

## CURRICULUM VITAE

### Edward Hance Shortliffe, MD, PhD, MACP, FACMI, FIAHSI

- [work] Chair Emeritus and Adjunct Professor, Department of Biomedical Informatics  
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Born: Edmonton, Alberta, Canada  
Date of birth: 28 August 1947  
Citizenship: U.S.A. (naturalized - 1962)  
Spouse: Vimla L. Patel, PhD

#### Education

From	To	School/Institution	Major Subject, Degree, and Date
9/62	6/65	The Loomis-Chaffee School, Windsor, CT.	High School
9/65	7/66	Gresham's School, Holt, Norfolk, U.K.	Foreign Exchange Student
9/66	6/70	Harvard College, Cambridge, MA.	Applied Math and Computer Science, A.B., June 1970
9/70	1/75	Stanford University, Stanford, CA	PhD, Medical Information Sciences, January 1975
9/70	6/76	Stanford University School of Medicine	MD, June 1976.
7/76	6/77	Massachusetts General Hospital, Boston, MA	Internship in Internal Medicine
7/77	6/79	Stanford University Hospital, Stanford, CA	Residency in Internal Medicine

#### Honors

Graduation Magna Cum Laude, Harvard College, June 1970

Medical Scientist Training Program (MSTP), NIH-funded Stanford Traineeship, September 1971 - June 1976

[Grace Murray Hopper Award](#) (Distinguished computer scientist under age 30), *Association for Computing Machinery*, October 1976

Research Career Development Award, *National Library of Medicine*, July 1979—June 1984

Henry J. Kaiser Family Foundation Faculty Scholar in General Internal Medicine, July 1983—June 1988

Young Investigator Award, *Western Society for Clinical Investigation*, February 1987

Elected Member, National Academy of Medicine (formerly Institute of Medicine), *National Academies of Sciences, Engineering, and Medicine*, 1987

Elected Fellow, *Association for the Advancement of Artificial Intelligence (AAAI)*, 1990

Master, *American College of Physicians*, November 2002

National Associate, *National Academies of Sciences, Engineering, and Medicine*, Washington, DC, December 2004

Appointed Rolf H. Scholdager Professor of Biomedical Informatics (endowed chair), *Columbia University*, June 2005

[Morris F. Collen Award for Distinguished Contributions to Medical Informatics](#), *American College of Medical Informatics (ACMI)*, November 2006

Selected as “Phoenix 50 Influential Leader”, *Phoenix Business Journal*, October 2007

Listed annually in *Who’s Who in America*

Commencement Speaker and Honorary Doctor of Science, *State University of New York, Downstate Medical Center*, May 2013

Elected Founding Member, International Academy of Health Sciences Informatics (IAHSI), International Medical Informatics Association, May 2017

Marquis Who’s Who Lifetime Achievement Award, May 2017

Convocation Speaker and Honorary Doctorate, Telfer School, University of Ottawa, Ottawa, Ontario, Canada, June 2017

[François Grémy Award of Excellence](#), International Medical Informatics Association (IMIA), October 2021.

Annual thesis competition named the [Edward H Shortliffe Doctoral Dissertation Award](#), American Medical Informatics Association (AMIA), November 2022

Awardee, *The Academy Plaque for Exceptional Service to the Academy*, New York Academy of Medicine, September 2023

Awardee, [Walsh McDermott Medal](#) for Distinguished Service to the National Academy of Medicine and to the National Academies of Sciences, Engineering, and Medicine, October 2023

### Licensure

National Board of Medicine Examiners, USMLE #31441348, Certified April 1977

California State Medical Board, License G-035737, September 1977— (inactive since 2009)

Arizona Medical Board, License #37630, October 2007 – (inactive since 2012)

Diplomate, American Board of Internal Medicine, Certificate #073613, September 1979 (unlimited)

### Named Lectureships

October 1983      Kauffman Memorial Lecture, College of Pharmacy, The Ohio State University, Columbus, Ohio

March 1985      Jacob Marschak Interdisciplinary Colloquium on Mathematics in the Behavioral Sciences, UCLA, Los Angeles, California.

May 1985      Joseph Leiter Lecture, Annual Meeting, Medical Library Association, New York, New York

February 1987      Young Investigator Award Lecture, Western Society for Clinical Investigation, Carmel, CA.

February 1988      George and Sandra Forsythe Memorial Lectures, Computer Science Department, Stanford University, Stanford, California.

April 1988	Audio-Digest Annual Lectureship, Congress on Continuing Medical Education, Los Angeles, California.
June 1994	19th Annual Eugene Pendergrass Lectureship, Department of Radiology, University of Pennsylvania School of Medicine, Philadelphia, Pennsylvania.
May 1996	Hurst Brown Professorship, Toronto General Hospital, University of Toronto, Toronto, Ontario.
October 1995	Richard M. Polaschek Lectureship in Medical Informatics, Johns Hopkins University School of Medicine, Baltimore, Maryland.
May 1996	C. Everett Koop Lectureship in Medical Informatics, Dartmouth University School of Medicine, Hanover, New Hampshire.
April 1997	Cosgrove Lecture, Annual Clinical Meeting, American College of Obstetrics and Gynecology, Las Vegas, Nevada.
April 1997	Marsden S. Blois Lectureship in Medical Informatics, University of California San Francisco, San Francisco, California.
June 1998	Donald AB Lindberg Lecture in Medical Informatics, University of Pittsburgh School of Medicine, Pittsburgh, Pennsylvania
September 2005	Priscilla Mayden Lecture, Midcontinental Meeting of the Medical Library Association, University of Utah, Salt Lake City, Utah
February 2007	James Coward Lecture, Symposium on Information Technology and Communications in Health, University of Victoria, Victoria, British Columbia
September 2007	Shirley Agnos Arizona Town Hall Lecture, Phoenix, Arizona
June 2008	Ted and Janice Smith Distinguished Lecture, University of California Irvine, Irvine, California
March 2009	John Dickmeyer Lecture, Renal Physicians Association Meeting, Baltimore, MD
October 2009	Julius S. Aronofsky Lecture, UT Southwestern School of Medicine, Dallas, TX
October 2011	Antonija Prelec Memorial Lecture, School of Medicine, Stony Brook University, Stony Brook, NY.
March 2016	Crawford Long Lectureship, Department of Anesthesiology, Emory School of Medicine, Atlanta, GA.
June 2023	The Howard Bleich Lecture, Division of Clinical Informatics (DCI), Beth Israel Deaconess Medical Center and Harvard University, Cambridge, MA.

