

*CURRICULUM VITAE*

**DENNIS G. FRYBACK**

Married

Born 11/23/47 in Neosho, Missouri

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**Education:**

B.A. (Psychology-Mathematics) The University of California, Los Angeles; 1969.

M.A. (Mathematics) The University of Michigan, 1973

Ph.D. (Psychology) The University of Michigan, December 1974

**Academic Positions (Chronological order):**

Assistant Scientist, Industrial Engineering, 1974-1976

Clinical Assistant Professor, Preventive Medicine, 1975 - 1977

Assistant Professor, Preventive Medicine, 1977 - 1981

Assistant Professor, Industrial Engineering, 1978 - 1981

Associate Professor, Industrial Engineering and Preventive Medicine, July 1981

Professor, Department of Industrial Engineering, July 1984 - present

Professor, Department of Preventive Medicine, July 1984 – 2001

Professor, Department of Population Health Sciences, July 2001 – present (dept name changed)

**Non-academic Positions:**

Special Expert, Lister Hill National Center for Biomedical Communications, National Library of Medicine, NIH, Bethesda, MD. 6/84 - 8/85. (on leave from University of Wisconsin during this time)

**Other Responsibilities:**

Editor-in-Chief, *MEDICAL DECISION MAKING*, responsible for Volumes VI (1986) through VIII (1988).

**Honors and Awards:**

1994 Society for Medical Decision Making, Eugene L. Saenger Award for Career Service.  
1996 Fellow of Association of Health Services Research.  
1999 Society for Medical Decision Making, Career Achievement Award.  
2000 Elected Member of Institute of Medicine, National Academy of Sciences.

**Consultancies:**

Consultant to American College of Radiology, 1972 - 1976, 1981 - 1986; ACR Efficacy Study, and the ACR Committee on Efficacy of Diagnostic Radiology

Consultant to Office of Medical Education Research and Development, Michigan State university, for design and guidance of research project "Studies in Clinical Reasoning and Information Theory", September 1, 1979 to August 31, 1983.

Consultant to University of Toronto, Rheumatoid Arthritis Study Group, for development of functional status indexes in rheumatoid arthritics. July 1981 - December 1981

Consultant to University of New Mexico, School of Medicine, for design of research studies in radiology, computers in medicine education, and lectures on medical decision making. 1981, 1982, 1983

Consultant to VA Medical Center, Health Services Research and Development, Salt Lake City, for planning of Clinical Decision Support System research and development in the VA system. 1985

Consultant to University of Rochester, Department of Radiology, for development of research design to evaluate Magnetic Resonance Imaging contribution to clinical decision making. 1985-87.

Consultant to Canadian Arthritis Society, for small group process to derive priorities for research at national invitational conference. Feb. - October, 1987.

Consultant to General Electric Company, Medical Systems Division, for executive conferences on cost-effectiveness assessment of diagnostic. 1989 - 1993.

Consultant to General Electric Company, Medical Systems Division, as member Board of Directors of General Electric Radiology Research Academic Fellowship Program, 1991-98.

Consultant to Merck, Sharp & Dohme, International, to advise on development of clinical trial endpoint measures. 1991.

**Memberships:**

American Association for the Advancement of Science (AAAS)  
AcademyHealth (nee, Academy for Health Services Research and Policy Analysis (AHSR))  
International Society for Bayesian Analysis (ISBA)  
Judgment/Decision Making Society (J/DM)  
Sigma Xi  
Society for Medical Decision Making (SMDM) (Member, Board of Directors, 1979-1981; President-Elect, 1981-1982; President, 1982-1983; editor-in-chief of the society's journal, 1986-88.)  
The International Health Economics Association (iHEA)

The International Society for Quality of Life Research (ISOQOL)

**Research Interests:**

Methodology for summary measures of population health  
Bayesian statistics applied to uncertainty analysis in complex models  
Cost-effectiveness evaluation in health care  
Application of Decision Analysis to Problems in Health Service Delivery  
Preference-based assessments of health status and medical outcomes  
Decision analysis application and methodology development  
Simulation modeling in health care systems

**Teaching Responsibilities:**

Training Grant Director, AHCPR-sponsored doctoral training program in Population-based Health Services Research, 1998-present.

Courses currently taught regularly (sole responsibility):

Population Health Sciences 876: "Measuring Health Outcomes" (2004 – present).

