery Trends in the United States 1998-2011" and "Trends in Parenteral nutrition in USA in patients with acute pancreatitis" Certificate in Clinical Research Awarded 2015
- Jared Chiarchiaro, MD, Assistant Professor, Department of Medicine, Division of Pulmonary, Allergy, and Critical Care Medicine, "Design and Pilot Testing of an Online Advanced Care Planning Tool for Advanced Lung Disease" MS awarded Fall 2015.
- Gerald Montano, MD, School of Medicine, Department of Pediatrics, Division of Adolescent Medicine, "Differential Perceptions of Parental Monitoring and Their Associated Health Indicators Between Sexual and Non-sexual Minority Girls" and "Parental Monitoring Over Time: Trajectory and Patterns and Associated Health Indicators" MS awarded Spring 2016.
- Kimberly Liang, MD, School of Medicine, Division of Rheumatology and Clinical Immunology, "Does Sildenafil Improve Endothelial Dysfunction in Rheumatoid Arthritis?" MS awarded Spring 2016.

Thomas Radomski, MD, School of Medicine, Department of Medicine, Division of General Internal Medicine, "A Novel Approach to Characterize Dual Health System Use: Latent Class Analysis of VA and Medicare Utilization Among Dually-enrolled Veterans with Type 2 Diabetes" and "Variation in Formulary Management Practices within the VA Healthcare System" MS awarded Spring 2016.

Traci Kazmerski, MD, School of Medicine, Department of Pediatrics, "Provider and Patient Attitudes Regarding Sexual Health in Females with Cystic Fibrosis" and "Provider Attitudes and Practices Toward Sexual and Reproductive Health Care for Young Women With Cystic Fibrosis" MS awarded Spring 2016.

Chandra Umpanathi, MD, School of Medicine "Natural History After Acute Necrotizing Pancreatitis..." and "Venous Thromboembolism in Acute Pancreatitis..." MS awarded Fall 2016.

Ian Barbash, MD, School of Medicine **(Titles unknown)** MS awarded Spring 2017.

Jason Wagner, MD, School of Medicine "Cost Comparisons of Hemodialysis Access Modalities Among Patients Starting Hemodialysis with Tunneled Dialysis Catheters" and "Current Experience and Mid-Term Follow-up of Immediate Access Arteriovenous Grafts." MS awarded Spring 2017.

Kunal Mehta, MD, School of Medicine "VATS and open thymectomy for early-stage thymoma: a propensity score-matched comparison of long-term outcomes." and "The Prognostic Impact of Perineural Invasion in Esophageal Adenocarcinoma." MS awarded Spring 2017.

Natasha Parekh, MD, School of Medicine "Cervical Cancer Screening Guidelines Adherence Before and After Guideline Changes in Pennsylvania Medicaid," and "Perinatal Care Disparities in a Large Medicaid Program, 2012-2015." MS awarded Spring 2017.

Daniel Kievlan, MD, School of Medicine. "External validation of a prehospital risk score for critical illness", "Evaluation of repeated qSOFA measurements among patients with suspected infection". MS awarded 2017

Jared Garfield MPH – "Optimization of electronic screening in clinical research practice." Master Essay, University of Pittsburgh – March 23, 2017

#### **Advising/Doctoral committee participation of PhD Students in the University of Pittsburgh's PhD in Clinical and Translation Science**

Brian Primack, MD, MS. Assistant Vice Chancellor for Research on Health and Society; Director, Center for Research on Media, Technology and Health; Associate Professor of Medicine, Pediatrics and Clinical & Translational Science; University of Pittsburgh (2011)

Gijsberta (Josie) Van London, MD, MS, Assistant Professor of medicine, University of Pittsburgh, dissertation TBA, PhD (2012)

Alvaro Sanchez-Ortiz, MD, MS. Post-doctoral fellow, department of Trauma Surgery, University of Pittsburgh. Dissertation TBA, PhD (2012)

Hussain Tawbi, MD, MS, Assistant Professor of Medicine (Oncology) University of Pittsburgh. Dissertation TBA, PhD (2011)

Ahmad Tarhini MD, MS, Assistant Professor of Medicine (Oncology) University of Pittsburgh. Dissertation TBA, PhD (2011)

#### **Academic Advising (Students)**

<b>Student Name</b>	<b>Department</b>	<b>Academic Year</b>
Arina Agofonova	Health Policy and Management	2010-2011, 2011-2012
Adam Conway	Health Policy and Management	2010-2011, 2011-2012
Yongxu Huang	Health Policy and Management	2010-2011, 2011-2012
Lauren McKown	Health Policy and Management	2010-2011, 2011-2012
Alyia Smith-Parker	Health Policy and Management	2010-2011, 2011-2012
Sonia Easaw	Health Policy and Management	2010-2011



Terence Chen	Health Policy and Management – MPH	2011-2012
Shawn Kapoor	Health Policy and Management – MHA	2011-2012
Guangyu Luo	Health Policy and Management – MPH	2011-2012
Anupama Sharma	Health Policy and Management – MHA	2011-2012

### OTHER PROFESSIONAL ACTIVITIES

January 12-13, 2012	External Reviewer, University of Toronto, Department of Health Policy, Management and Evaluation
April 4, 2012	Panelist, GSPH National Public Health Week, Discussion on the Affordable Care Act/Individual Mandate
April 2012	Member, Clinical and Translational Science Institute (CTSI) External Advisory Board
April 2012	Faculty Judge, 2012 Dean's Day Student Research Competition, University of Pittsburgh, Graduate School of Public Health
August 23, 2013	Panelist, DMBI – Informatics Challenges to Personalized Medicine, University of Pittsburgh – <i>Translation of Basic Research to Health Systems</i>
Nov 14-15, 2013	Co-Chair, Healthcare Leadership Forum: Evidence-Based Medicine at the Center of Care, Chicago, IL
April 14, 2015	Judge, Jewish Healthcare Foundation, QI <sup>2</sup> T Health Innovators Fellowship "Pitch Competition"

### PROFESSIONAL ACTIVITIES: RESEARCH

#### Currently Funded Research Grants

Agency: Commonwealth of PA      PI: Burke, D.  
 Grant #: 4-400018535      Role: Co-Investigator  
 Dates: 7/1/2018-6/30/2020      % Effort: 5% (0.6 CM)      direct costs: \$800,000  
 Title: The Pennsylvania Opioid Dashboard 2.0

This contract conducts research on the opioid epidemic to create measures on the Commonwealth of Pennsylvania's Opioid Dashboard that estimate the impact of the epidemic on children and families, the economy, the criminal justice system and predict overall health impacts.

Agency: CDC      PI: Burke, D.  
 Grant #: RFP: 75D301-18-R-67887      Role: Co-Investigator  
 Dates: 9/21/2018 – 9/20/2010      % Effort: 20% (2.4 CM)      direct costs: \$1,236,484  
 Title: Advancing Analytics to Improve Actionable Changes in the Opioid Overdose Epidemic

This CDC contract will develop mechanistic models of the opioid epidemic, incorporate them into FRED (Framework for Replicating Epidemiologic Dynamics) and develop front end tools for policy makers to understand the impact of mitigation strategies on the epidemic.

