Education

Massachusetts Institute of Technology. S.B. mathematics

University of California at San Francisco. M.D. medicine

Stanford University. Ph.D. computer science and biostatistics

Clinical Training and Credentials

Kaiser Foundation Hospital, Oakland, California. Intern, Resident and Chief Resident, internal medicine

Diplomate, **American Boards Internal Medicine**

Stanford Medical Center, Stanford, California. Post-Doc Fellow, clinical pharmacology

Clinical and Research Experience

Principal Investigator, **The RX Project,** Stanford University
Lead a team of clinicians, biostatisticians, and computer scientists in designing a computer program to automatically discover new medical relationships from a database containing 1700 patients with chronic immunologic arthritides.

Staff Physician (part-time), Departments of Emergency Medicine, Internal Medicine Kaiser Hospital, Santa Clara, California

Attending Physician (Volunteer), Palo Alto VA Hospital

Emergency Physician, Hoover Pavilion, Stanford Medical Center

Research Affiliate, MYCIN Project and MEDIPHOR Project
Assisted with the development and clinical evaluation of a computer-based advisor (MYCIN) fo the treatment of septicemia and acute meningitis and with the development of a program (MEDIPHOR) to warn of potential drug interactions.

Research Assistantships in Departments of Neurology and Psychiatry (University of California, Sa Francisco) and Physiological Optics and Operations Research (University of California, Berkeley).

Fellowships, Awards, Honors

New Investigator Award, National Library of Medicine

Post-Doctoral Fellowship Award, Clinical Pharmacology
Pharmaceutical Manufacturers Association Foundation

National Research Service Award
U.S. Public Health Service

Medical Scientist Training Program Scholarship
and University of California Regents Scholarship

John Hertz Engineering Foundation Scholarship

Grants and Contracts

National Library of Medicine
Deriving Knowledge from Clinical Databases

National Science Foundation
Representation of Causal Relationships

National Center for Health Services Research
Deriving Knowledge from Clinical Databases

National Center for Health Services Research
Integrating Medical Knowledge and Databanks

Professional Activities

Founding Member, American College of Medical Informatics

Chairman, Professional Study Group on Clinical Consultation Systems, American Association for Medical Systems and Informatics

Chairman, Session on Artificial Intelligence and Decision Making, Congress of the American Association for Medical Systems and Informatics, San Francisco

Chairman, Stanford Computers in Medicine Lecture Series

Reviews of technical articles,
American Association of Medical Systems and Informatics
Symposium for Computer Applications in Medical Care
Journal of Artificial Intelligence
American Association of Artificial Intelligence

Manuscript reviewer,
Annals of Internal Medicine

Keynote-Addresses, Invited Lectures

University of California Medical Center (UCSF) Pediatric Ground Rounds, American Medical Records Association Annual Conference (Minneapolis), AIM (Artificial Intelligence in Medicine) Workshop (Columbus), Association of Western Hospitals Conference (San Francisco), Northern California Society of Gastroenterologists, Post-Naval Graduate School ONR Conference (Monterey), Sacramento Computers in Medicine Conference, Symposium for Computer Applications in Medicine (Washington, D.C.)—Tutorial on Artificial Intelligence, Hewlett Packard Research Colloquium (Palo Alto).

PUBLICATIONS

Monograph, Doctoral Thesis

Blum, Robert L., Discovery and Representation of Causal Relationships from a Large Time-Oriented Clinical Database: The RX Project, D.A.B. Lindberg and P.L. Reichertz (eds.) Lecture Notes in Medical Informatics, volume 19, Springer-Verlag, New York, 1982.

Blum, Robert L., Discovery and Representation of Causal Relationships from a Large Time-Oriented Clinical Database: The RX Project, Doctoral Dissertation, Computer Science and Biostatistics, Stanford University, 1982.

Journal Articles

Blum, Robert L., Walker, Michael G., and Fagan, Lawrence M.: Minimycin: A Miniature Rule-Based System, MD Computing, 1985.

Walker, Michael G., and Blum, Robert L.: Lisp: A Tutorial, MD Computing, 1985.

Blum, Robert L., Discovery, Confirmation, and Incorporation of Causal Relationships from a Large Time-Oriented Clinical Database: The RX Project, Computers and Biomedical Research, 15:2, 164-187, April, 1982.

Blum, Robert L., Displaying Clinical Data from a Time-Oriented Database, Computers in Biology and Medicine, 11:4, 197-210, 1981.

Yu, V.; Fagan, L.; Wraith S.; Clancey, W.; Scott, A.; Hannigan, J.; Blum, R.; Buchanan, B.; Cohen, S.: Antimicrobial Selection by Computer: A Blinded Evaluation by Infectious Disease Experts. J. Amer. Med. Assoc., 242:12, 1279-1282, September 21, 1979.

Refereed Conference Proceedings

Blum, Robert L., Modeling and Encoding Clinical Causal Relationships, Seventh Annual Symposium on Applications of Computers to Medical Care, Baltimore, October 23-26, 1983.

Blum, Robert L., Medical Information Science: Its Scientific and Its Engineering Aspects, SCAMC Workshop on a Framework for Medical Information Science (by invitaton), October 20, 1983.

Blum, Robert L., Machine Representation of Clinical Causal Relationships, Conference of MEDINFO 83, Amsterdam, August 22-27, 1983.

Blum, Robert L., Representation of Empirically Derived Causal Relationships, International Joint Conference on Artificial Intelligence, Karlsruhe, West Germany, August 8-12, 1983.

Blum, Robert L., Clinical Decision Making Aboard the Starship Enterprise, Chairman's paper, Session on Artificial Intelligence and Clinical Decision Making, Congress of the American Association of Medical Systems and Informatics, San Francisco, May 2-4, 1983.

Blum, Robert L. and Wiederhold, Gio, Studying Hypotheses on a Time-Oriented Database: An overview of the RX Project, Proceedings of the Sixth Annual Symposium on Computer Applications in Medical Care, IEEE, Washington, D.C., October, 1982.

Blum, Robert L., Induction of Causal Relationships from a Time-Oriented Clinical Database: An Overview of the RX Project, Proceedings of the AAAI-82 Conference, American Assoc. for Artificial Intelligence, Pittsburgh, August, 1982.

Blum, Robert L., Automated Induction of Causal Relationships from a Time-Oriented Clinical Database: The RX Project, Proceedings of the AMIA Congress, American Medical Informatics Association, San Francisco, 1982.

Blum, Robert L., Automating the Study of Clinical Hypotheses on a Time-Oriented Database: The RX Project, Proceedings of MEDINFO80, The Third World Congress of Medical Informatics, pp. 456-460, Tokyo, Oct. 1980 (also available as Stanford University Computer Science Dept. Report STAN-CS 79-816).

Blum, Robert L. and Wiederhold, Gio, Inferring Knowledge from Clinical Data Banks Utilizing Techniques from Artificial Intelligence, Proceedings of the Second Annual Symposium on Computer Applications in Medical Care, IEEE, Washington, D.C., November, 1978.

Manuscripts in Preparation

Blum, Robert L., Two Stage Regression: Application to a Time-Oriented Clinical Database

Blum, Robert L., Computer-Assisted Design of Studies Using Routine Clinical Data: Prednisone Elevates Cholesterol