### **Employment, Research, and Academic Positions**

2016—2020	Senior Physician Executive Consultant, IBM Watson Health, Cambridge, MA (part-time)
2013—	Adjunct Professor of Population Health Sciences (Division of Health Informatics), Weill Cornell Medical College, New York, NY.
2013—2020	Member, Center for Healthcare Informatics and Policy (CHiP), Weill Cornell Medical College, New York, NY
2012—2018	Senior Advisor to the Dean and Executive Vice Provost, College of Health Solutions, Arizona State University, Phoenix, AZ
2012—2017	Scholar in Residence, New York Academy of Medicine, New York City

2009—2012 President and Chief Executive Officer, American Medical Informatics Association, Bethesda, Maryland

2009—2011 Professor of Biomedical Informatics with tenure, School of Biomedical Informatics, University of Texas Health Sciences Center at Houston, Houston, Texas

2009 Affiliated Professor, School of Life Sciences, Arizona State University, Tempe, Arizona

2007—2009 Professor of Biomedical Informatics with tenure, School of Computing and Informatics, Fulton School of Engineering, Arizona State University, Phoenix, Arizona

2009—2012 Adjunct Professor of Biomedical Informatics

2012—2018 Professor of Biomedical Informatics, College of Health Solutions, Arizona State University, Phoenix, AZ

2018— Adjunct Professor of Biomedical Informatics, College of Health Solutions, Arizona State University, Phoenix, AZ

2007—2009 Professor of Basic Medical Sciences, University of Arizona College of Medicine – Phoenix, in partnership with Arizona State University

2007—2009 Professor of Medicine, University of Arizona College of Medicine

2007—2008 Physician Member, University Physicians' Healthcare, Tucson, Arizona

2007—2008 Founding Dean, University of Arizona College of Medicine – Phoenix, in partnership with Arizona State University

2005—2007 Rolf H. Scholdager Professor and Chair, Department of Biomedical Informatics, College of Physicians and Surgeons, Columbia University

2002—2007 Deputy Vice President for Information Technology (Columbia University Medical Center) and Senior Associate Dean for Information Technology (College of Physicians and Surgeons), Columbia University

2000—2020 Editor-in-Chief, *Journal of Biomedical Informatics*, Elsevier Science (formerly Academic Press)

2000—2007 Professor with tenure and Chair, Department of Biomedical Informatics, College of Physicians and Surgeons, Columbia University

2007— Chair Emeritus and Adjunct Professor

2000—2007 Professor of Medicine, College of Physicians and Surgeons, Columbia University

2000—2007 Professor of Computer Science (by courtesy), College of Engineering, Columbia University

2000—2007 *Director*, Center for Advanced Information Management (NYSTAR-funded Center for Advanced Technology), New York Science and Technology Academic Research Program, Columbia University

2000—2007 Director, Medical Informatics Services, New York Presbyterian Healthcare System

2000—2002 Associate Vice President for Strategic Information Planning, Health Sciences Division, Columbia University

1995—2000 Associate Dean for Information Resources and Technology, Stanford University School of Medicine

1994—1995 Fellow, Center for Advanced Studies in the Behavioral Sciences, Stanford University.

1993—1995 Associate Chair of Medicine for Primary Care, Department of Medicine, Stanford University School of Medicine.

- 1992— 1997 Principal Investigator, CAMIS Computing Resource (National Library of Medicine), Stanford University, Stanford, California.
- 1990—2000 Professor of Medicine with tenure (General Internal Medicine and, after 1995, Medical Informatics), Stanford University School of Medicine, Stanford, California.
- 1990— 2000 Professor of Computer Science (by courtesy), Stanford University, Stanford, California.
- 1990— 1997 Director, Center for Advanced Medical Informatics at Stanford (CAMIS), Stanford University, Stanford, California.
- 1988—1993 Co-Director, Training Program in Health Services Research, Division of General Internal Medicine, Stanford University School of Medicine, Stanford, California.
- 1988—1995 Chief, Division of General Internal Medicine, Department of Medicine, Stanford University School of Medicine, Stanford, California.
- 1988—1993 Head, Section on Medical Informatics, Department of Medicine, Stanford University School of Medicine, Stanford, California.
- 1985—1990 Associate Professor of Medicine with tenure (General Internal Medicine), Stanford University School of Medicine, Stanford, California.
- 1985—1990 Associate Professor of Computer Science (by courtesy), Stanford University, Stanford, California.
- 1985—1992 Principal Investigator, SUMEX-AIM Computing Resource (Division of Research Resources and National Library of Medicine, NIH), Stanford University, Stanford, California.
- 1981—2000 Director, Medical Information Sciences Training Program, Stanford University, Stanford, California.
- 1986—1987 Visiting Associate Professor of Medicine and of Computer and Information Sciences, University of Pennsylvania, Philadelphia, Pennsylvania.
- 1980—1985 Co-Principal Investigator and Medical Liaison, SUMEX-AIM Computing Resource, Stanford University, Stanford, California.
- 1979—1985 Assistant Professor of Computer Science (by courtesy), Stanford University, Stanford, California.
- 1979—1985 Assistant Professor of Medicine (General Internal Medicine), Stanford University School of Medicine, Stanford, California.
- 1971—1975 Doctoral Research, Medical Scientist Training Program, Stanford University School of Medicine, Stanford, California (Preceptor: Stanley N. Cohen, M.D.)
- 1970—1971 System Designer, Automated Health Systems, Inc.; Burlingame, California and Wakefield, Massachusetts (summer employment).
- 1968—1969 Research Assistant, Laboratory of Computer Science, Massachusetts General Hospital, Boston, Massachusetts (Preceptors: Robert A. Greenes, M.D., Ph.D. and G. Octo Barnett, M.D.)

