

CURRICULUM VITAE

MARK S. ROBERTS, M.D., M.P.P., F.A.C.P.

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

BIOGRAPHICAL INFORMATION

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EDUCATION AND TRAINING

Undergraduate

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

Graduate

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

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

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

Postgraduate

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

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

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

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

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

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-present	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-present	Senior Medical Director, UPMC Health Plan

Other Appointments

1977–1978	Research Assistant, Harvard-MIT Joint Center for Urban Studies, Cambridge [Supervisor: Professor Robert Schaffer].
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

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)

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
 7/2012 Member, American College of Healthcare Executives (ACHE)

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, 24th 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).

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

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 B₁₂ 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. *Pharmacoconcepts*. 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, Satwicz 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, Moossy 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.
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
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
94. *Smith KJ, Tsevat J, Ness RB, Wiesenfeld HC, **Roberts MS**. Quality of life utilities for pelvic inflammatory disease health states. *Sex Transm Dis.* 2008 Mar;35(3):307-311 PMID: 18032995
95. Middleton DB, Chyongchiou JL, Smith KJ, Zimmerman RK, Nowalk MP, **Roberts MS**, Fox DE. Economic Evaluation of Standing Order Programs to Increase Pneumococcal Vaccination Rates in Hospitalized Elderly. *Infect Control Hosp Epidemiol.* 2008 May;29(5): 395-397. PMID: 18521990
96. *Braithwaite RS, Meltzer D, King J, Paltiel D, Leslie D, **Roberts MS**. What does the value of modern medicine say about the \$50,000-per-quality-adjusted life-year decision rule? *Medical Care.* 2008 Apr;46: 349-356 PMID: 18362813
97. *Sandikci B, Maillart LM, Schaefer AJ, Alagoz O, **Roberts MS**. Estimating the patient's price of privacy in liver transplantation. *Operations Research.* 2008; 56; 1393-1410
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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.

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–present Instructor, CLRES 2020 Biostatistics: Statistical Approaches to Clinical Research (3 lectures), University of Pittsburgh School of Medicine.
- 2003-present 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 Instructor: 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 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*
 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*

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

- 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 3rd 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 17th 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

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 14th 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
- 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 5th 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 15th 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 16th Annual European Congress, “Pharmacoeconomic Modeling – Applications”, Dublin, Ireland
- May 31, 2014 Course Instructor, ISPOR 19th Annual International Meeting, “Introduction to Modeling Methods”, Montreal, Canada

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–present Internal Medicine Teaching Rounds, 1 month/year.

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*

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. Dissertation to be decided. PhD expected 2012.
- 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 expected 2011
- 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
- Yomei Shaw, MS, PhD Candidate, Department of Health Policy and Management, University of Pittsburgh Graduate School of Public Health. Dissertation: TBA, PhD expected, 2014
- Amin Khademi, MS, PhD Candidate, Department of Industrial Engineering, University of Pittsburgh. Dissertation " TBA", PhD expected _____

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.

Advising of Master's Candidates, 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.

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

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*

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 VanPelt, 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, EdM. Assistant Professor of Medicine and Pediatrics, University of Pittsburgh. MS awarded 2008.

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

- Brian Primack, MD, MS. Assistant Professor of Medicine, University of Pittsburgh. *Effect of media on risky behaviors in adolescents.* PhD Expected 2011
- Gijsberta (Josie) Van London, MD, MS, Assistant Professor of medicine, University of Pittsburgh, dissertation TBA, PhD expected 2012.
- Alvaro Sanchez-Ortiz, MD, MS. Post-doctoral fellow, department of Trauma Surgery, University of Pittsburgh. Dissertation TBA, PhD expected, 2012.
- Hussain Tawbi, MD, MS, Assistant Professor of Medicine (Oncology) University of Pittsburgh. Dissertation TBA, PhD expected 2011
- Ahmad Tarhini MD, MS, Assistant Professor of Medicine (Oncology) University of Pittsburgh. Dissertation TBA, PhD expected 2011

Academic Advising (Students)

Student Name	Department	Academic Year
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
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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 – *Translation of Basic Research to Health Systems*
- Nov 14-15, 2013 Co-Chair, Healthcare Leadership Forum: Evidence-Based Medicine at the Center of Care, Chicago, IL

PROFESSIONAL ACTIVITIES: RESEARCH

Currently Funded Research Grants

Agency: NIDDK PI: Squires
 Grant #: U01- DK072146 Role: Co-Investigator
 Dates: 10/1/2010-9/30/2015 % Effort: 15% 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: NSF PI: Schaefer
 Grant #: CMMI-1100082 Role: Co-Investigator
 Dates: 5/1/2011-4/30/2014 % Effort: 1.25% (.15 mo/yr) direct costs: \$4,208 (Roberts' subaccount)

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: NSF PI: Maillart
 Grant #: CMMI-1100421 Role: Co-Investigator
 Dates: 9/1/2011-8/31/2014 % Effort: 2.08% 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: NIH/NIAAA PI: Braithwaite
 Grant #: 1 U24AA022007-01 Role: Sub-contract PI
 Dates: 9/15/2012-8/31/2017 % Effort: 10% 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: NIH PI: Puyana
 Grant #: D43 TW008443 Role: Co-Investigator
 Dates: 9/2009-6/2014 % Effort: 5 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

Training Grants and Mentoring/Advising roles on funded awards

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: 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

Pending Grants

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.