Pop Health Sci 375 (1cr) – co-organized "Intro to Population Health Sciences", an introductory course for advanced undergraduates, with T. Young (2003-present)

Courses formerly taught regularly (sole responsibility):

Prv. Med. 875 (3 cr.) -- "Assessing Medical Technologies" (1989 - 2003). This course has 2 sections, one designed for masters and doctoral students in Population Health, Pharmacy, Industrial Engineering (health systems majors), Nursing, and allied disciplines. The other section is restricted to mid-career clinicians pursuing the administrative medicine option in the Population Health masters degree program; this is taught as a non-residential course.

Ind. Engr. 613 (3 cr.) -- "Multiple Criteria Evaluation: Utility Assessment Models and Methods" (taught 1978 - 1991)

Prv. Med. 725 (3 cr.) -- "Intermediate Statistics for Health Administration" (taught 1979-1988)

Courses co-taught, or taught on an irregular basis:

Prv. Med. 710 (3 cr.) -- "Clinical Preventive Medicine" (1982-1984)

Prv. Med. 650 (2 cr.) -- "Clinical Decision Analysis" (1981-1983)

Ind. Engr. 816 (3 cr.) -- Special topics in Industrial Engr.; topics have included:

- o "Decision analysis"
- o "Decision Support Systems"
- o "Technology Assessment in health care"
- o "Research issues in quantitative decision models" (with P. Glynn & F. Sainfort)
- o "Decision Support Systems research" (with A. Thesen)

**Service:**

November 1976, member State of Wisconsin Technical Advisory Committee for the White House Conference on Handicapped Individuals.

January 1978, member State of Wisconsin, Division of Health, Computed Tomography Technical Advisory Committee.

April 1978, member Technical Advisory Sub-Committee for Open Heart and Cardiac Catheterization Standards.

Panelist, State Medical Society of Wisconsin Leadership Conference, February 24, 1979. Panel Presentation on "The Basic Sciences of Health Planning," moderated by Don E. Detmer, M.D.

October 1979, member, Decertification Expert Work Group, State of Wisconsin, Division of Health.

July, 1980-1991, member, Scientific committee #69, "Efficacy Studies", National Council for Radiation Protection and Measurements.

June, 1982, member, Special Advisory Committee on Digital Vascular Imaging, State of Wisconsin, Division of Health.

November, 1982, member, National Institutes of Health, National Library of Medicine, ad hoc Study Section for review of research proposals.

June - Dec. 1983, member, State of Wisconsin, Health Policy Council, Ad Hoc Committee on Standards for Open Heart Surgery and Cardiac Catheterization.

Sept. - Dec. 1983, member, National Institutes of Health, National Library of Medicine, ad hoc Study Section for review of proposals to establish Training Grant Programs in Computers in Medicine.

July, 1984, - Member, Advisory Committee for the Development and Publication of Guidelines for Academic Health Sciences Center Libraries. (Committee jointly sponsored by Association of Academic Health Sciences Library Directors and the Medical Library Association to help to set directions and goals for future information management and dissemination in the health sciences.)

July-Aug., 1985, -- Site Visitor for National Library of Medicine and member, ad hoc study section for review of proposals from regular study section members.

1985-86 -- Member, National Library of Medicine, Long Range Planning Committee for guiding research in Medical Informatics. This committee was convened by and reported to the Director of NLM.

1985-89 -- Member, Health Care Technology Assessment Study Section, National Center for Health Services Research.

1989-90 -- Member, Committee to Improve the NIH Consensus Process, Institute of Medicine, National Academy of Sciences. This committee was formed for a 6 month span to discuss and write a report for the NIH Office of Medical Applications of Research on how the NIH process might be improved

1990-1995 -- Member, US Preventive Services Task Force; for Deputy Assistant Secretary for Health and Human Services, Office of Disease Prevention and Health Promotion. Panel to write a revision of the book published by the US Task Force on Prevention Services, "*Guide to Clinical Preventive Services*." Result was 2nd edition, published Jan. 1996, by Williams & Wilkins.

1990-92 --Member, Associated University Programs in Health Administration, Pew Task Force on Technology Assessment in Health Care Management Education. Panel to assess state of the art in educating health care managers about technology assessment and to develop and disseminate curricular materials.