#### **Committees, Boards, and Consultancies**

- 2022—2023 Chair, Scientific Advisory Board, *MI1 Inc.*, San Diego County, California.
- 2021—2022 Member, Selection Committee, Healthy Longevity Catalyst Award Competition, *National Academy of Medicine*, Washington, DC

- 2021— Advisory Committee, American Board of Artificial Intelligence in Medicine, Orange, CA
- 2020— Advisory Committee, Artificial Intelligence in Health Care, Ekagrid University (India)
- 2020—2021 Chair, *Committee on Implications of Discarded Weight-Based Drugs*, National Academies of Sciences, Engineering, and Medicine, Washington, DC.
- 2018—2020 Chair, Membership Committee, *National Academy of Medicine*, Washington, DC
- 2017 Consultant in Biomedical Informatics, School of Medicine, *SUNY Upstate Medical University*, Syracuse, New York
- 2017—2019 Advisory Board, US Pharma Studies, Inc., Tempe, AZ
- 2016— Member, Head of School's Council, *Loomis-Chaffee Institute*, Windsor CT.
- 2016—2018 Chair, *NAS Committee on Developing a Smarter National Surveillance System for Occupational Safety and Health in the 21<sup>st</sup> Century*, National Research Council, National Academies of Sciences, Engineering, and Medicine, Washington, DC.
- 2015—2023 Member, Medical Advisory Board, *98point6, Inc.*, Seattle, WA.
- 2015 Consultant in Biomedical Informatics, Hood College, Frederick, MD
- 2014—2016 Member, Healthcare Advisory Board, QTS, Inc., Atlanta, GA  
Formerly *Carpathia, Inc.*, Dulles, VA
- 2014—2015 Member, Healthcare Advisory Board, *Pxyl, Inc.*, Scottsdale, Arizona.
- 2013—2016 *Board of Trustees*, New York Academy of Medicine, New York, NY  
(Vice Chair 2013-15 )
- 2013—2014 Member, *Committee on Identifying and Prioritizing New Preventive Vaccines for Development* (Phase III), Institute of Medicine (now National Academy of Medicine), National Academies of Sciences, Engineering, and Medicine, Washington, DC.
- 2013 Consultant in the Evaluation of the Department of Public Health, *Weill Cornell Medical College*, New York, NY.
- 2013 Consultant in Research Cyberinfrastructure, *University of California San Diego*, San Diego, CA.
- 2013 Consultant in Biomedical Informatics, *Mayo Clinic*, Rochester, MN.
- 2012 Consultant in Biomedical Informatics, *University of Amsterdam Medical Center*, Amsterdam, the Netherlands
- 2012—2013 Member, *Committee on Developing a Decision-Support Tool for Prioritizing New Vaccines* (Phase II) [Report: *Ranking Vaccines: A Prioritization Software Tool*, October 2013], Institute of Medicine (now National Academy of Medicine), National Academies of Sciences, Engineering, and Medicine, Washington, DC.
- 2012—2018 Member, *Committee on National Statistics (CNSTAT)*, National Research Council, the National Academies of Sciences, Engineering, and Medicine, Washington, DC
- 2012 Consultant in Biomedical Informatics, *Georg-August-Universität*, Göttingen, Germany
- 2012—2015 External Advisory Board, *Center for Advanced Information Management (CAIM)*, New York State Center for Advanced Technology, Columbia University in the City of New York

- 2012—2019      Advisory Board, *Health Record Banking Alliance*, Arlington, VA.  
Chairman of the Board: 2013—2018
- 2011—2012      Consultant, *Committee on Developing a Decision-Support Tool for Prioritizing New Vaccines* (Phase I), Institute of Medicine (now National Academy of Medicine), National Academies of Sciences, Engineering, and Medicine, Washington, DC.
- 2011—2015      Section Liaison, Section 01 (Physical, Mathematical, Computer, Information, and Engineering Sciences), Membership Committee, *Institute of Medicine (now National Academy of Medicine)*, National Academies of Sciences, Engineering, and Medicine, Washington, DC [Section Chair, 2013-2015]
- 2011              Consultant in Biomedical Informatics, School of Medicine, *Stony Brook University*, Stony Brook, New York
- 2011—2013      Board of Directors, *Friends of the National Library of Medicine*, Washington, DC.
- 2011              Consultant in Biomedical Informatics, *University of Rochester School of Medicine*, Rochester, NY
- 2011              Consultant in Biomedical Informatics, *University of Connecticut School of Medicine*, Storrs and Farmington, CT
- 2010—2022      External Advisory Board, Clinical and Translational Science Institute, University of California San Diego, La Jolla, CA.
- 2010—2011      Chair, Committee on Future Information Architectures, Processes, and Strategies for the Centers for Medicare and Medicaid Services. *National Research Council*, National Academies of Sciences, Engineering, and Medicine, Washington, DC
- 2010              Consultant in Biomedical Informatics, School of Medicine, University of Cincinnati, Cincinnati, OH
- 2009—2013      External Advisory Board, Clinical and Translational Science Institute, University of Florida, Gainesville, FL.
- 2009—2011      Keck Faculty Affiliate, *Gulf Coast Consortium*, Houston, TX
- 2009—2015      Journal Oversight Committee, JAMA and the JAMA Network, *American Medical Association*, Chicago, IL (Chair 2012-2015)
- 2008—2009      Search Committee for Editor, *Annals of Internal Medicine*, American College of Physicians, Philadelphia, PA
- 2008              Consultant in Biomedical Informatics, *University of Florida School of Medicine*, Gainesville, FL
- 2008              Consultant in Biomedical Informatics, School of Medicine, *University of California Irvine*, Irvine, CA
- 2008              Consultant in Biomedical Informatics, School of Medicine, *University of California San Diego*, San Diego, CA
- 2007—2009      Member, Board of Directors, *The Wellness Community Central Arizona*, Phoenix, AZ
- 2007—2008      Member, Board of Directors, *Downtown Phoenix Partnership*, Phoenix, AZ
- 2006—2021      External Advisory Board, Institute for Translational and Health Sciences, University of Washington (CTSA), Seattle, WA.
- 2006              Chair, Review Committee regarding the Computer Science and Telecommunications Board, Division of Engineering and Applied Sciences, *National Research Council*, Washington, DC