Agency: DOD PI: Binion  
 Grant #: W81XWH-17-1-0556 Role: Co-Investigator  
 Dates: 9/1/2017-8/31/2020 % Effort: 5% (0.6 CM) direct costs:  
 Title: Utilizing clinical metadata to predict high cost complications and treatment response in IBD

Using observational data in the UPMC HER, the grant will develop algorithms to predict patients who will be high utilizers of medical services

Agency: Robert Wood Johnson PI: Hanmer  
 Grant #: 74695 Role: Co-Investigator  
 Dates: 8/15/2017-6/14/2020 % Effort: 4% (0.48 CM) direct costs:  
 Title: Launching the PROMIS-Preference (PROPr) score to measure population health outcomes with a single instrument

This proposal will incorporate a subset of the PROMIS patient reported outcomes into the HER at UPMC, and using a previously developed algorithm, convert those scores into utilities.

Agency: NIAID PI: Harrison  
 Grant #: NIH-R01A11274472 Role: Co-Investigator  
 Dates: 9/26/2016-8/31/2021 % Effort: 5% (donated) direct costs: \$297,370  
 Title: Enhanced Detection System for Healthcare-Associated Transmission of Infection

Genetic analysis of hospital-based infections to determine whether in-hospital transmission can be detected early. We will construct cost and budget impact analyses of employing this test to reduce infections

Agency: NIGMS PI: Reis  
 Grant #: NIH-5UL1TR000005 Role: Co-Investigator  
 Dates: 7/12/2016-5/31/2021 % Effort: 10% (0.6 CM) direct costs:  
 Title: University of Pittsburgh Clinical and Translational Science Institute

Institutional training and research grant to enhance multidisciplinary research at the University.

Agency: NIH PI: BURKE  
 Grant #: U01- DK072146 Role: Co-Investigator  
 Dates: 9/24/2014-6/30/2019 % Effort: 5% (0.6 CM) direct costs:  
 Title: Computational Models of Infectious Disease Threats (MIDAS)

This grant funds a center of excellence in the use of computational modeling to understand infectious disease threats and estimate the effects of various mitigation strategies.

Agency: NIH PI: Jiang  
 Grant #: P38 Role: Sub-account PI  
 Dates: 5/1/2014-4/30/2019 % Effort: 8% direct costs: \$96,175  
 Title: A New Generation Decision Support System

The objective of this research is to develop a novel decision support system that utilizes both the clinical features and the genomic profile of a breast cancer patient to assist the physician in integrating information about a specific patient (diagnostic subtype, tumor stage and grade, age, comorbidities, patient preferences) to make therapeutic plans for the patient.

### Pending Research Grants

None as PI at this time

### Grant Funding History

Agency: Astellas Pharmaceutical PI: Nguyen  
 Grant #: PROG-15A01 Role: Co-Investigator  
 Dates: 1/12/2016-1/11/2018 % Effort: 10% (1.2 CM) direct costs: \$13,180

Title: Financial burden of Cytomegalovirus mismatch (CMV Donor+/Recipient-) in lung transplant recipients (LTR)

This grant is evaluating different strategies for CMV prophylaxis in transplant patients with CMV mismatch, and we will conduct a cost-effectiveness analysis of the different strategies.

Agency: Robert Wood Johnson Foundation PI: Hacker, K.

Grant #: 73352 Role: Co-Investigator

Dates: 2016-2017 % Effort: 5% (0.6 CM) direct costs:

Title: Data Across Sectors for Health: Empowering Communities Through Shared Data and Information

Using data collected under the DASH (Data Across Sectors for Health) program, the Allegheny County Health Department collected data on cardiovascular risk factors and social determinants of health by census tract. We used the Framework for Reproducing Epidemiological Dynamics (FRED) to make geospatially detailed estimates of the distribution of excess cardiovascular mortality in Allegheny County, and the relationship between that risk and social determinants of health.

Agency: NIH/NIAAA PI: Braithwaite

Grant #: 1 U24AA022007-01 Role: Sub-contract PI

Dates: 9/15/2012-8/31/2017 % Effort: 8.5% (1.03 CM) direct costs: \$124,979

Title: The Operations Research Collaboration for Alcohol Abuse and Aid - ORCAAA

This application proposes to develop an *Implementation Science Resource Core* to support the research of CHAART consortia (Collaborative Centers for HIV/AIDS and Alcohol Outcomes Research), building upon their existing infrastructure. Our proposal will substantially enhance consortia directions and goals, and accelerate the ongoing and future investigations by giving CHAART consortia and other HIV/alcohol researchers access to resources, information, ideas, and expertise in implementation science that are otherwise beyond the scope of any single research team.

Agency: NIDDK PI: Squires

Grant #: U01- DK072146 Role: Co-Investigator

Dates: 10/1/2010-9/30/2015 % Effort: 10% (1.2 CM) direct costs: \$5,142

Title: A Multi-Center Group to Study Acute Liver Failure in Children

Our goal is to improve short- and long-term outcomes for pediatric acute liver failure (PALF) through a better understanding of patient phenotypes, reassessment of risk classifications, and associating early events to outcome at one year

Agency: NIH PI: Puyana

Grant #: D43 TW008443 Role: Co-Investigator

Dates: 9/2009-6/2014 % Effort: 5% (.6 CM) direct costs: \$58,044

Title: Enhancing Research and Informatics Capacity for Health Information in Colombia (ENRICH)

Establish an international collaboration between the University Pittsburgh and the Javeriana University in Bogota with the goal of building the capacity of individuals in the field of health informatics with an emphasis on clinical research

Agency: NIH/NIAMS PI: Kwoh

Multidisciplinary Clinical Research Centers (P60)

Grant #: RFA-AR-12-001 Role: Advisor

Dates: 4/1/12-3/31/17 % Effort: N/A direct costs: N/A

Title: PITT-MCRC for Rheumatic and Musculoskeletal Diseases

The PITT-MCRC will support the mission of NIH/NIAMS by conducting and supporting research training on the causes, treatment, and prevention of arthritis, musculoskeletal and skin diseases that affect the health of millions of people. The goal of this research is to prevent diseases and improve patient outcomes

Agency: NSF PI: Maillart

Grant #: CMMI-1100421 (Maillart) Role: Co-Investigator

Dates: 9/1/2011-8/31/2014 % Effort: 2% (.24 CM) direct costs: \$74,666 ~ project \$7,014 (Mark)

Title: Optimizing Implanted Cardiac Device Follow Up Care

This application will develop optimization models of the appropriate follow-up and testing of pacemakers and defibrillators to maximize patient oriented outcomes and minimize costs of follow-up.

Agency: NSF PI: Schaefer  
 Grant #: CMMI-1100082 Role: Co-Investigator  
 Dates: 5/1/2011-4/30/2014 % Effort: 3% (.36 CM) direct costs: \$4,208 (Roberts' sub)

Title: Collaborative Research: The Optimal Timing of Kidney Exchanges: A Markov Game Approach

This project will use sophisticated mathematical models to improve decisions made between patients on dialysis and those approaching dialysis to simultaneously share organs

Agency: NIH PI: Cram  
 Grant #: R01-AG033035-01A1 Role: Co-Investigator  
 Dates: 7/01/09-6/30/14 % Effort: variable (2-5%) direct costs:  
 Title: A Patient Activation Intervention to Enhance Bone Health in Older Adults

This project will expand an existing simulation model of osteoporosis screening and treatment to include screening of men and patients with multiple other comorbidities.