- 1990-94 -- Member, National Library of Medicine, Board of Scientific Counselors. (Chairman, 1992-94.)
- 1991-98 -- Member, Advisory Board to oversee General Electric Radiology Research and Education Fellowship. (Write and publish guidelines, and select Fellows for up to 6, 2-year awards of \$50,000/yr. to train young radiology faculty in technology assessment.)
- 1992-96 -- Chairman, Health Care Technology Study Section, Agency for Health Care Policy and Research, US Dept. Health and Human Services.
- 1993-96 -- Member, "Cost Effectiveness Panel for Clinical Preventive Services". This panel convened under auspices of Deputy Assistant Secretary for Health and Human Services, Office of Disease Prevention and Health Promotion. Result was MR Gold, JE Siegel, MC Weinstein, LB Russell [Eds.] *Cost Effectiveness in Health and Medicine*, Oxford University Press, 1996.
- 1997 -- Member, Institute of Medicine, National Academy of Sciences, Committee on Summary Measures of Population Health Status. (Report: Committee on Summary Measures of Population Health, MJ Field, MR Gold [Eds.] *Summarizing Population Health: Directions for the Development and Application of Population Metrics*, National Academy Press: Washington D.C. 1998, available through web page: [www.nap.edu](http://www.nap.edu).)
- 1997-2001 – Member, National Advisory Council for Health Care Policy, Research, and Evaluation. (NAC advises the Administrator of the U.S. Agency for Health Care Policy and Research and the Secretary of Health and Human Services.)
- 1998-2001; 2003-2006 – Member, University of Wisconsin Medical School Academic Planning Council.
- 2004-2006 – Member, Institute of Medicine (IOM) Committee to Evaluate Measures of Health Benefits for Environmental, Health, and Safety Regulation. (Report: IOM publication, *Valuing Health for Regulatory Cost-Effectiveness Analysis*, Jan. 2006)
- 2004 – National Research Council (NRC) workshop on Establishing a National Account for Health (discussant).
- 2006-present – Member, Panel on National Health Accounts, Committee on National Statistics of The National Academies.

**Funded Research Activity:**

- 1974-76: "Validity and Reliability Studies on the Techniques for Identifying Scarcity", Project Director. Total Budget Amount: \$155,855. Source: National Center for Health Services Research, DHEW.
- 1977-80: "EMS Severity Index Research", Co-PI. Budget Amount: \$347,864. Source: National Center for Health Services Research, DHEW.
- 1978-80: "Studies on Improving Efficacy of Clinical Decisions", Principal Investigator. Total budget amount: \$50,000. Source: National Center for Health Services Research, DHEW.

- 1981-84: "Feedback Technology to Improve Physician Judgment", D. Fryback, Principal Investigator; J.J. Noren, M.D., Co-Principal Investigator; National Library of Medicine. Total budget amount: \$498,440.
- 1985-86: "Development of a Prototype Database to Explore Biomedical Literature Search and Retrieval Strategies." The University of Wisconsin-Madison Graduate School, Biomedical Research Support Grant. \$10,000
- 1986-87: "Development of an Initial Prototype Computer Data Base for Medical Decision Analysis." The University of Wisconsin-Madison Graduate School, Research Committee. \$21,121.
- 1988: "Design of a Pavement Management Decision Support System" for Wisconsin Department of Transportation. \$117,000 over 11 months. (Principal Investigator; co-PI Francois Sainfort)
- 1988-89: "Costs and Benefits in health program design: Application from the point of view of an HMO". University of Wisconsin Graduate Research Committee, \$16,755. (Principal Investigator)
- 1989-90: "Modeling the burden of chronic disease." Subcontract to the State of Wisconsin, Division of Health, on contract from Centers for Disease Control. \$49,000 (Co-investigator.)
- 1989-90: "Customer-oriented outcome assessment." Veterans Administration dissertation funding for my Ph.D. student, Erik J. Dasbach, \$15,000. (Dissertation supervisor)
- 1989-90: "Comparison of efficacy of MR, CT and CT myelography for diagnosis of herniated lumbar disc". Subcontract to University of Rochester grant "Studies in diagnostic technology assessment", A.I. Mushlin Principal Investigator. \$79,000 (Co-PI to J.R. Thornbury Principal Investigator at U Wisc.)
- 1990-96: "Longitudinal comparison of health outcome measures." Proposal funded by Agency for Health Care Policy and Research, Public Health Service, Office of the Asst. Secretary for Health, US Dept. Health and Human Services; D. Fryback Principal Investigator, R Klein, BEK Klein, co-PIs. \$714,123 direct costs 9/1/90 - 8/31/95.
- 1990-91: Graduate Fellowship support for Medical Decision Making and Technology Assessment Laboratory, D.G. Fryback, Director. Grant from General Electric Medical Systems, Advanced Technology Division. \$10,500.
- 1994-96: "Medical care costs and utilization by adults with sleep apnea". Funded by Agency for Health Care Policy and Research, Public Health Service, Office of the Asst. Secretary for Health, US Dept. Health and Human Services; D. Fryback Principal Investigator, T. Young, co-P.I. \$339,590 direct costs 7/1/94-6/30/96.
- 1994-95: "Technology Assessment for Radiologists: A course of study." Production of an anthology of materials and readings for a self-study course in technology assessment directed to academic radiologists. Supported by General Electric Medical Systems, Waukesha, WI. D. Fryback, Principal Investigator. \$20,000 direct costs.
- 1996-97: "Medical care costs and health care utilization by persons with allergic rhinitis, asthma, and sleep apnea: a population-based study". Integrated Therapeutics Group, Inc. T. Young, PI, D. Fryback, co-PI; \$157,300 total costs.