- 2004—2007 Member, Biomedical Informatics Advisory Committee, Center for Public Health Informatics, *Centers for Disease Control and Prevention*, Atlanta, GA
- 2005 Consultant in Biomedical Informatics, *University of Pennsylvania School of Medicine*, Philadelphia, PA
- 2005—2008 Consultant, Radiological Event Medical Management (REMM) Program, *Office of Mass Casualty Planning and Office of Public Health Emergency Preparedness (OPHEP)*, Department of Health and Human Services, Washington, DC
- 2005 Consultant in Biomedical Informatics, *Johns Hopkins University School of Medicine*, Baltimore, MD,
- 2005—2007 Member, Search Committee for a Director of the National Center for Public Health Informatics, *Centers for Disease Control and Prevention*, Atlanta, GA.
- 2005—2006 Nominations Committee, *American College of Physicians*
- 2004—2007 Member of Oversight Committee, Division of Engineering and Physical Sciences (DEPS), *National Research Council*, Washington, DC
- 2004—2006 Member, Biomedical Informatics Expert Panel (BIEP), *National Center for Research Resources*, National Institutes of Health, Bethesda, MD
- 2004 External Review Committee (Advisory to the Director), Chief Information Officer and Director of the Center for Information Technology, National Institutes of Health, Bethesda, MD
- 2004 Chair, Advisory Committee on Health Information Technology, *Health Affairs*, New York, NY
- 2003—2007 Board of Directors (Member of Compensation Committee), *Medco Health Solutions, Inc.*, Franklin Lakes, NJ.
- 2003—2009 Advisory Committee, Office of Academic Computing, *Charles Drew Medical School*, Los Angeles, CA
- 2003—2009 Scientific Advisor, *Pritzker Consortium*, Chicago, IL
- 2013—2016 Board of Trustees, *New York Academy of Medicine*, New York, NY. (Chair of Library and Awards Committees; Chair of Program Planning Committee on Health Communication and Health Literacy; Vice-Chair, 2006-2011; Vice-Chair, 2013-2015; Search Committee for the President, 2006; Co-Chair, Nominations Committee of the Board, 2014-present)
- 2003—2011
- 2002—2006 Member, External Advisory Board, *Center for Information Technology Leadership (CITL)*, Partners Health and Harvard Medical School, Boston, MA.
- 2002—2004 Committee on National Need for Biomedical, Behavioral, and Clinical Sciences  
2008—2010 Researchers, *National Research Council*, National Academies of Sciences, Engineering, and Medicine, Washington, DC
- 2002—2003 Chair, Steering Committee on Electronic Scientific, Technical, and Medical Journal Publishing and Its Implications, *National Academies of Sciences, Engineering, and Medicine*, Washington, DC
- 2002—2003 Special Advisor and Member of the Board, *eHealth Initiative*, Washington, DC
- 2002—2003 Member, Health Communications Initiative Program Committee, *ACP Foundation*, Philadelphia, PA.
- 2001—2007 Member, Advisory Panel, *Pediatric Emergency Northeast Team (PEDNET)*, Regional Node of the National Pediatric Emergency Care Applied Research Network (PECARN).
- 2001—2003 Member, Committee on Science, Engineering, and Public Policy (COSEPUP), *National*



2005—2007 *Academy of Sciences*, Washington, D.C.

2001—2003 Elected Member, Executive Council, Institute of Medicine (IOM), *National Academy of Sciences*; Member of the Finance Subcommittee (Chair, 2002-2003).

2005—2007

2000—2004 Chairman, Organizing Committee, Medinfo2004 (7-11 September 2004, San Francisco), *International Medical Informatics Association*

2000—2010 External Advisory Committee, Biomedical and Health Informatics Program, *University of Washington*, Seattle, WA.

2000—2003 Member, National Committee on Vital and Health Statistics (NCVHS), *Department of Health and Human Services*, Washington, D.C.

2000—2002 Chair, PIER Steering Committee (Physicians' Information and Education Resource), *American College of Physicians*

2000—2010 Medical Advisory Board, *PatientKeeper, Inc.*, Boston, Massachusetts

2000—2012 Scientific Advisory Board, *Medexpert, Inc.*, Palo Alto, California

2000—2004 Scientific Advisory Board, *Clinician Support Technology, Inc.*, Framingham, Massachusetts

1998—2001 International Advisor, Medical Informatics Programme, *National University of Singapore*.

1998—1999 Committee on Enhancing the Internet for Medical Applications (Chair), Computer Science and Telecommunications Board, *National Research Council*, National Academies of Sciences, Engineering, and Medicine, Washington, DC

1997—1999 Section Liaison, Section 01 (Physical, Mathematical, Computer, Information, and Engineering Sciences), *Institute of Medicine (now National Academy of Medicine)*, National Academies of Sciences, Engineering, and Medicine, Washington, DC

1997—2002 President's Information Technology Advisory Committee (PITAC), *Executive Office of the President*, Washington, D.C.

1997—1998 Advisory Committee on Internet-2, *Internet 2 Academic Consortium*

1997—2005 Scientific Advisory Board, *Surromed, Inc.*, Palo Alto, California

1997—2006 Board of Directors, *Friends of the National Library of Medicine*

1996—1997 Planning Panel on International Programs, *National Library of Medicine*

1996—1998 Consulting Committee to the Chemical/Biological Incident Response Force, US Marine Corps (Quantico and Camp Lejeune), *United States Department of Defense*

1996—1999 University Advisory Board, *Stanford University*

1996—2000 Board of Directors, *Mcard, Inc.*, Sunnyvale, CA.

1996—2002 Board of Regents, *American College of Physicians*  
 Research Center Advisory Committee (1997— 1999)  
 Publications Committee (Chair, 1997— 2000)  
 PIER Steering Committee (Chair, 2000—2002)

1996—2001 Chair, Scientific Advisory Board, *Caresoft, Inc.*, Sunnyvale, CA.

1995—2003 Public Policy Committee, *American Medical Informatics Association* [Committee Chair: 1995-96]