Agency: NICHD PI: Harwood  
 Grant #: K23 HS HD053770-01 Role: Co-Mentor  
 Dates: 9/1/08-8/1/13 % Effort: N/A direct costs: N/A  
 Title: Contraceptive Decision-Making: Women's Preferences for IUD-related Health States

The purpose of this research is to investigate the various factors that affect contraceptive decision making in women, using the IUD as an example. The IUD has characteristics that are consistent with what women state they seek in a contraceptive, yet it is not used. This discrepancy may result from not taking into account all components of the decision that women use in seeking contraceptive technology.

Agency: NHLBI PI: Bae  
 Grant #: 1R01HL095115 Role: Co-Investigator  
 Dates: 9/26/2008-7/31/2013 % Effort: 15% direct costs: \$46,881  
 Title: Identifying CT Imaging Biomarkers Associated with Prognosis of Pulmonary Embolism

The goal of this project is to determine the clinical usefulness of CT-derived quantitative measures of clot burden and location to improve prognostic prediction in pulmonary embolism.

Agency: NIH-AAA PI: Braithwaite  
 Grant #: R01AA017385-01 Role: Co-Investigator  
 Dates: 09/30/2007 – 08/31/2012 % Effort: 5% direct costs: \$188,549  
 Title: A computer simulation of the Sub-Saharan HIV pandemic that can estimate benefit and value from alcohol interventions

This work will modify an existing physiological model of HIV and its complications to predict the effect in resource-poor settings of the effect of interventions to reduce alcohol use. Effects on the efficacy of antiretroviral medication by adherence and the effect on the epidemic will be modeled.

Agency: AHRQ PI: Roberts  
 Grant #: R18-HS018167 Role: Principal Investigator  
 Dates: 10/01/09 – 7/31/13 % Effort: 20% direct costs: \$1,177,459  
 Title: Self-Management & Reminders with Technology: SMART Appraisal of an Integrated PHR

This project will develop an interactive personal health record that will provide patients the ability to interact with an active decision support system fully integrated into their electronic health record.

Agency: NIH PI: Nayak  
 Grant #: R01-AR060809 Role: Co-Investigator  
 Dates: 4/1/2011-3/31/2014 % Effort: 5% Direct costs: \$120,633  
 Title: Comparative effectiveness and cost-effectiveness of osteoporosis screening strategies for older adults

This project will expand an existing simulation model of osteoporosis screening and treatment to include screening of men and patients with multiple other comorbidities.

Agency: NIH-NIAAA PI: Justice (Yale) subcontract to Conigliaro (Pittsburgh)  
 Grant #: 7U01 AA013566-06 Role: Co-Investigator  
 Dates: 9/1/06 – 8/31/11 % Effort: 5% direct costs:  
 Title: Alcohol Associated Outcomes Among HIV+/- Aging Veterans

This is a multi-centered longitudinal study examining the impact of alcohol use on HIV infection. The long-term goal of this project is to design and implement interventions to improve outcomes of patients aging with HIV infection complicated by major, common, and often overlapping comorbid conditions.

Agency: NIH PI: Barnato  
 Grant #: R01 AG035112 Role: Co-Investigator  
 Dates: 07/01/09 - 06/30/12 % Effort: 5% direct costs: \$6,465  
 Title: Developing a Robust Measure of Hospital End of Life Intensity

The goal of this project is to extend the previously developed high probability of dying (HPD) measure to further elucidate the causes and consequences of race- and condition-specific variations in decision making near the end of life by studying the contribution individual hospital behavior to these patterns.

Agency: NSF-CMMI PI: Schaefer  
 Grant #: 0826141 Role: Co-Investigator  
 Dates: 07/01/08 – 06/30/11 % Effort: 3.0% direct costs: \$15,490  
 Title: Optimizing Flu Shot Design Under Uncertainty

This project will use mathematical optimization methods from industrial engineering to evaluate the timing and strain selection decision for influenza vaccines.

Agency: VA PI: Schaefer  
 Grant #: Role: Co-Investigator  
 Dates: 7/1/09 to 9/30/2011 % Effort: 2% yr 1, 8% yr 2-3 direct costs: \$67,265  
 Title: VA Pittsburgh Healthcare System Veterans Engineering Resource Center (VERC)

This project will use methods from OR and Management Science to improve workflow and efficiency in the Pittsburgh Veteran's Health Care System.

Agency: NIDDK PI: **Roberts**  
 Grant #: R21-DK084201-01 Role: Principal Investigator  
 Dates: 7/1/09 to 6/30/11 % Effort: 15% direct costs: \$274,000  
 Title: The optimal timing of transplantation in pediatric acute liver failure

This project will develop natural history models of pediatric acute liver failure (PALF) and calibrate a simulation model of organ allocation and transplantation to optimize the use of transplantation in PALF.

Agency: NIAID PI: Smith  
 Grant #: R01 AI076256-01A1 Role: Co-Investigator  
 Dates: 10/1/07 – 9/30/11 % Effort: 5.0% direct costs: \$9,336  
 Title: Alternative strategies for adult Pneumococcal vaccination

The aims of this project are to 1) forecast changes in adult pneumococcal serotype epidemiology resulting from childhood PCV using an infectious disease transmission dynamic model and 2) calculate the effectiveness and cost-effectiveness of alternative adult pneumococcal vaccination strategies incorporating forecasted PCV epidemiologic effects.

Agency: NCHSR/HCTA PI: **Roberts** (Individual NRSA)  
 Grant #: F32-HS00015 Role: Principal Investigator  
 Dates: 7/1/87–6/30/89 % Effort: 100% direct costs: \$52,008  
 Title: *An Analysis of the Optimal Timing of Liver Transplantation in End-stage Liver Disease*

This was an individual NRSA to fund fellowship activities and develop Markov models of end-stage liver disease.

Agency: Natl Fund for Medical Education PI: Marton  
 Grant #: N/A Role: Investigator

Dates: 1987–1990 % Effort: 10% (donated) direct costs: N/A

Title: *Modifying Physician Use of Diagnostic X-Ray Imaging*

I assumed day-to-day responsibility for grant administration and execution after Dr. Marton left the institution.

Agency: AHCPR

PI: **Roberts**

Grant #: R01-HS/DK 06728-01:

Role: Principal Investigator

Dates: 5/1/91–4/30/92

% Effort: 30%

direct costs: \$63,294

Title: *Methodologic Research in Simulating Complex Disease*

This was a methodology development grant to understand and implement Monte Carlo evaluation of large Markov processes in the context of the modeling of end-stage liver disease. No-cost extension to 04/30/93.

Agency: Ohmeda PPD

PI: Angus

Grant #: N/A

Role: Investigator

Dates: 1996–1997

% Effort: 10%

direct costs: N/A

Title: *Pharmacoeconomic Development of Inhaled NO in the Treatment of Respiratory Distress Syndrome of the Newborn*

This study developed cost-effectiveness models of the use of inhaled NO in children with respiratory distress.

Agency: HRSA

PI: **Roberts**

Grant #: 1-D28-PE-1024-01

Role: Program Director

Dates: 7/1/97–6/30/00

% Effort: 30%

direct costs: \$783,000

Title: *General Internal Medicine Residency Training Grant*

This was a primary care training grant to improve ambulatory care training of community-based residency programs. I resigned as Program Director in 7/98 and therefore relinquished PI/Program Director status on the grant as of 7/98.

Agency: HRSA

PI: **Roberts**

Grant #: D28-PE-50030-04

Role: Program Director

Dates: 7/1/97–6/30/00

% Effort: 20%

direct costs: \$551,000

Title: *Faculty Development Training Grant*

This was a general medicine fellowship training grant.