- 1997-98: Bayesian analysis of clinical trial data for cost-effectiveness calculations. Contract with MEDTAP, International, Inc. D. Fryback, P.I., \$23,000 total costs.
- 1998-2003: "Doctoral Training in Population-based Health Services Research." Institutional NRSA training award from Agency for Health Care Policy and Research, DHHS. Program Director, Dennis Fryback. \$653,987 total costs.
- 1999: Operation of Quality of Life Outcomes Measures Committee, for American College of Radiology Imaging Network consortium to evaluate new imaging exams in oncology; overall ACRIN project funded at \$22 million 1999-2004; Fryback subcontract is \$35,938 1999 total costs. Project is anticipated to be renewed through 2004.
- 2000-2004: "Simulating Breast Cancer in Wisconsin." National Cancer Institute. D. Fryback, P.I. \$715,788 total costs. A study of simulation modeling to enhance and interpret cancer surveillance data, funded as a cooperative agreement, CISNET, with 8 other simulation projects in the US and the Netherlands.
- 2000-2001: "Building a Bayesian Reference Cost-effectiveness Analysis." Awarded by The Bayesian Initiative. D. Fryback, P.I. \$45,815 total costs. Project to re-analyze the Canadian Implantable Defibrillator Study trial data to do a fully Bayesian cost-effectiveness analysis from primary data. Also to present this as case-study short course at International Society for Pharmacoeconomics and Outcomes Research annual meeting.
- 2003-2008: "PhD Training in Population Health & Quality Improvement", competing renewal of T-32 Institutional training grant HS000083, years 6-10, from Agency for Healthcare Research and Quality, to University of Wisconsin-Madison. D. Fryback, Director. \$920,036 direct costs.
- 2004-2008: "Norms and Performance Comparisons for 5 Health Indexes", P01 AG020679, from National Institute on Aging. \$6,935,693 total costs. The goals of this Program of Projects is to obtain national norms for and to do performance comparisons among five leading generic health indexes.

**Publications (refereed):**

1. Snapper KJ, **Fryback DG**. Inferences based on unreliable reports. *Journal of Experimental Psychology* 1971; 87:401-4.
2. **Fryback DG**, Goodman BC, Edwards W. Choices among bets by Las Vegas gamblers: Absolute and contextual effects. *Journal of Experimental Psychology* 1974; 98:271-8.
3. Thornbury JR, **Fryback DG**, Edwards W. Likelihood ratios as a measure of the diagnostic usefulness of excretory urogram information. *Radiology* 1975;114(3):561-5.
4. Health Services Research Group, Center for Health Systems Research and Analysis, University of Wisconsin. Development of the Index of Medical Underservice. *Health Services Research* 1975; 10(2):168-80. (This paper awarded the prize for the best OR application published in the American literature in 1975, an award voted annually by Operations Research Society of America, Health Applications Section.)
5. Thornbury JR, **Fryback DG**. Use of excretory urogram information in the solution of the renal cyst/tumor/cortical nodule problem. *Radiology* 1976;118(3):575-8.
6. **Fryback DG**, Thornbury JR. Evaluation of a computerized Bayesian model for diagnosis of renal cyst vs. tumor vs. normal variant from urogram information. *Invest Radiol* 1976;11(2):102-11.