- 1995—1997 Final Judges' Committee for Health Care, *The Global Information Infrastructure Awards* [formerly NII Awards], Santa Monica, CA.
- 1994—2002 Publications Committee, *American College of Physicians* (Chair, 1997—2000)
- 1993—1998 Board of Directors, *Smart Valley, Inc.*, Palo Alto, CA.
- 1993—1994 Board of Directors, *American Medical Informatics Association*
- 1992—1996 Membership Committee, *Institute of Medicine (now National Academy of Medicine)*; [Section 1 Chair, 1994-96.]
- 1993 Co-chairman (with C. Everett Koop, M.D.), Workshop on the National Information Infrastructure and Health Care, *National Research Council*, Washington, D.C.
- 1992—1993 Committee on Regional Health Data Networks, *Institute of Medicine*
- 1992—1996 Advisory Board, Health Sciences Computer Education Project, *Friends of the National Library of Medicine*
- 1992—1994 Scientific Advisor, *Teknekron Corporation*, Menlo Park, CA.
- 1991—1995 Scientific Advisory Board, *AIDS Community Research Consortium*, Redwood City, CA.
- 1991—1996 Computer Science and Telecommunications Board, *National Research Council*, National Academy of Sciences.
- 1991—1992 Federal Networking Advisory Council, *National Science Foundation* [Member of Steering Committee].
- 1990—1996 *American College of Medical Informatics*: President-Elect (1990-92), President (1992-94), Past-President (1994-96).
- 1990—1994 Appointments and Promotions Committee, Stanford University School of Medicine; Associate Chair, 1991-92; Chair, 1992-94.
- 1990—1993 Committee on Libraries (C-LIB), Stanford University.
- 1989—1991 Committee to Improve the Patient Record, *Institute of Medicine*. [Chair, Subcommittee on Strategies for Implementation]
- 1988—1991 *Society for Medical Decision Making*: President-Elect (1988-89), President (1989-90), Past-President (1990-91).
- 1988—1992 TyPE Advisory Council, *InterStudy/Quality Quest*, Excelsior, Minnesota.
- 1988—1991 Board of Directors, *American Medical Informatics Association*.
- 1987—1993 Computer-Based Testing Advisory Panel, *National Board of Medical Examiners*.
- 1986—1991 Editorial Board, *BRS Colleague*, New York.
- 1986—1987 Consultant to the Search Committee in Medical Information Sciences, University of Pennsylvania School of Medicine, Philadelphia.
- 1985—1986 Chairman, Advisory Planning Panel on Medical Informatics, *National Library of Medicine*, Bethesda, Maryland.
- 1984—1986 Executive Board, *American College of Medical Informatics*.
- 1984—1990 Board of Directors, *Symposium on Computer Applications in Medical Care* (SCAMC, Inc.). President, 1988-1990.

- 1984—1986 Scientific Advisory Board, *Centre Mondial Informatique*, Paris.
- 1984—1987 Board of Councilors, *American Association for Artificial Intelligence*.
- 1984—1985 Steering Committee on Medical Information Sciences, *Association of American Medical Colleges*.
- 1983—1989 Technology Advisory Board, *Teknowledge, Inc.*, Palo Alto, California.
- 1983—1986 Committee on Academic Computing and Information Systems (C-ACIS), Stanford University.
- 1983—1988 Medical Informatics Subcommittee (formerly Telecommunications Subcommittee), *American College of Physicians*.
- 1982—1990 Board of Directors, *American Association for Medical Systems and Informatics* [Three terms: 1982-84, 1984-86, 1989-90].
- 1981—1983 Founder of Medical Subgroup (AAAI-M) and Medical Liaison, *American Association for Artificial Intelligence* (now *Association for the Advancement of Artificial Intelligence*)
- 1981—1985 Board of Trustees, *Society for Medical Decision Making* (two terms).
- 1981—1991 Member, Steering Committee, *Association for Advanced Technology in the Biomedical Sciences*.
- 1980—1984 Member, Biomedical Library Review Committee, *National Library of Medicine* (Chairman, July 1983 - June 1984).

#### **Elected Professional Memberships**

- 2018 Founding Fellow, *International Academy of Health Sciences Informatics, International Medical Informatics Association (IMIA)*
- 2003 Fellow, *New York Academy of Medicine*
- 2002 Master, *American College of Physicians (MACP)*
- 1993 Fellow, *American Association for the Advancement of Science (AAAS)*
- 1993 Member, *Association of American Physicians (AAP)*
- 1992 Member, *American Clinical and Climatological Association (ACCA)*
- 1991 Fellow, *American Institute for Medical and Biological Engineering (AIMBE)*
- 1991 Member, *Western Association of Physicians (WAP)*
- 1990 Fellow, *Association for the Advancement of Artificial Intelligence (AAAI)*
- 1987 Member, *Institute of Medicine (now National Academy of Medicine), National Academies of Sciences, Engineering, and Medicine (NASEM)*
- 1986 Member, *American Society for Clinical Investigation (ASCI)*
- 1984 Founding Fellow, *American College of Medical Informatics (ACMI)*
- 1984 Member, *National Academies of Practice (NAP)*
- 1984 Fellow, *American College of Physicians (FACP)*

1983 Member, *Western Society for Clinical Investigation (WSCI)*

#### Other Professional Memberships

2008— *American Medical Association*

1995—1997 *American Educational Research Association*

1992—2001 *Computer-Based Patient Record Institute (CPRI)*

1991—2007 *The Internet Society*

1988— *American Medical Informatics Association (AMIA)*

1985—2010 *IEEE Computer Society*

1983—2000 *Society for General Internal Medicine (SGIM)* (Formerly SREPCIM)

1983—1993 *American Federation for Clinical Research (AFCR)*

1980—2012 *Society for Medical Decision Making (SMDM)*

1980— 2020 *American Association for Artificial Intelligence (AAAI)*

1978— *American College of Physicians (ACP)* (Fellowship in 1984, Mastership in 2002)

1978—1990 *American Association for Medical Systems and Informatics} (AAMSI)* (formerly Society for Computer Medicine)

1972—2020 *Association for Computing Machinery (ACM)*

#### Doctoral Student Supervision

Paul Cohen Computer Science and Psychology (Stanford) - 1983 (committee)  
`Heuristic Reasoning Under Uncertainty: An Artificial Intelligence Approach.'

Gregory F. Cooper Medical Information Sciences (Stanford) - 1984 (advisor)  
`NESTOR: A Computer-Based Medical Diagnostic Aid that Integrates Causal and Probabilistic Knowledge.'

John C. Kunz Medical Information Sciences (Stanford) - 1984 (committee)  
`Use of Artificial Intelligence and Simple Mathematics to Analyze a Physiologic Model.'

David E. Smith Computer Science (Stanford) - 1985 (committee)  
`Controlling Inference.'

Glenn D. Rennels Medical Information Sciences (Stanford) - 1986 (advisor)  
`A Computational Model of Reasoning From the Clinical Literature.'

Mark A. Musen Medical Information Sciences (Stanford) - 1987 (advisor)  
`Generation of Model-Based Knowledge-Acquisition Tools for Clinical Trial Advice Systems.'