Agency: AHRQ

Grant #: 1R25-HS09784-01

PI: **Roberts**

Dates: 5/1/98–4/31/01

Role: Principal Investigator

Title: *Training Program in Clinical*

% Effort: 10%

direct costs: \$240,943

*Effectiveness/Evaluation Sciences*

This grant was designed to develop an integrated program in health services research for fellows and faculty members across all departments of the School of Medicine.

Agency: AHCPR

PI: **Roberts**

Grant #: R01-HS09694-01

Role: Principal Investigator

Dates: 9/30/97–8/29/00

% Effort: 30%

direct costs: \$813,734

Title: *The Optimal Timing of Liver Transplantation*

This project was designed to develop a complex mathematical model of end-stage liver disease to estimate the impact of timing and allocation rules on overall survival, costs, and quality of life in liver transplantation.

Agency: Jewish Health Care Foundation

PI: Kapoor

Grant #: N/A

Role: Co-Investigator

Dates: 1999–2000

% Effort: 10%

direct costs: \$150,000

Title: *Collaborative Quality Improvement of Pharmaceutical Care and Medication Discharge Counseling*

This project designed, implemented, and tested a multidisciplinary intervention in medication education and structured medication-related consults to improve patient understanding of medications and compliance.

Agency: NIH-NINDS PI: King  
 Grant #: NST K23-NS02169 Role: Co-Mentor (PI is now at Yale)  
 Dates: 2000–2005 % Effort: 5% (donated) direct costs: N/A  
 Title: *The Optimal Management of Cerebral Aneurysms*

The specific aims of this proposal are (1) to construct a computer simulation decision analytic model to examine optimal neurosurgical decision-making in patients with cerebral aneurysms and (2) to use the computer simulation model to perform a cost-effectiveness analysis to optimize societal resource allocation during the management of patients with aneurysms.

Agency: Jewish Health Care Foundation PI: Piraino  
 Grant #: N/A Role: Co-Investigator  
 Dates: 1/1/01–12/31/02 % Effort: 10% direct costs: N/A  
 Title: *Continuous Process Improvement in Quality of Clinical Care in an Academic Department of Medicine*

The goal of this proposal was to develop a culture of continuous process improvement in a major academic department of medicine.

Agency: Pfizer PI: Smith  
 Grant #: N/A Role: Co-Investigator  
 Dates: 2000–2002 % Effort: 5% direct costs: N/A  
 Title: *Quality of Life Utility Values for Erectile Dysfunction*

The purpose of this study was to measure actual utilities for men with and without erectile dysfunction.

Agency: NLM PI: Friedman  
 Grant #: 3 T15 LM07059-14S1 Role: Investigator  
 Dates: 7/1/00–6/30/02 % Effort: 5% direct costs: N/A  
 Title: *Pittsburgh Medical Informatics Training Program*

The proposal was for a training grant to plan and implement a concentration combining informatics and health services research.

Agency: DARPA PI: Wagner  
 Grant #: F30602-01-2-0550 Role: Co-Investigator  
 Dates: 8/13/01–2/12/02 % Effort: 5% direct costs: N/A  
 Title: *Scalable Bio-Surveillance Systems*

This project was designed to develop a prototype bioterrorism detection system based on real-time computer analysis of routinely collected medical and nonmedical data. Our subcomponent was in charge of building a cost-effectiveness model of different detection and response strategies.

Agency: NIH-NHLBI PI: Angus  
 Grant #: 1R01 HS11620-01 Role: Investigator  
 Dates: 9/30/01– 8/31/05 % Effort: 4.5% direct costs: \$70,982 (sub)  
 Title: *Economic Analysis of Pulmonary Artery Catheter Use*

This multicenter, randomized controlled trial will compare simultaneously the clinical outcomes associated with specific protocols for use of pulmonary artery catheters vs central venous catheters.

Agency: HRSA PI: Hoberman  
 Grant #: D14 HP 00198-01 Role: Co-PI (2002–2003), Investigator (2003–2005)  
 Dates: 7/1/02–6/30/05 % Effort: 12.5% direct costs: N/A  
 Title: *Faculty Development in General Pediatrics/Internal Medicine*

The proposal was designed to fund a combined Medicine/Pediatrics and Medicine/Pediatrics Fellowship Program devoted to developing academicians with research, teaching, and educational interests in underserved care.

Agency: NSF PI: Schaefer  
 Grant #: DMI-0223084 Role: Co-Principal Investigator  
 Dates: 9/1/02–2/28/04 % Effort: 2.5% direct costs: \$7,253 (sub)  
 Title: *Collaborative Research: Modeling Patients' Perspectives on Organ Acceptance*





Agency: NIH-NINR PI: Erlen  
 Grant #: R01NR004749 Role: Data Safety Monitoring Board Member  
 Dates: 1999–2007 % Effort: N/A  
 Title: *Improving Adherence to Antiretroviral Therapy*  
 Member of data safety monitoring board of an ongoing trial of antiretroviral medication compliance

Agency: American Diabetes Association PI: Zgibor  
 Grant #: N/A (Career development) Role: Mentor  
 Dates: 7/1/04–6/30/07 % Effort: 5% (donated) direct costs: N/A  
 Title: *Predicting Cardiovascular Risk in Type 1 Diabetics*  
 The major goal of this project is to develop risk prediction equations for patients with type 1 diabetes and to model the subsequent effect of risk factor interventions.

Agency: NIH-NIDA PI: Kraemer  
 Grant #: R21-DA018139 Role: Co-Investigator  
 Dates: 9/15/04-8/31/06 % Effort: 5% direct costs: N/A  
 Title: *Societal and Patient Utilities for Drug Problems*  
 The main goals of this proposal are to establish utility ratings for a spectrum of drug-related health states, to determine how utility ratings differ between those with and without drug problems, and to determine optimal utility measurement methods.

Agency: NIH-NHLBI PI: Kapoor  
 Grant #: K30 RR022294 Role: Co-Principal Investigator  
**SEE NOW: 1 UL1 RR 024153**  
 Dates: 9/15/00-5/31/10 % Effort: 20% (varied by year) direct costs: N/A  
 Title: *Design of a New Clinical Research Training Program*  
 The aim of this project is to develop a multidisciplinary clinical research training program designed to provide clinician-researchers with the skills necessary to effectively design and conduct clinical research, with the ultimate goal of providing researchers with the ability to effectively compete for research funds.

Agency: NIH-NIDDK PI: Bryce  
 Grant #: K25 DK02903 Role: Mentor  
 Dates: 9/15/00-8/31/06 % Effort: 5% (donated) direct costs: N/A  
 Title: *Estimating ESLD Prevalence and Treatment Variance*  
 This project will evaluate the role of gender, race, and income in determining access to liver transplantation and explaining variation in liver transplant rates.

Agency: NIMH PI: Reynolds  
 Grant #: 1P30 MH07 1944-01 Role: Co-Investigator  
 Dates: 6/1/05-5/31/06 % Effort: 5% (3 months) direct costs: \$34,572 (sub)  
 Title: *Advanced Center in Interventions and Services Research in Late-Life Mood Disorders*  
 The goal of the proposed ACIS/LLMD is to provide a research infrastructure to promote investigators that will ultimately improve real world practice in the care of elderly living with depression and other severe mood disorders.