Agency: NIH PI: Bae
 Grant #: P21 Role: Sub-account PI
 Dates: 7/1/2013-6/30/2018 % Effort: 5% direct costs: \$58,582
 Title: Shorter vs. Standard-Duration Anticoagulation Treatment in Low-risk PE Patients-CCC

Pulmonary embolism (PE) affects 1 in 10,000 people annually in the US. This study will take advantage of two innovations developed by our group: 1) the Pulmonary Embolism Severity Index (PESI), which accurately identifies PE patients at low risk for short-term (i.e., 30 day and 3 month) mortality; and 2) an efficient and reliable CTPA method to measure clot burden.

Agency: PCORI PI: Levesque
 Grant #: P20 Role: Sub-account PI
 Dates: 9/1/2013-8/31/2016 % Effort: 10% direct costs: \$81,660
 Title: Rheumatoid Arthritis Patient-Centered Outcomes Research (RAPCOR)

Rheumatoid arthritis (RA) affects 1.3 million Americans and leads to joint destruction, lost work and a low quality of life. AHRQ has targeted RA treatment decisions among its top priorities for research. RA outcomes are improved with "treat to target" strategies and the American College of Rheumatology recommends use of quantitative disease activity measures for treatment decisions. It is our hypothesis that we can improve RA patient outcomes with better patient and physician disease activity and decision tools. Objectives:

(1) To develop, optimize and pilot test easy to use RA disease activity assessments and decision tools, with patient, physician and health system input, using the University of Pittsburgh Rheumatoid Arthritis Comparative Effectiveness Research (RACER) registry of 1,000 RA subjects, and (2) to validate and determine the impact of RA disease activity measures and decision tools within the large health system at the University of Pittsburgh Medical Center (UPMC).

Agency: PCORI PI: Roberts
 Grant #: 0037118 Role: PI
 Dates: 9/1/2013-8/31/2016 % Effort: 20% direct costs: \$665,268
 Title: Assessment of Treatment Options for Patients with Failed or Recalled Cardiac Device Labels

The study will recruit approximately 1000 randomly selected patients with indwelling pacemaker and defibrillator leads followed at the University of Pittsburgh Medical Center, including patients with normally functioning devices, failed leads that were replaced and function recalled leads. A validated risk assessment questionnaire will be developed and administered to these patients. Patient-specific Markov decision process models will be formulated and calibrated using clinical data to solve for various strategies that maximize life expectancy. A simulation will be used to estimate variability. Support tools based on the patient's clinical information and personal preferences will be developed, tested and validated to facilitate the decision making process for patients and physicians.

Agency: AHRQ PI: Roberts
 Grant #: 0033784 Role: PI
 Dates: 7/1/2013-6/30/2018 % Effort: 10% direct costs: \$863,063
 Title: Self-Management and Reminders with Technology Expanding Reach: A SMARTER PHR

We will build on the success of our demonstration project by evaluating the effects of fully implementing and disseminating the successful components of our first grant period, while continuing to expand the capability and interactivensness of our PHR, and use rigorous methods to evaluate a new set of innovations.

Agency: PCORI PI: Roberts
 Grant #: 0033124 Role: PI
 Dates: 1/1/2013-12/31/2015 % Effort: 20% direct costs: \$1,623,322
 Title: Personal Risk Stratification as a Tool for Prioritizing and Improving Care for Complex Patients

We seek to demonstrate that providing personalized prognostic information to patients and their providers will improve patient care, engage patients in their treatment decisions, and allow provider time to be spent more efficiently. We propose to integrate a novel, well validated risk stratification and prognostic tool (IndiGO from Archimedes) into our electronic health record (EHR) and make it readily available to patients and providers. It will use real time information to predict the personalized future risk of adverse health outcomes, and provide feedback to providers and patients regarding the individualized impact that various treatment and behavior choices have on these risks.