Curtis P. Langlotz Medical Information Sciences (Stanford) - 1989 (advisor)  
`A Decision Theoretic Approach To Heuristic Planning.'

David Klein Computer and Information Sciences (University of Pennsylvania) - 1989 (advisor)  
`Interpretive Value Analysis.'

Thierry Barsalou Medical Information Sciences (Stanford) - 1990 (committee)

	'Toward Expert Database Systems: Integration of Object-Oriented Methods with a Relational Architecture.'
David Heckerman	Medical Information Sciences (Stanford) - 1990 (committee) 'Probabilistic Similarity Networks.' [ACM Doctoral Dissertation Award, 1990]
Holly Jimison	Medical Information Sciences (Stanford) - 1990 (advisor) 'A Representation for Gaining Insight into Clinical Decision Models.'
Eric Horvitz	Medical Information Sciences (Stanford) - 1990 (committee) 'Computation and Action Under Bounded Resources.'
R. Martin Chavez	Medical Information Sciences (Stanford) - 1990 (advisor) 'Architectures and Approximation Algorithms for Probabilistic Expert Systems.'
Brad R. Farr	Medical Information Sciences (Stanford) - 1991 (committee) 'Assessment of Preferences Through Simulated Decision Scenarios.'
Harold Lehmann	Medical Information Sciences (Stanford) - 1991 (advisor) 'A Bayesian Computer-Based Approach to the Physician's Use of the Clinical Research Literature.'
Henri Jaap Suermondt	Medical Information Sciences (Stanford) - 1992 (committee) 'Explanation in Bayesian Belief Networks.'
John Egar	Medical Information Sciences (Stanford) - 1994 (committee) 'Construction of Normative Decision Models Using Abstract Graph Grammars'
Geoffrey Rutledge	Medical Information Sciences (Stanford) - 1995 (committee) 'Dynamic Selection of Models.'
Lucila Ohno-Machado	Medical Information Sciences (Stanford) - 1996 (committee) 'Hierarchical Neural Networks: Applications in Survival Analysis'
Gretchen Purcell	Medical Information Sciences (Stanford) - 1996 (advisor) 'Contextual Document Models for Searching the Clinical Literature'
Alex Poon	Medical Information Sciences (Stanford) - 1996 (committee) 'Optimizing the Task of Menu Selection for Large Controlled Vocabularies'
Keith E. Campbell	Medical Information Sciences (Stanford) - 1997 (advisor) 'Distributed Development of a Logic-Based Controlled Medical Terminology'
Gillian D. Sanders	Medical Information Sciences (Stanford) - 1998 (committee) 'Automated Creation of Clinical-Practice Guidelines from Decision Models'
Cecil Huang	Medical Information Sciences (Stanford) - 1999 (committee) 'Intelligent Alarms for Monitoring'
Wanda M. Pratt	Medical Information Sciences (Stanford) - 1999 (committee) 'Dynamic Knowledge-Based Hierarchical Text Categorization'
Diane Oliver	Biomedical Informatics (Stanford) – 2000 (committee) 'Managing Local Divergence of a Shared Clinical Vocabulary''
Daniel C. Berrios	Biomedical Informatics (Stanford) – 2001 (committee) 'Methods for Semi-Automated Index Generation for High Precision Information Retrieval'
Dongwen Wang	Medical Informatics (Columbia) – 2003 (advisor) 'A Generic Execution Model for Sharing of Computer-Interpretable Clinical Practice Guidelines'

Trevor Cohen	Biomedical Informatics (Columbia) – 2007 (committee) 'Augmenting Expertise: Computer-enhanced Clinical Comprehension in Psychiatry'
Knarig Arabshian	Computer Science (Columbia) – 2008 (committee) 'Ontology-based Context-aware Service Discovery in a Globally Distributed Network'
Akshay Vankipuram	Biomedical Informatics (Arizona State University) – 2018 (committee) 'Utilization of automated location tracking for clinical workflow analytics and visualization'
Zongwei Zhou	Biomedical Informatics (Arizona State University) – 2021 (committee) 'Integrating interactive learning and transfer learning for digital imaging'

### Editorial Boards

2021---	<i>BMJ Health &amp; Care Informatics</i> , BMJ Publishing Group
2021—	<i>Biomedical Engineering Advances</i> , Elsevier Science
2001—2020 2021—	<i>Journal of Biomedical Informatics</i> , Elsevier Science, <i>Editor in Chief</i> <i>Editor Emeritus</i>
2020---	<i>Intelligence-Based Medicine</i> , Elsevier Science, <i>Honorary Editor</i>
2002—2007	<i>Informatica Journal</i> , Fundacion de Informatica Medica, Miami, Florida
1998—2021	<i>Information Systems Frontiers</i> , Springer
1998—2021	<i>American Journal of Medicine</i> , Elsevier Science
1997—2001	<i>International Journal of Medical Informatics</i> , Elsevier
1993—1995	<i>Journal of the American Medical Informatics Association</i> , Hanley and Belfus
1991—1994	<i>Annals of Internal Medicine</i> , American College of Physicians
1991—1992	<i>Internet News: The Newsletter of the Internet Society</i> (Contributing Editor for biomedical community)
1989—2017	<i>Artificial Intelligence in Medicine</i> , Elsevier Science
1986—2000	<i>Computers and Biomedical Research</i> , Academic Press
1986—2003	<i>Methods of Information in Medicine</i> , Schattauer
1986—1988	<i>Medical Decision Making</i> , Hanley and Belfus, Inc.
1984—1991	<i>Lecture Notes in Medical Informatics</i> , Springer-Verlag
1983—1995	<i>Research Notes in Artificial Intelligence</i> , Pitman Advanced Publishing Program
1980—1985	<i>Medical Decision Making</i> , Birkhauser Boston, Inc.
1978—1993	<i>Computer Methods and Programs in Biomedicine</i> , Elsevier

### Editorial Advisory Boards

2000—2007	<i>Biomedical Frontiers</i> (College of Physicians and Surgeons, Columbia University)
1999—2000	<i>Annual Reviews, Inc.</i> , Palo Alto, California.