Agency: NIH-NIDDK PI: Chang  
 Grant #: K25 DK59928 Role: Mentor  
 Dates: 9/1/01–7/31/06 % Effort: 5% (donated) direct costs: N/A  
 Title: *A Generalized Model for Post-transplant Survival*  
 The objectives of this project are (1) to develop a general survival regression model, (2) to develop a diagnostic procedure for the general survival regression model, and (3) to model the impact of transplantation on long-term survival in end-stage liver disease.

Agency: NIH-NHLBI PI: Stockman  
 Grant #: K25-HL69880 Role: Mentor  
 Dates: 4/1/02–3/31/07 % Effort: 5% (donated) direct costs: N/A

Title: *Risk and Preferences: Racial Disparities in Cardiac Care*

The purpose of this grant is to explore whether preferences for and perceptions of risk can explain some of the observed ethnicity- and gender-based treatment variation in the acceptance of invasive cardiovascular procedures.

Agency: NSF PI: Schaefer  
 Grant #: DMI-0355433 Role: Co-Investigator  
 Dates: 4/15/04-3/31/07 % Effort: 5% direct costs: \$35,554 (sub)  
 Title: *Optimizing the Regional Distribution of Organ Procurement Organizations*

The project will investigate the optimal timing of organ procurement organizations. New modeling techniques as well as state-of-the-art optimization methods will be developed for these difficult problems.

Agency: NIH-NHLBI PI: Angus  
 Grant #: R01 HL069991 Role: Co-Investigator  
 Dates: 12/15/02-11/30/07 % Effort: 5% direct costs: \$40,982 (sub)  
 Title: *Long-Term Outcomes of Nitric Oxide for Ventilated Premature Babies*

The goal of this proposal is to perform an economic analysis of the use of inhaled nitric oxide for the prevention of chronic lung disease (INOPCLD) in premature newborns with respiratory failure.

Agency: AHRQ PI: Sirio  
 Grant #: 1U18HS015851-01 Role: Co-Investigator  
 Dates: 7/1/05-6/30/07 % Effort: 5% direct costs: \$133,638 (sub)  
 Title: *Enhanced Patient Safety Interventions to Optimize Medication Education "EPITOME"*

The proposed research seeks to evaluate the hospital-wide implementation of a multi-model patient medication education system, the Enhanced Patient Safety Interventions to Optimize Medication Education (EPITOME).

Agency: St. Margaret Foundation PI: Zimmerman (Smith Subcontract)  
 Grant #: N/A Role: Co-Investigator  
 Dates: 10/15/05-10/14/06 % Effort: 5% direct costs: \$33,596 (sub)  
 Title: *Pneumococcal Polysaccharide Vaccine Decision Analysis*

The specific aim of this study is use decision analyses with sensitivity analyses; determine the number of deaths prevented, invasive cases prevented, and life years gained by various pneumococcal polysaccharide vaccination (PPV) strategies.

Agency: NCI PI: Byrne  
 Grant #: K07 CA10181 Role: Co-Mentor (the PI is now at the University of Miami)  
 Dates: 8/8/03-7/31/08 % Effort: N/A direct costs: N/A  
 Title: *Resource and QOL Consequences of Lung Cancer Screening*

This research examined the psychological and economic consequences (costs and benefits) to individuals undergoing screening for lung cancer. The information gained can be used in conjunction with clinical effects of screening to evaluate programs of lung cancer screening.

Agency: NIH-NLM PI: **Roberts**  
 Grant #: R21 LM008273 Role: Principal Investigator  
 Dates: 1/1/05-12/31/06 (nce to 07) % Effort: 15% direct costs: \$275,000  
 Title: *Using MDPs to Optimize Living-Donor Liver Transplants*

This R21 uses a complex mathematical technique called Markov decision processes (MDPs) to analyze the question of the optimal timing of living-donor liver transplantation. MDPs are analytic tools specifically designed to analyze sequential decision making under conditions of uncertainty, and although they have been applied to many management and industrial problems, they have seen little use in medicine and health care. This exploratory proposal seeks to apply these methods to a complex, clinical problem in transplantation.

Agency: DOD-Air Force PI: Chapman  
 Grant #: DAMD 17-03-2-0017 Role: Co-Investigator  
 Dates: 1/1/08 - 9/30/08 % Effort: 3.0% direct costs:

Title: Strategic Support of Telepathology Development in the Air Force

The evaluation component of this project assessed the accuracy of two new technologies for the distributed reading of pathology slides in a military environment: 1) a whole slide imaging digital pathology system and 2) pathologic diagnosis via a robotic microscope, in which the pathologist is in one location and the microscope and slides are in another.

Agency: DOD-Air Force PI: Becich  
 Grant #: DAMD 17-03-2-0017 Role: Co-Investigator  
 Dates: 1/1/08 – 9/30/08 % Effort: 2.5% direct costs: \$5,769  
 Title: Distributed Radiology Dynamic Workload Allocation System (DRDWA) Development in the Air Force  
 This project assessed the ability of a distributed multiplatform PACS system to improve workload and throughput in a military radiology environment.

Agency: NIAAA PI: Kraemer  
 Grant #: R01 AA014713 Role: Co-Principal investigator  
 Dates: 9/21/04-8/31/08 % Effort: 10% direct costs: N/A  
 Title: Patient & Societal Utilities for Alcohol Problems  
 This work measured quality of life and utility in patients with alcohol use disorders and their family members.

Agency: NIAID PI: Smith  
 Grant #: 1K23 AI056347 Role: Mentor  
 Dates: 6/1/04-2/29/08 % Effort: 5% (donated) direct costs: N/A  
 Title: *Optimal Strategies for PID Prevention and Management*  
 This project developed a simulation model of pelvic inflammatory disease. The model synthesized data from diverse sources to allow evidence-based development of optimal management strategies for women in a variety of disease risk categories.

Agency: NIAAA PI: Braithwaite  
 Grant #: 1 K23 AA14483 Role: Co-Mentor (the PI is now at Yale)  
 Dates: 8/1/03–7/31/08 % Effort: N/A direct costs: N/A  
 Title: *Tailoring HIV Therapy for Alcohol-Using Populations*  
 The grant will develop a mathematical model of the acquisition of HIV resistance in patients and use the model to evaluate the effect of various patterns of noncompliance with HAART, especially the noncompliance introduced by various alcohol use syndromes.

Agency: NINMH PI: Rollman  
 Grant #: R01 MH049395 Role: Co-Investigator  
 Dates: 12/1/03–11/30/08 % Effort: 2% direct costs: N/A  
 Title: *Improving Quality of Primary Care for Anxiety Disorders*  
 This project was an effectiveness trial to examine the 12-month clinical outcomes and patterns of health services utilization for primary care patients with panic disorder/generalized anxiety disorder (PD/GAD) randomized to either a telephone-based collaborative care intervention or to patient and primary care physician (PCP) notification of the diagnosis alone.

Agency: NIDDK PI: Zgibor  
 Grant #: K01 DK070725-01A2 Role: Mentor  
 Dates: 7/1/05–6/30/08 % Effort: N/A direct costs: N/A  
 Title: *Predicting Cardiovascular Risk in Type 1 Diabetics*  
 Similar to the ADA award, the application will investigate cardiovascular risk prediction equations from patients with Type 1 diabetes, and will validate that prediction rule in a separate, European cohort.