7. Thornbury JR, **Fryback DG**. Cost-benefit analysis, medical decision making and the individual radiologist. *Curr Probl Diagn Radiol* 1977;7(2):1-35.
8. **Fryback DG**, Thornbury JR. Informal use of decision theory to improve radiological patient management. *Radiology* 1978;129(2):385-8.
9. **Fryback DG**. Bayes' theorem and conditional nonindependence of data in medical diagnosis. *Comput Biomed Res* 1978;11(5):423-34. . (Reprinted in J.A. Reggia, S. Tuhim, Eds., *Computer- Assisted Medical Decision Making*, Springer, 1985.)
10. **Fryback DG**, Gustafson DH, Detmer DE. Local priorities for allocation of resources: comparison with the IMU. *Inquiry* 1978;15(3):265-74.
11. Detmer DE, **Fryback DG**, Gassner K. Heuristics and biases in medical decision-making. *J Med Educ* 1978;53(8):682-3.
12. Thornbury JR, **Fryback DG**, Patterson FE, Chiavarini RL. Effect of screen/film combinations on diagnostic certainty: Hi-Plus/RPL versus Lanex/Ortho G in excretory urography. *AJR Am J Roentgenol* 1978;130(1):83-7.
13. Thornbury JR, **Fryback DG**, Kuhns LR. Application of case series review results to the evaluation of individual cases in diagnostic radiology. *AJR Am J Roentgenol* 1979;133(5):909-12.
14. DeSmet AA, **Fryback DG**, Thornbury JR. A second look at the utility of radiographic skull examination for trauma. *AJR Am J Roentgenol* 1979;132(1):95-9.
15. Nockerts SR, Detmer DE, **Fryback DG**. Incidental appendectomy in the elderly? No. *Surgery* 1980;88(2):301-6. (This article was reprinted in *Selected Readings in General Surgery*, 1986.)
16. Thornbury JR, **Fryback DG**, Hildenbrand PG, Bell GV, Parker TW. Evaluation of radiologists' performance as subjective diagnostic probability estimators. *Investigative Radiology* 1980;15:437.
17. Thornbury JR, Stanley JC, **Fryback DG**. Limited usefulness of hypertensive excretory urography. *Urol Radiol* 1981;3(4):209-11.
18. Bigongiari LR, Preston DF, Cook L, Dwyer SJD, Fritz S, **Fryback DG**, et al. Uncertainty/information as measure of various urographic parameters: an information theory model of diagnosis of renal masses. *Invest Radiol* 1981;16(1):77-81.
19. Thornbury JR, Stanley JC, **Fryback DG**. Hypertensive urogram: a nondiscriminatory test for renovascular hypertension. *AJR Am J Roentgenol* 1982;138(1):43-9.
20. Gustafson DH, **Fryback DG**, Rose JH, Prokop CT, Detmer DE, Rossmeissl JC, Taylor C, Carnazzo A. An evaluation of multiple trauma severity indices created by different index development strategies. *Med Care* 1983;21(7):674-91.
21. **Fryback DG**. A conceptual model for output measures in cost-effectiveness evaluation of diagnostic imaging. *J Neuroradiol* 1983;10(2):94-6.
22. Strother CM, **Fryback DG**, Detmer DE. Digital subtraction arteriography. *J Neuroradiol* 1983;10(2):192-5.