1990—1991	<i>Outcomes Measurement and Management</i> , The Zitter Group, San Francisco
1985—1992	<i>M.D. Computing</i> , Springer Verlag
1999—2001	<i>M.D. Computing</i> , Springer Verlag
1984—1986	<i>Health Care Instrumentation</i> , Excerpta Medica
1983—2000	<i>Stanford Medicine</i> (Medical Center and Alumni Magazine)

## Publications

### Books

- Shortliffe EH. **Computer-Based Medical Consultations: MYCIN**, Elsevier/North Holland, New York, 1976. Japanese language version by Bunkodo Blue Books, Tokyo, 1981 (translated by T Kaminuma). <https://doi.org/10.1016/B978-0-444-00179-5.X5001-X>
- Buchanan, BG, Shortliffe EH. (eds). **Rule-Based Expert Systems: The MYCIN Experiments of the Stanford Heuristic Programming Project**. Reading, MA: Addison-Wesley, 1984. <https://dl.acm.org/doi/10.5555/1096485>
- Clancey WJ, Shortliffe EH (eds). **Readings in Medical Artificial Intelligence: The First Decade**. Reading, MA: Addison-Wesley, 1984. <https://dl.acm.org/doi/book/10.5555/1124>
- Shortliffe EH (ed), Perreault L (ed), Wiederhold G (assoc ed), Fagan LM (assoc. ed). **Medical Informatics: Computer Applications in Health Care** (textbook). Reading, MA: Addison-Wesley, 1990.
- Shortliffe EH, Wulfman CE, Rindfleisch TC, Carlson RW. **An Integrated Oncology Workstation**. Bethesda, MD: National Cancer Institute, 1991. [Received the 1991-92 Award of Excellence from The Society for Technical Communication.]
- Committee on Improving the Patient Record (member and subcommittee chair). **The Computer-Based Patient Record: An Essential Technology for Health Care**. Washington, DC: National Research Council, National Academies Press, 1991 (revised 1997).
- Committee on Regional Health Data Networks (member). **Health Data in the Information Age: Use, Disclosure, and Privacy**. Washington, DC: National Research Council, National Academies Press, 1994.
- Shortliffe EH (ed), Perreault L (ed), Wiederhold G (assoc. ed), Fagan LM (assoc. ed). **Medical Informatics: Computer Applications in Health Care and Biomedicine** (textbook). New York: Springer-Verlag, 2000. (2<sup>nd</sup> edition of #4, new publisher and title).
- Shortliffe EH, Sheehan JR, eds. **Networking Health: Prescriptions for the Internet**. Washington, DC: National Research Council, National Academies Press, 2000.
- Shortliffe EH (ed), Cimino JJ (assoc. ed.). **Biomedical Informatics: Computer Applications in Health Care and Biomedicine** (textbook). New York: Springer-Verlag, 2006. (3<sup>rd</sup> edition of #6). Translated into Mandarin as 生物医学信息学 (第三版), 2011.
- Shortliffe EH, Millett LI, eds. **Strategies and Priorities for Information Technology at the Centers for Medicare and Medicaid Services**. Washington, DC: National Research Council, National Academies Press, 2012.
- Committee on National Statistics (member). **Principles and Practices for a Federal Statistical Agency** (Fifth Edition). Washington, DC: National Academies Press, 2013.
- Committee on Identifying and Prioritizing New Preventive Vaccines for Development, Phase II. **Ranking Vaccines: A Prioritization Software Tool: Phase II**. Washington, DC: National Academies Press, 2013.
- Shortliffe EH (ed), Cimino JJ (assoc. ed.). **Biomedical Informatics: Computer Applications in Health Care and Biomedicine** (textbook). London: Springer-Verlag, 2014. (4<sup>th</sup> edition of #8)
- Committee on National Statistics (member). **Principles and Practices for a Federal Statistical Agency** (Sixth Edition). Washington, DC: National Academies Press, 2017.

16. Committee on Developing a Smarter National Surveillance System for Occupational Safety and Health in the 21<sup>st</sup> Century (Chair). **A Smarter National Surveillance System for Occupational Safety and Health in the 21<sup>st</sup> Century.** Washington, DC: National Academies Press, January 2018.
17. Committee on Implications of Discarded Weight-Based Drugs (Chair). **Medications in Single Dose Vials: Implications of Discarded Drugs.** Washington, DC: National Academies Press, February 2021.
18. Shortliffe EH (ed), Cimino JJ (ed), Chiang MF (assoc. ed). **Biomedical Informatics: Computer Applications in Health Care and Biomedicine** (textbook). London: Springer, 2021 (5<sup>th</sup> edition of #11). <https://doi.org/10.1007/978-3-030-58721-5>
19. Cohen TE, Patel VL, Shortliffe EH (eds). **Intelligent Systems in Medicine and Health: The Role of AI** (textbook). London: Springer, 2022. <https://doi.org/10.1007/978-3-031-09108-7>

### Study Reports

1. **The Computer-Based Patient Record: An Essential Technology for Health Care.** Washington, D.C.: Institute of Medicine, National Academy Press; 1991. <https://doi.org/10.17226/18459> - (Revised 1997). <https://doi.org/10.17226/5306> – Committee Member, Subcommittee Chair.
2. **Health Data in the Information Age: Use, Disclosure, and Privacy.** Washington, D.C.: Institute of Medicine, National Academy Press; 1994. <https://doi.org/10.17226/2312> – Committee Member
3. **Networking Health: Prescriptions for the Internet.** Washington, DC: National Research Council. National Academy Press; 2000. <https://doi.org/10.17226/9750> – Committee Chair
4. **Information Technology Research: Investing in our Future.** Washington, D.C.: President's Information Technology Advisory Committee (PITAC), Report to the President; February 1999. [https://www.nitrd.gov/pitac/report/pitac\\_report.pdf](https://www.nitrd.gov/pitac/report/pitac_report.pdf) – Committee Member
5. **Transforming Health Care Through Information Technology.** Washington, D.C.: Panel on Transforming Health Care, President's Information Technology Advisory Committee (PITAC), Report to the President; February 2001. <https://www.nitrd.gov/pubs/pitac/pitac-hc-9feb01.pdf> – Panel Chair
6. **Information for Health: A Strategy for Building the National Health Information Infrastructure.** Washington, D.C.: Workgroup on the NHII, National Committee on Vital and Health Statistics; November 2001. <https://aspe.hhs.gov/report/information-health-strategy-building-national-health-information-infrastructure> – Workgroup and Committee Member
7. **Electronic Scientific, Technical, and Medical Journal Publishing and its Implications: Report of a Symposium.** Washington, D.C.: National Research Council, National Academy Press; 2004. <https://doi.org/10.17226/10969> – Chair of Steering Committee
8. **Advancing the Nation's Health Needs: NIH Research Training Programs.** Washington, D.C.: National Research Council, National Academy Press, 2005. <https://doi.org/10.17226/11275> – Committee Member and Liaison to the Subcommittee on Oral Health
9. **Digital Infrastructure for the Learning Health System:** The Foundation for Continuous Improvement in Health and Health Care (Workshop Series Summary). Roundtable on Value & Science-Driven Health Care. Washington, D.C.: Institute of Medicine, National Academy Press, 2011. <https://doi.org/10.17226/12912> – Steering Committee Member and Speaker.
10. **Research Training in Biomedical, Behavioral, and Clinical Research Sciences.** Washington, DC.: National Research Council, National Academy Press, 2011. <https://doi.org/10.17226/12983>. – Committee Member.
11. **Strategies and Priorities for Information Technology at the Centers for Medicare and Medicaid Services.** Washington, DC.: National Research Council, National Academy Press, 2011. <https://doi.org/10.17226/13281> – Committee Chair
12. **Ranking Vaccines: A Prioritization Software Tool: Phase II: Prototype of a Decision-Support System.** Washington, DC: Institute of Medicine, National Academy Press, 2013. <https://doi.org/10.17226/13531> – Committee Member.
13. **A Smarter National Surveillance System for Occupational Safety and Health in the 21st Century.** Washington, DC: The National Academies Press, 2018. <https://doi.org/10.17226/24835> —Committee Chair
14. **Medications in Single Dose Vials: Implications of Discarded Drugs.** Washington, DC: National Academies Press, 2021. <https://doi.org/10.17226/25911> – Committee Chair.