Agency: UPMC/Diabetes Foundation/DOD PI: Bryce  
 Grant #: W81XWH-04-2-0030 Role: Co-Investigator  
 Dates: 1/1/04 – 1/31/09 % Effort: 10% direct costs: \$50,780  
 Title: Diabetes Prevention and Treatment Program for Western Pennsylvania. Admin/Data Core

The evaluation component of this grant will develop economic models of the use of various outpatient interventions in the prevention and treatment of diabetes.

Agency: NIH-1NHLBI PI: Rollman  
 Grant #: R01 HL070000 Role: Co-Investigator  
 Dates: 12/15/02-11/30/07 % Effort: 5.0% direct costs: \$88,549

Title: Treatment of Depression Following Cardiac Bypass Surgery

This 5-year randomized clinical trial examines whether treating depression following coronary artery bypass graft (CABG) will reduce cardiovascular morbidity, depressive symptoms, and health services utilization and will improve clinical outcomes following surgery.

Agency: University of Miami PI: Byrne  
 Grant #: Role: Co-Investigator  
 Dates: 04/01/09 - 03/31/11 % Effort: % direct costs: \$11,698

Title: Development of a Conjoint Analysis Instrument for Lung Cancer Screening Decisions

The purpose of this work is to determine the attributes of lung cancer screening and the implications of screening results that affect whether individuals are interested in being screened for lung cancer and to develop a conjoint valuation instrument to evaluate these attributes. We will also investigate whether the importance of various characteristics/attributes of lung cancer screening in patient's screening decisions appears to vary by survey methodology.

Agency: NIH-NCRR PI: Reis  
 Grant #: KL2 RR024154 Role: Co-investigator  
 Dates: 9/30/06 – 6/30/11 % Effort: mentor direct costs:

Title: University of Pittsburgh Clinical and Translational Science Institute

The purpose of this KL2 is to support the early career development of clinical researchers from a variety of disciplines engaged in all types of clinical research. . Current recipients of the K12 Clinical Research Scholar Award mechanism that I mentor are:

Bruce Lee, MD, MBA, (2006-2011) Assistant Professor of Medicine, University of Pittsburgh School of Medicine. *"Computer Simulation Modeling to Characterize the Spread and Optimize the Response to Influenza"*.

Smita Nayak, MD, (2007-2012) Assistant Professor of Medicine, University of Pittsburgh School of Medicine. *"Optimizing Screening Strategies for Identifying Postmenopausal Women at Risk for Osteoporotic Fracture"*

Matthew F. Reeves, MD, MPH, (2008-2010) Assistant Professor of Obstetrics, Gynecology and Reproductive Sciences, University of Pittsburgh School of Medicine. *"Modeling Contraceptive Cost-effectiveness and Service Delivery in the Developing World"*

Jagpreet Chhatwal, PhD. (2011-2013). Now Assistant Professor of Medicine, MGH/Harvard Medical School. *"Impact of the new direct acting antivirals on the Hepatitis C epidemic"*.

Theodore Hwan You, MD, MSc. Now Assistant Professor of Surgery, University of Pittsburgh. *"The optimal treatment of carotid artery disease"*

Janel Hanmer, MD, PhD. (2013-2015), Now assistant professor of medicine, University of Pittsburgh. *"Evaluation of the PROMISE measures to estimate quality of life"*

Hawre Jalal, MD, PhD. (2017 – present). Assistant Professor of Health Policy and Management. *"The Impact of the Opioid Epidemic and the Efficacy of Its Mitigation Strategies"*

## RESEARCH-RELATED ACTIVITIES

*Acquired Immunodeficiency Syndrome: Biology, Epidemiology, and Public Policy*

10/85 Guest Lecturer, Health Week, Tufts University, Medford, MA.

*Management of Asymptomatic Gallstones in the Diabetic Patient: A Decision Analysis*

- 04/88 Poster Competition Winner, annual meeting of the American College of Physicians, New York, NY.
- 09/88 Surgical Grand Rounds, New England Deaconess Hospital, Boston, MA.
- 10/88 Combined Medical/Surgical Rounds, Pacific Presbyterian Medical Center, San Francisco, CA.
- 11/88 Gastroenterology Rounds, Oregon Health Sciences Facility, Portland, OR.
- 02/89 Health Services Research Scientific Seminar, West Roxbury Veterans Administration Hospital, Roxbury, MA.
- 03/89 Resident Teaching Conference, Veterans Administration Hospital, University of Nevada School of Medicine, Reno, NV.
- 12/89 Medical Grand Rounds, Monadnock Community Hospital, Peterborough, NH.
- 12/90 Medical Grand Rounds, New England Deaconess Hospital, Boston, MA.
- 08/93 Medical Grand Rounds, St. Francis Hospital, Pittsburgh, PA.
- 11/93 Medical Grand Rounds, Mercy Hospital, Pittsburgh, PA.
- 04/95 Ambulatory Care Grand Rounds, Lexington Clinic, Lexington, KY.
- 08/95 Medical Grand Rounds, Shadyside Hospital, Pittsburgh, PA.
- 10/95 Medical Grand Rounds, Allegheny General Hospital, Pittsburgh, PA.
- 09/96 Medical Grand Rounds, McKeesport Hospital, Pittsburgh, PA.

*Predictors of Success in Liver Transplantation: A Multi-Stage Analysis*

- 11/88 Surgical Grand Rounds, Oregon Health Sciences Facility, Portland, OR.

*On-Line Automated Discharge Summaries*

- 03/90 Electronic Computing Health Oriented (ECHO) Seminar, spring meeting, Boston, MA.
- 03/91 Grand Rounds, New England Deaconess Hospital, Boston, MA.

*Decision Analysis Methodology*

- 11/90 Invited Faculty, presentation on Markov Process–Based Monte Carlo Simulation Models, Inter-Patient Outcomes Research Team (InterPORT) Decision Analysis Working Group, sponsored by the Agency for Health Care Policy and Research (AHCPR), Boston, MA.
- 07/91 Invited Faculty, Methods Workshop on Issues and Approaches to the Conduct of Health Services Research in PORTS, Eighth Annual Meeting of the Association for Health Services Research and Foundation for Health Services Research (AHSR/FHSR), San Diego, CA
- 08/94 Visiting Professor of Medicine, Meridia-Huron Hospital, Cleveland, OH.
- 11/94 Visiting Lecturer, Decision Analysis Mini-Course, St. Francis Hospital, Pittsburgh, PA.
- 12/94 Decision Analysis/Cost-Effectiveness Seminar, Astra/Merck, Wayne, PA.
- 10/06 Grand Rounds, West Penn Hospital, Pittsburgh, PA

*Introduction to Cost-Effectiveness Analysis*

- 10/96 Research Seminar, Center for Research on Health care, University of Pittsburgh, Pittsburgh, PA.
- 01/97 Research Seminar, Department of Social Psychology, University of Pittsburgh, Pittsburgh, PA.
- 6/08 Medical Grand Rounds, The University of Lausanne, Switzerland

*Modeling the Consequences of Alternative Organ Allocation Policies for Liver Transplantation*

- 12/03 Surgical Grand Rounds, University of Nebraska School of Medicine, Omaha, NA
- 03/04 Division of Transplantation Grand Rounds, University of Pittsburgh School of Medicine, Pittsburgh, PA
- 06/04 Harvard Center for Risk Analysis, Boston, MA

*How to Measure Clinical Outcomes*

- 05/93 Faculty Member, continuing medical education course on Malnutrition in the Hospitalized Patient, Harvard Medical School, Boston, MA.