23. **Fryback DG**, Keeney, RL. Constructing a complex judgmental model: An index of trauma severity. *Management Science* 1983; 29(8):869-883.
24. Thornbury JR, Campbell JA, Masters SJ, **Fryback DG**. Skull fracture and the low risk of intracranial sequelae in minor head trauma. *AJR Am J Roentgenol* 1984;143(3):661-4. (Simultaneous publication in *Am J Neuroradiology* 1984;5:459-62, at request of the editors.)
25. Thornbury JR, Stanley JC, **Fryback DG**. Optimizing work-up of adult hypertensive patients for renal artery stenosis. Observations about hypertensive urography, digital subtraction arteriography, and patient selection. *Radiol Clin North Am* 1984;22(2):333-9.
26. **Fryback DG**. Decision maker, quantify thyself! *Med Decis Making* 1985;5(1):51-60.
27. Love RR, **Fryback DG**, Kimbrough SR. A cost-effectiveness analysis of screening for carcinoma of the prostate by digital examination. *Med Decis Making* 1985;5(3):263-78.
28. **Fryback DG**. A program for training and feedback about probability estimation for physicians. *Comput Methods Programs Biomed* 1986;22(1):27-33.
29. Gustafson DH, **Fryback DG**, Rose JH, Yick V, Prokop CT, Detmer DE, Moore J. A decision theoretic methodology for severity index development. *Med Decis Making* 1986;6(1):27-35.
30. Rao N, Jellinek HM, Harberg JK, **Fryback DG**. The art of medicine: subjective measures as predictors of outcome in stroke and traumatic brain injury. *Arch Phys Med Rehabil* 1988;69(3 Pt 1):179-82.
31. Bombardier C, Chalmers A, **Fryback D**, Jamali F, Verbeeck R. Summary of workshop results, preworkshop questionnaire, and small-group discussions. *J Rheumatology* 1988; 15:75-77.
32. Palta M, Gabbert D, **Fryback D**, Widjaja I, Peters ME, Farrell P, et al. Development and validation of an index for scoring baseline respiratory disease in the very low birth weight neonate. Severity Index Development and Validation Panels and Newborn Lung Project. *Pediatrics* 1990;86(5):714-21.
33. Thornbury JR, Kido DK, Mushlin AI, Phelps CE, Mooney C, **Fryback DG**. Increasing the scientific quality of clinical efficacy studies of magnetic resonance imaging. *Invest Radiol* 1991;26(9):829-35.
34. **Fryback DG**, Thornbury JR. The efficacy of diagnostic imaging. *Med Decis Making* 1991;11(2):88-94.
35. Dasbach EJ, **Fryback DG**, Newcomb PA, Klein R, Klein BE. Cost-effectiveness of strategies for detecting diabetic retinopathy. *Med Care* 1991;29(1):20-39.
36. Thornbury JR, **Fryback DG**. Technology assessment--an American view. *Eur J Radiol* 1992;14(2):147-56.
37. Thornbury JR, **Fryback DG**, Kuhns LR. Probability theory aids choice of optimal exam. *Diagn Imaging* 1992;14(3):105-11.
38. Frame PS, **Fryback DG**, Patterson C. Screening for abdominal aortic aneurysm in men ages 60 to 80 years. A cost-effectiveness analysis. *Ann Intern Med* 1993;119(5):411-6.
39. **Fryback DG**, Dasbach EJ, Klein R, Klein BE, Dorn N, Peterson K, et al. The Beaver Dam Health Outcomes Study: initial catalog of health-state quality factors. *Med Decis Making* 1993;13(2):89-102. [Published with editorial comment.]