### Refereed Journal Publications

20. Shortliffe, E.H., Axline, S.G., Buchanan, B.G., Merigan, T.C., and Cohen, S.N. An artificial intelligence program to advise physicians regarding antimicrobial therapy. **Comput. Biomed. Res.** 6:544-560 (1973).
21. Shortliffe, E.H. and Buchanan, B.G. A model of inexact reasoning in medicine. **Math. Biosci.** 23:351-379 (1975). Reprinted in **Readings in Uncertain Reasoning**, G. Shafer and J. Pearl, eds., pp. 259-273, San Mateo, CA: Morgan Kaufmann Publishers, Inc., 1990.
22. Shortliffe, E.H., Davis, R., Axline, S.G., Buchanan, B.G., Green, C.C., and Cohen, S.N. Computer-based consultations in clinical therapeutics: explanation and rule-acquisition capabilities of the MYCIN system. **Comput. Biomed. Res.** 8:303-320 (1975). Reprinted in Sheehy, N. and Capman, A.J., eds. **The International Library of Critical Writings in Psychology: Cognitive Science**, London: Edward Elgar Publishing Ltd., pp. 250-267, 1995.
23. Wraith, S.M., Aikins, J.S., Buchanan, B.G., Clancey, W.J., Davis, R., Fagan, L.M., Hannigan, J.F., Scott, A.C., Shortliffe, E.H., van Melle, W.J., Yu, V.L., Axline, S.G., and Cohen, S.N. Computerized consultation system for selection of antimicrobial therapy. **Amer. J. Hosp. Pharm.** 33:1304-1308 (1976).
24. Davis, R., Buchanan, B.G., and Shortliffe, E.H. Production rules as an approach to knowledge-based consultation systems. **Artificial Intelligence** 8:15-45 (1977).
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26. Yu, V.L., Buchanan, B.G., Shortliffe, E.H., Wraith, S.M., Davis, R., Scott, A.C., Axline, S.G., and Cohen, S.N. Evaluating the performance of a computer-based consultant. **Comput. Prog. Biomed.** 9:95-102 (1979).
27. Shortliffe, E.H., Buchanan, B.G., and Feigenbaum, E.A. Knowledge engineering for medical decision making: A review of computer-based clinical decision aids. **Proc. IEEE**, 67:1207-1224 (1979).
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29. Fagan, L.M., Shortliffe, E.H., and Buchanan, B.G. Computer-based medical decision making: from MYCIN to VM. **Automedica** 3:97-106 (1980).
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31. Shortliffe, E.H. The computer and clinical decision making: good advice is not enough (guest editorial). **IEEE Engineering in Medicine and Biology Magazine** 1(2):16-18 (1982).
32. Wallis, J. and Shortliffe, E.H. Explanatory power for expert systems: studies in the representation of causal relationships for medical consultation systems. **Meth Info Med** 21:127-136 (1982).
33. Gerring, P.E., Shortliffe, E.H., and van Melle, W. The Interviewer/Reasoner model: an approach to improving system responsiveness in interactive AI systems. **AI Magazine** 3(4):24-27 (1982). Republished in **Readings from AI Magazine 1980-1985**, Menlo Park, CA: American Association for Artificial Intelligence, 1987.
34. Suwa, M., Scott, A.C., and Shortliffe, E.H. An approach to verifying completeness and consistency in a rule-based expert system. **AI Magazine** 3(4):16-21 (1982). Republished in **Readings from AI Magazine 1980-1985**, Menlo Park, CA: American Association for Artificial Intelligence, 1987.
35. Duda, R.O. and Shortliffe, E.H. Expert systems research. **Science**, 220:261-268 (1983).
36. Shortliffe, E.H. Problems in implementing the computer for continuing education. **Mobius**, 3:52-55 (1983).
37. Aikins, J.S., Kunz, J.C., Shortliffe, E.H., and Fallat, R.J. PUFF: An expert system for interpretation of pulmonary function data. **Comput Biomed Res** 16:199-208 (1983).
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40. Shortliffe, E.H. Reasoning methods in medical consultation systems: artificial intelligence approaches. **Comput Prog Biomed** 18:5-14 (1984).
41. Gordon, J. and Shortliffe, E.H. A method for managing evidential reasoning in a hierarchical hypothesis space. **Artificial Intelligence** 26(3):323-357 (1985). Reprinted in **Readings in Uncertain Reasoning**, G. Shafer and J. Pearl, eds., pp. 529-539, San Mateo, CA: Morgan Kaufmann Publishers, Inc., 1990. Reprinted in **The Classic Works on the Dempster-Shafer Theory of Belief Functions** (A.P. Dempster, RR Yager, and L Liu, eds), New York: Springer, 2005.
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