*Clinical Information Systems and Quality of Care*

- 01/98 Interdisciplinary Grand Rounds, UPMC Shadyside/UPMC Presbyterian, Long Boat Key, FL.

*Pathophysiology of Managed Care*

- 10/01 Grand Rounds, Department of Medicine, University of Utah, Salt Lake City, UT.

- 11/01 Grand Rounds, Department of Medicine, University of Alabama at Birmingham, Birmingham, AL.  
 12/01 Primary Care/Ambulatory Medicine, University of San Diego, San Diego, CA.

*Health Care Quality: Implementing Change: Challenges and Opportunities*

- 12/04 UPMC Health Care Quality Forum, Herberman Conference Center, Pittsburgh, PA

*The Quality Revolution: Balancing the Roles of Society and the Physician*

- 11/03 Annual Update in Internal Medicine. Department of Medicine, University of Pittsburgh, Pittsburgh, PA

*The Future of Internal Medicine*

- 05/04 Beckwith Fellows Leadership Program, Development Dimensions International, Bridgeville, PA  
 05/05 Beckwith Fellows Leadership Program, Development Dimensions International, Bridgeville, PA  
 05/06 Beckwith Fellows Leadership Program, Development Dimensions International, Bridgeville, PA

*Introduction of Health Services Research*

- 03/05 University of Pittsburgh Geriatrics Fellowship Program Teaching Conference, Pittsburgh, PA

*Simulating Complex Disease: Modeling Biology and the Allocation of Donated Organs*

- 11/03 Harvard Center for Risk Analysis, Boston, MA  
 11/04 Invited Plenary Speaker, International Society for Complexity in Acute Illness, Pittsburgh, PA

*Evidence-Based Practice*

- 03/05 Department of Rehabilitation, The Children's Hospital Rehabilitation Institute, Pittsburgh, PA

*The Efficient Allocation of Organ Transplants*

- 10/06 Invited presentation at the ESF-IfW Conference on the Global Health Economy: New Technology and Medical Decision Making: Normative Models and Empirical Practice. Kiel, Germany, October 4-9, 2006

*Economic Analyses for Health Care*

- 04/07 Invited presentation – Office of Clinical Research/Center for Research on Healthcare's Clinical Research Seminar Series

*Mathematical Modeling Methods*

- 3/23/2007 *Virtual Clinical Trials: The Archimedes Model of Human Physiology and Disease*. Research Colloquium Seminar, Center for Biomedical Informatics, University of Pittsburgh  
 3/12/2008 *Virtual Clinical Trials: Gaining Biological insights Through Mathematical Models*. Grand Rounds, Department of Critical Care Medicine, University of Pittsburgh  
 3/12/2008 *Virtual Clinical Trials: Gaining Biological insights Through Mathematical Models*. Academic Rounds, Toronto Health Economics and Technology Assessment Collaborative, University of Toronto, Toronto, CN.  
 4/29/2009 *Virtual Clinical Trials: Gaining Biological insights Through Mathematical Models*. Magee-Womens Research Institute's Work-in-Progress (WIP) Seminar, Pittsburgh, PA  
 3/14/2015 *Modeling sepsis: Traditional and novel ways to quantify diseases?* Round Table Conference: Reducing the Global Burden of Sepsis – Developing a Roadmap, Brussels, Belgium.

**Other Research Activities**

- 1986–1991 Member, Technology Assessment Subgroup of the Health Science Policy Working Group, Division of Health Policy Research and Education, Harvard University, Cambridge, MA.  
 1990 Co-Coordinator, Workshop on Markov Processes and Simulation Modeling, annual meeting of the Society for Medical Decision Making, Boston, MA.  
 1990 Methodology Consultant, InterPORT Decision Analysis Working Group, sponsored by the Agency for Health Care Policy and Research (AHCPR), Boston, MA  
 1994 Session Chair, Health Care Technology Track, 1994 Winter Simulation Meetings, Orlando, FL.  
 1999 Member, External Review Panel, Assessing the Performance of Organ Transplantation Programs: Liver and Heart Transplantation, June 1999, Health Resources and Services Administration (HRSA) Division of Transplantation, Oak Lawn, MD.  
 2002–2005 Member, Kidney Disease Outcomes Quality Initiative (K/DOQI) Workshop on Clinical Practice Guidelines for Cardiovascular Disease in Dialysis Patients, National Kidney Foundation.

- 2004 Chairman, Independent Expert Panel on Statistical Methods Data: Simulation Modeling, September 2004, Division of Transplantation, HRSA.
- 2005–2008 Member, Scientific Advisory Committee to the Scientific Registry of Transplant Recipients (SRTR), Division of Transplantation, HRSA.
- 2007 Invited Presenter, "Using Physiology-Based Models to Enhance Clinical Trials." Presentation in the Evidence-Based Medicine Series: Redesigning the Clinical Effectiveness Research Paradigm, sponsored by the Institute of Medicine, December 10, 2007, in Washington DC.
- 2009 Invited Presenter, representing the Society for Medical Decision Making in expert testimony before the Federal Coordinating Council for Comparative Effectiveness Research on June 10, 2009, in Washington, DC. Testimony available at <http://nmr.rampard.com/fcc/20090610/default.html>, beginning at Webcast time 01:10:36.

### Peer Review Activities

#### Study Sections:

- 1992 External Reviewer, Health Care Technology Study Section, AHCPR.
- 1993 Technical Evaluator, Testbed Networks Technical Evaluation Group, High Performance Computing and Communications (HPCC) Biomedical Applications of Computing Technology, National Library of Medicine.
- 1995–1999 Member, Health Services Research Dissemination Study Section, AHCPR, National Health Service.
- 1997, 1998 Guest Member, Health Services Research Study Section, February 1997 and October 1998, AHCPR, National Health Service.
- 1998 Guest Member, Health Care Quality Study Section, AHCPR, National Health Service.
- 1999–2002 Member, Health Care Technology and Decision Science Study Section, AHCPR.
- 2002, 03, 06 Guest Member, AIDS and AIDS-Related Research Study Section 6 (AARR-6), National Institutes of Health.
- 2003–2006 Chair, Health Care Technology and Decision Sciences Study Section, Agency for Health Care Research and Quality. (AHRQ)
- 3/25-3/26/2008 Member, AHRQ RFA Prevention Special Emphasis Panel, Gaithersburg, MD
- 7/08/2010 Member, ZRG1 HDM-C 57 R: Comparative Effectiveness Research on GERD, MRSA and Dementia.
- 2018 Member – NIH ad hoc review committee for the Cancer Intervention and Surveillance Modeling Network (CISNET) program

#### Journals:

- 1999–2006 Associate Editor, *Medical Decision Making*

- Various years Reviewed for the following journals:
- AIDS*
- American Journal of Respiratory and Critical Care Medicine*
- American Journal of Transplantation*
- Annals of Internal Medicine*
- Health Services Research*
- JAMA*
- Journal of General Internal Medicine*
- Journal of the American College of Cardiology*
- Liver Transplantation*
- Medical Decision Making*
- New England Journal of Medicine*
- Obstetrics and Gynecology*
- Quality of Life Research*
- Symposium on Computer Applications in Medical Care (SCAMC) Proceedings*
- Value in Health*

### Current Research Interests

- Decision Analysis Methodology; Simulation; Markov Processes
- Application of Operations Research/Management Science tools to health care and disease
- Technology Assessment/Cost-Effectiveness Analysis
- Medical Information Systems; Use of Computers in Medicine
- Use of Large Databases for Clinical Research

Patient Preferences and Utility Assessment  
 Health Care Policy  
 Health Economics

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## SERVICE

### University, Medical School, and Hospital Service

#### *New England Deaconess Hospital, Boston*

1987–1993 Member, Data Processing Oversight Committee.  
 1987–1993 Member, On-line Deaconess Information System (ODISY) Clinical Committee.  
 1990–1991 Member, Ad Hoc Committee on Hospital Cost Comparisons.  
 1990–1991 Member, Search Committee for the Chief of the Section of General Internal Medicine.  
 1990–1992 Member, Disaster Committee.  
 1991–1993 Member, Medical Records Committee.  
 1991–1993 Member, Operations Advisory Committee, Deaconess Medicine.  
 1992–1993 Member, Quality Assurance Committee, Division of General Internal Medicine.