Agency: AHRQ PI:
 Grant #: P21 Role: Sub-account PI
 Dates: 9/1/2013-8/31/2018 % Effort: 5% direct costs: \$72,132
 Title: Virtual Integrated Preparation: VIP-Engaging Patients, Improving Preventive Care

Aims:

1. Develop a comprehensive, personal health record (PHR)-based pre-visit planning, VIP, that better prepares patients and providers for an upcoming visit.
 2. Compare the effectiveness of VIP to an information control for delivering USPSTF-recommended preventive health services.
 3. Continuously enumerate and catalog the facilitators and barriers to implementation and use of electronic pre-visit VIP among patients and providers in an ambulatory setting.
- This innovative study will provide much needed data regarding the ability of fully integrated patient portals to enhance efficiency, efficacy and effectiveness of preventive health service delivery.

Grant Funding History

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: NHLBI PI: Bae

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: 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: AHRQ PI: **Roberts**
 Grant #: 1R25-HS09784-01 Role: Principal Investigator
 Dates: 5/1/98–4/31/01 % Effort: 10% direct costs: \$240,943
 Title: *Training Program in Clinical 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: 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*
 The purpose of this proposal was to develop mathematical models of the decisions that patients (and physicians, as agents for patients) must make to accept or reject an organ of a particular quality.

Agency: Jewish Health Care Foundation PI: **Roberts**
 Grant #: N/A Role: Principal Investigator
 Dates: 9/1/2003-8/1/2004 % Effort: 5% direct costs: \$37,259
 Title: *The Application of Management Science and Simulation to Hospital Operation and Planning*
 This project will develop and calibrate a discrete-event simulation of the UPMC Presbyterian/Montefiore Hospital complex at the bed and patient level, for the purpose of predicting multiple outcomes as a result of process changes in hospital departments.

Agency: Assn of Teachers of Family Medicine PI: Middleton

- Grant #: N/A Role: Co-Investigator
 Dates: 10/1/03–3/31/05 % Effort: 2% (6 months/year) direct costs: \$4,265
 Title: *Standing Orders for Vaccination of Hospitalized Elderly*
 This project will document the costs of a hospital-based standing-order vaccination program for both killed influenza and pneumococcal polysaccharide vaccines through direct observation of time and effort necessary to administer these vaccines.
- Agency: Open Society Institute PI: King
 Grant #: 200008717 Role: Curriculum Liaison, CRTP
 Dates: 7/1/03–7/31/05 % Effort: 3% (donated) direct costs: N/A
 Title: *Palliative Care Fellowship*
 The aim of the project is to increase and enhance the existing Palliative Care Fellowship by formalizing the curriculum, strengthening the evaluation, and adding a research component to the training.
- Agency: NIH-NIGMS PI: Angus
 Grant #: R01 GM61992 Role: Investigator
 Dates: 4/1/03–3/31/05 % Effort: 10% direct costs: N/A
 Title: *Genetic and Inflammatory Markers of Sepsis*
 This study examined a cohort of 3500 patients with confirmed pneumonia at presentation to the emergency room in 32 hospitals in southwestern Pennsylvania and Connecticut and produced a large-scale epidemiological assessment of the clinical, molecular, and genetic factors that influence the onset of infection and progression to sepsis, organ dysfunction, and death.
- Agency: AHRQ PI: Schechter
 Grant #: R36 HS15533-01 Role: Mentor/Advisor
 Dates: 03/01/05-2/28/2006 % Effort: (donated) direct costs: N/A
 Title: *Optimizing when to start and switch HIV therapy*
 The purpose of this project is to develop a Markov Decision Process (MDP) of the clinical problem of when to initiate HAART therapy, and when viral resistance is detected, inform both the question of how to define virilological failure and when to switch to another set of drugs.
- Agency: NIH-NIAAA PI: Saitz (PI, Boston Med Ctr)/Kraemer (Sub-Contract PI)
 Grant #: R01 AA012617 Role: Investigator
 Dates: 9/1/00–4/30/06 % Effort: 7.5%–5% direct costs: N/A
 Title: *Hospital-Based Brief Intervention for Alcohol Problems*
 The primary goal of this project is to conduct cost-effectiveness analyses of data, including the randomized trial results and the development of the Alcohol Intervention Policy Model.
- Agency: NIH PI: Sweet
 Grant #: T32HD040673 Role: Mentor; Curriculum Liaison
 Dates: 5/1/01–4/30/06 % Effort: 2.5% (donated) direct costs: N/A
 Title: *OB-GYN Fellowships in Epidemiology and Clinical Trials*
 The purpose of this training program is to develop clinical and population research skills in general OB/GYN practitioners. Fellows will participate in the core curriculum of the Clinical Research Training Program, which Dr. Roberts directs.
- 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 for 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*”

RESEARCH-RELATED ACTIVITIES

Seminars and Invited Lectureships

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

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.
- 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.

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

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.

University of Pittsburgh, Graduate School of Public Health

- 2011-2012 Member, Strategic Planning Steering Committee

University of Pittsburgh

- 2001–2010 Member, University Council on Graduate Study
- 2010-present 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-present	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 th 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

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–present	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