40. Thornbury JR, **Fryback DG**, Turski PA, Javid MJ, McDonald JV, Beinlich BR, et al. Disk-caused nerve compression in patients with acute low-back pain: diagnosis with MR, CT myelography, and plain CT [published erratum appears in *Radiology* 1993 Jun;187(3):880] [see comments]. *Radiology* 1993;186(3):731-8.
41. Weatherly MR, Palmer CG, Peters ME, Green CG, **Fryback D**, Langhough R, et al. Wisconsin cystic fibrosis chest radiograph scoring system. *Pediatrics* 1993;91(2):488-95.
42. Sainfort F, **Fryback DG**, Deichtman J, Ross F, Shober S, DeCabooter P, Weiss K. A pavement management decision support system." *Production and Operations Management*, 1994;3(1):1-20. [This paper won the annual award for best paper in *POM* in 1993.]
43. Birnbaum ML, Robinson NE, Kuska BM, Stone HL, **Fryback DG**, Rose JH. Effect of advanced cardiac life-support training in rural, community hospitals. *Crit Care Med* 1994;22(5):741-9.
44. Albertsen PC, **Fryback DG**, Storer BE, Kolon TF, Fine J. Long-term survival among men with conservatively treated localized prostate cancer. *JAMA* 1995;274(8):626-31. [Published with editorial comment.]
45. Lawrence WF, Grist TM, Brazy PC, **Fryback DG**. Magnetic resonance angiography in progressive renal failure: a technology assessment. *Am J Kidney Dis* 1995;25(5):701-9. [Published with editorial comment.]
46. Lawrence WF, **Fryback DG**, Martin PA, Klein R, Klein BE. Health status and hypertension: a population-based study. *J Clin Epidemiol* 1996;49(11):1239-45.
47. Albertsen PC, **Fryback DG**, Storer BE, Kolon TF, Fine J. The impact of co-morbidity on life expectancy among men with localized prostate cancer [see comments]. *J Urol* 1996;156(1):127-32.
48. **Fryback DG**, Lawrence WF. Dollars may not buy as many QALYs as we think: A problem with defining quality of life adjustments. *Medical Decision Making* 1997;17(3):276-84.
49. **Fryback DG**, Lawrence WF, Martin PA, Klein R, Klein BEK. Predicting Quality of Well-being scores from the SF-36: Results from the Beaver Dam Health Outcomes Study. *Med Decis Making* 1997;17(1):1-9.
50. Mandelblatt J, **Fryback D**, Weinstein M, Russell L, Gold M. Assessing the effectiveness of health interventions for cost-effectiveness analysis. Panel on Cost-Effectiveness in Health and Medicine. *Journal of General Internal Medicine* 1997;12(9):551-8.
51. Jeng OJ, Radwin RG, **Fryback DG**. Preliminary evaluation of a sensory and psychomotor functional test battery for carpal tunnel syndrome: Part 1--Confirmed cases and normal subjects. *Am Ind Hyg Assoc J* 1997;58(12):852-60.
52. Swan JS, **Fryback DG**, Lawrence WF, Katz DA, Heisey DM, Hagenauer ME, et al. MR and conventional angiography: work in progress toward assessing utility in radiology. *Acad Radiol* 1997;4(7):475-82.
53. Tomar RH, Lee S, Wu SY, Klein R, Klein BE, Moss SE, **Fryback DG**, Tollios JL, Sainfort F. Disease progression and cost of insulin dependent diabetes mellitus: development and application of a simulation model. *J Soc Health Syst* 1998;5(4):24-37.
54. Gold MR, Franks P, McCoy KI, **Fryback DG**. Toward consistency in cost-utility analyses: using national measures to create condition-specific values [see comments]. *Med Care* 1998;36(6):778-92.

55. Wu SY, Sainfort F, Tomar RH, Tollios JL, **Fryback DG**, Klein R, et al. Development and application of a model to estimate the impact of type 1 diabetes on health-related quality of life. *Diabetes Care* 1998;21(5):725-31.
56. Palta M, Sadek M, Barnet JH, Evans M, Weinstein MR, McGuinness G, Peters ME, Gabbert D, **Fryback DG**, Farrell P. Evaluation of criteria for chronic lung disease in surviving very low birth weight infants. Newborn Lung Project. *J Pediatr* 1998;132(1):57-63.
57. Finn L, Young T, Palta M, **Fryback DG**. Sleep-disordered breathing and self-reported general health status in the Wisconsin Sleep Cohort Study. *Sleep*, 1998; 21(7):701-706.
58. Russell LB, **Fryback DG**, Sonnenberg FA. Is the societal perspective in cost-effectiveness analysis useful for decision makers? *Jt Comm J Qual Improv* 1999;25(9):447-54.
59. Craig BA, **Fryback DG**, Klein R, Klein BE. A Bayesian approach to modelling the natural history of a chronic condition from observations with intervention. *Stat Med* 1999;18(11):1355-71.
60. Cruickshanks KJ, **Fryback DG**, Nondahl DM, Robinson N, Keesey U, Dalton DS, et al. Treatment choice and quality of life in patients with choroidal melanoma. *Arch Ophthalmol* 1999;117(4):461-7.
61. Rosenberg MA, **Fryback DG**, Lawrence WF. Computing population-based estimates of health-adjusted life expectancy. *Med Decis Making* 1999;19(1):90-7.
62. Swan JS, **Fryback DG**, Lawrence WF, Sainfort F, Hagenauer ME, Heisey DM. A time-tradeoff method for cost-effectiveness models applied to radiology. *Med Decis Making* 2000;20(1):79-88.
63. Smith JE, Winkler RL, **Fryback DG**. The first positive: Computing positive predictive value at the extremes. *Annals of Internal Medicine* 2000; 132:804-809.
64. Akehurst R, Anderson P, Brazier J, Brennan A, Briggs A, Buxton M, Cairns J, Calvert N, Claxton K, Dixon S, **Fryback D**, Gallivan S, Green C, Lloyd A, McCabe C, Mitchell A, Nicholl J, O'Brien B, Roberts J, Sculpher M, Severens H, Sullivan S, Veenstra D. Decision analytic modeling in the economic evaluation of health technologies-A consensus statement. *Pharmacoeconomic*, 2000; 17(5):443-444.
65. Rosenberg MA, **Fryback DG**, Katz DA. A statistical model to detect DRG upcoding. *Health Services and Outcomes Research Methodology*, 2000; 1:233-252. (note actually appeared in print 2001).
66. **Fryback DG**, Chinnis JO, Ulvila, J. Bayesian cost-effectiveness analysis: An example using the GUSTO trial. *International Journal of Technology Assessment in Health Care*, 2001;17(1):83-97.
67. **Fryback DG**, Stout NK, Rosenberg MA. An Elementary Introduction to Bayesian Computing Using WinBUGS. *International Journal of Technology Assessment in Health Care*, 2001;17(1):98-113.
68. Winkler RL, Smith JE, **Fryback DG**. The role of informative priors in zero-numerator problems: Being conservative versus being candid. *The American Statistician*, 2002; 56(1):1-4.
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#### Short Courses:

“Introduction to Bayesian Data Analysis and Computing”, (with MA Rosenberg, NK Stout).  
Annual Meeting of the Society for Medical Decision Making, Reno, NV, October 3, 1999  
Annual Meeting of the Society for Medical Decision Making, Cincinnati, OH, Sept 24, 2000. (Won “Best Short Course” award, first year this award given).  
Annual Meeting of the Society for Medical Decision Making, San Diego, CA, Oct. 21, 2001.  
Annual Meeting of the Society for Medical Decision Making, Baltimore, MD, Oct 20, 2002.

“Introduction to Bayesian Analysis and Computing”, (with MA Rosenberg, NK Stout).  
2<sup>nd</sup> European Conference on Economics of Cancer, Brussels, Sept. 3, 2000.

“Introduction to Bayesian Approaches to Health Economics and Outcomes Research” (with AH O’Hagan, B Luce). International Society for Pharmacoeconomics and Outcomes Research, Crystal City, VA, May 18, 2003.

“Introductory Bayesian Data Analysis in Health and Medicine” (with Marjorie Rosenberg), Centers for Disease Control and Prevention, July 30, 2003, Atlanta, GA. (over 100 attendees)

“Introductory Bayesian Data Analysis in Health and Medicine.” Methods conference, International Society for Quality of Life Research, Boston, MA, June 27, 2004.

“Introductory Bayesian Data Analysis in Health and Medicine.” Annual Scientific Meeting, International Society for Quality of Life Research, San Francisco, CA, October 19, 2005

“Roots—a deep history of the field of decision making” (with Daniel Albert). Society for Medical Decision Making,  
Atlanta, GA, October 17, 2004  
San Francisco, CA, October 21, 2005

**Other:**

Editorial Board, *Health Services Research* (term 1998-2003)

Editorial Board, *Health Services and Outcomes Research Methodology* (1998- 2007)

Referee for papers appearing in:

Non-medical journals:

*Operations Research*

*Management Science*

*IEEE Transactions on Systems, Man and Cybernetics*  
*Science*

*Health Psychology*

*Psychological Bulletin*

*Journal of Mathematical Psychology*

Medical journals:

*American Journal of Cardiology*

*American Journal of Managed Care*

*American Journal of Roentgenology*

*Annals of Internal Medicine*

*Archives of Ophthalmology*

*Health Services Research*

*Health Services and Outcomes Research Methodology*

*International Journal of Technology Assessment in Health Care*

*JAMA*

*Journal of General Internal Medicine*

*Medical Decision Making* (Editor-in-Chief, 1986-88)

*Medical Care*

*Quality of Life Research*

*Radiology*

*Social Science and Medicine*

Reviewer for research proposals:

Agency for Healthcare Research and Quality (formerly AHCPR/NCHSR)

National Science Foundation (Decision Making; Computer Science)

NIH Division of Research Grants (Radiology Section)

National Cancer Institute

National Library of Medicine

Robert Wood Johnson Foundation