#### *Harvard Medical School, Boston*

1991–1992 Member, Ad Hoc Committee on Computing at Harvard Medical Center.

#### *UPMC Shadyside (Formerly Shadyside Hospital), Pittsburgh*

1993–1994 Member, Managed Care Project Team.  
 1993–1994 Member, Primary Care–Specialty Integration Task Force.  
 1993–1994 Member, Drug Interactions Physician Advisory Group.  
 1993–1997 Member, Board of Directors Multidisciplinary Education and Research Committee.  
 1993–1998 Member, Competitive Research Fund Study Group.  
 1993–1998 Member, Hospital Education and Research Committee.  
 1993–1999 Member, Management Information Systems (MIS) Operations Committee.  
 1995–1996 Hospital Representative to the national TDS Information Systems Working Group (MISPA).  
 1995–1999 Member, Pharmacy and Therapeutics Committee.  
 1996–1998 Compliance Officer, IL372 Medicare Reimbursement.  
 1996–1999 Member, Medical Records Committee.  
 1996–1999 Member, Medical Affairs Subcommittee.  
 1996–1999 Chairman, Informatics and Process Improvement Committee.

#### *UPMC Presbyterian, Pittsburgh*

1998–1999 Member, Total Quality Council.  
 1998–1999 Co-Chairman, Clinical Informatics Subcommittee of the Joint Patient Care Committee, UPMC Presbyterian/Shadyside Joint Board.  
 2001–2003 Member, Innovative Practice Committee.

#### *UPMC Health System, Pittsburgh*

1997–1998 Member, Clinical Information System (CIS) Selection Committee.  
 1997–1998 Member, UPMC Compliance Officers' Advisory Committee.  
 1997–1999 Member, Information Services Strategic Steering Committee, UPMC Health System.  
 1999–2000 Associate Medical Director, Clinical Information Systems.

#### *University of Pittsburgh School of Medicine*

1996–1997 Member, Research Planning Committee, Integrated Advanced Information Management Systems (IAIMS) Study Group.  
 1997–1998 Member, In-Hospital Medical Student Education Task Force.  
 1998–1999 Member, IAIMS Vocabulary Policy Committee.  
 1988–2000 Member, IAIMS Operations Committee.  
 1999-present Clinical Research Training Program Curriculum Committee  
 2000 Chair, Task Force on Medical Informatics in the Medical School Curriculum.



2002–2003 Member, Clinical Advisory Committee, University of Pittsburgh Institute on Aging  
 2003–2004 Member, Health Sciences Information Technology Faculty Advisory Committee.  
 2017 Member, General Internal Medicine Division Chief Search Committee

*University of Pittsburgh, Graduate School of Public Health*

2011-2012 Member, Strategic Planning Steering Committee

*Department of Health Policy and Management, Graduate School of Public Health*

2010- present HPM Executive Committee  
 2010- present HPM Curriculum Committee  
 2010- present HPM Alumni Relations Committee

*University of Pittsburgh*

2001–2010 Member, University Council on Graduate Study  
 2010–2016 Member, University Council on Institutional Excellence

**State, Regional, and National Service**

1994 Member, Nominations Committee, Society for Medical Decision Making.  
 1995–1996 Member, Interdisciplinary Teaching Group, Society for Medical Decision Making.  
 1996–1998 Chairman, Associates Program, American College of Physicians (ACP) Regional Meeting.  
 1997–1999 Member, Governor's Advisory Council, Pennsylvania Chapter, ACP.  
 1997 Member, Session on the Use of Large-Scale Datasets and Outcomes Models in Critical Care Medicine, American Thoracic Society Critical Care Assembly Workshop on Outcomes Tools in Critical Care, Toronto, Canada [Gordon Bernard, MD, Chairman].  
 1998 Member, Workshop on Cost-Effectiveness in Critical Care, American Thoracic Society, San Diego, California [Derek Angus, MD, MPH, and Gordon Bernard, MD, Chairmen].  
 1999–2001 Chairman, Membership Committee, Society for Medical Decision Making.  
 2000 Short Course Chairman, 2000 meeting of the Society for Medical Decision Making.  
 2000 Vice-President Elect, Society for Medical Decision Making.  
 2001 Short Course Co-Chairman, 2001 meeting of the Society for Medical Decision Making.  
 2001 Vice-President, Society for Medical Decision Making.  
 2001–2005 Member, Workshop on Kidney Disease Outcome Quality Initiative (K/DOQI) and Cardiovascular Disease in Dialysis, National Kidney Foundation.  
 2003 Scientific Program Co-Chair, national meeting of the Society for Medical Decision Making.  
 2005-2007 Education Committee Co-chair, International Society for Pharmacoeconomics and Outcomes Research (ISPOR)  
 2007-present Society for General Internal Medicine (SGIM) Health Policy Research subcommittee  
 2007 29<sup>th</sup> Annual Meeting Co-Chair, Society for Medical Decision Making  
 2007-2008 President-Elect, Society for Medical Decision Making  
 2008-2009 President, Society for Medical Decision Making  
 2012-present Member, Health Careers Futures Board, Jewish Healthcare Foundation  
 2014-2018 Member, Short Course Committee, International Society for Pharmacoeconomics and Outcomes Research (ISPOR)  
 2017 -present Member, Graham Prize selection committee, AUPHA  
 2018-2020 Vice-Chair, , International Society for Pharmacoeconomics and Outcomes Research (ISPOR) Education Committee

**Community Activities and Hospital Appointments**

1986–1989 Emergency Physician, Lahey Clinic Medical Center, Burlington, MA.  
 1986–1993 House Intensive Care Unit Physician, New England Baptist Hospital, Boston, MA.  
 1987–1989 Assistant in Medicine, Massachusetts General Hospital, Boston, MA.  
 1987–1993 Emergency Physician, The Cambridge Hospital, Cambridge, MA.  
 1989–1993 Staff Physician, New England Deaconess Hospital, Boston, MA.  
 1996–1997 Board Member, Keystone Physician Associates (KPA) Medical Network, Pittsburgh, PA.  
 1997–2002 Member, Medical Research Advisory Committee, The Pittsburgh Foundation, Pittsburgh, PA.  
 1998–2000 Member, Physician Advisory Committee, Pittsburgh Regional Health Care Initiative, Pittsburgh, PA.  
 1993–1010 Active Staff, Shadyside Hospital, Pittsburgh, PA.

1993–present Active Staff, University of Pittsburgh Medical Center, Pittsburgh, PA.

1994–present Board Member, Beckwith Institute for Innovation in Nursing, Pittsburgh, PA.

References: available upon request