

Robert J. Robbins

21454 NE 143rd Street • Woodinville, WA, 98077 • (425) 556-9386 • (425) 556-0970 (fax) • robbins@fhcrc.org

Summary

I am a biologist and science administrator, who specializes in advancing biomedical research through the application of information technology. I am also interested in the history of science, the intellectual history of genetics, and the concept of the gene.

Selected Accomplishments

- Helped form national and international policy for the development of a federated approach to biological information resources for biology.
- Shaped the development of information resources across many fields of biological research.
- Directed informatics activities at the Genome Data Base during its successful transition from private to public funding.
- Initiated, developed, and implemented the first program at the National Science Foundation to support database activities for biology.

Professional Experience

Vice President, Information Technology 1995 – present

Fred Hutchinson Cancer Research Center

- Developed strategic plan for information technology at the Center
- Successfully deployed information technology as strategic assets for the Center, including several very large projects, among them: deploying new enterprise management software systems (PeopleSoft); implementing a redundant, robust, high-speed network infrastructure; building integrated systems to support a metropolitan-area health-care organization (the Seattle Cancer Care Alliance)
- Created a project-management office and implemented formal approach to project management
- Designed and deployed the IT infrastructure necessary to support the development of new facilities for the Center, including two major research buildings, a clinical outpatient facility, and an administration building, all totaling more than 750,000 square feet

Program Director, Bioinformation Infrastructure 1993 – 1995

Office of Health and Environmental Research, US Department of Energy

- Developed policies regarding bioinformation infrastructure
- Provided consulting to the research community on matters pertaining to scientific databases
- Served as the DOE/OHER representative and liaison with other agencies and organizations in matters pertaining to bioinformation infrastructure, especially in matters associated with the development of a federated information infrastructure for biology

Associate Professor of Medical Information and Computer Science 1991 – 1995

The Johns Hopkins University, Baltimore, MD 21205

- Developed and taught courses in information-system design, biomedical informatics, and computational biology
- Initiated development of a research and training program in biomedical informatics
- Advised the Dean of Medicine on medical informatics

- Director, Laboratory for Applied Research in Academic Information 1991 – 1993
William H. Welch Medical Library, The Johns Hopkins University, Baltimore, MD 21205
- Administered an informatics research laboratory with more than 35 full-time staff and over \$5,000,000 in external annual support
- Director, Informatics Activities (acting – detailed from NSF) 1990 – 1991
US DOE Human Genome Program, US Department of Energy
- Developed policies regarding scientific databases relevant to the DOE Human Genome Project (DOE/HGP)
 - Provided consulting on matters pertaining to scientific databases
 - Served as liaison with other organizations in matters pertaining to genome informatics
- Program Director, Database Activities in Biology 1990 – 1991
US National Science Foundation
- Initiated, developed, and implemented a new Program in the Directorate for Biological, Behavioral, and Social Sciences (BBS) to encourage and support research in BBS-related database theory and to encourage and support the implementation of BBS-related databases
 - Advised senior NSF administrators on matters and policies regarding scientific databases
 - Advised the BBS research community on matters pertaining to scientific databases
 - Served as the Directorate's and the Foundation's representative and liaison with other agencies and organizations in matters pertaining to biological databases
- Staff Associate for Biotic Information Resources Development 1987 – 1990
US National Science Foundation
- Prepared position papers and recommendations for senior NSF administrators
 - Reviewed and evaluated scientific research proposals involving scientific computing
 - Provided consulting on the design of computer applications in the biological sciences
- Associate Professor, Biological Science and Zoology 1982 – 1989
Michigan State University, East Lansing, Michigan 48824
- Performed research in animal behavior, ecology, and genetics
 - Taught large introductory biology courses and upper-division genetics courses
 - Administered large introductory courses in basic biology, including directing and overseeing the activities of more than 25 graduate student teaching assistants
- Assistant Professor, Biological Science and Zoology 1977 – 1982
Michigan State University, East Lansing, Michigan 48824
- Performed research in animal behavior, ecology, and genetics
 - Developed, administered, and taught large (1000+ students) introductory biology courses

Education

- Doctor of Philosophy in Zoology 1977
Michigan State University, East Lansing, Michigan
- Master of Science in Biology 1974
Michigan State University, East Lansing, Michigan
- Bachelor of Science in Zoology 1973
Michigan State University, East Lansing, Michigan
- Bachelor of Arts in History 1966
Stanford University, Palo Alto, California

Honors and Awards

Outstanding Performance Award, NSF (1991)
 Outstanding Performance Award, NSF (1989)
 Listed in American Men and Women of Science
 Listed in Who's Who in the Midwest
 Listed in Who's Who of Emerging Leaders in America
 Listed in Who's Who in Frontier Science and Technology

Professional Associations

American Association for the Advancement of Science
 American Society for Microbiology
 Association for Computing Machinery (SIGMOD, SIGIR, SIGSOFT)
 Genetics Society of America
 IEEE Computer Society

Recent Publications

- In review What do we mean by internet access? A framework for health. *Journal of Health Communication*. (Sixth author, with N. Bush, D. Bowen, J. Wooldridge, A. Ludwig, and H. Meischke, co-authors)
- In press Predictors of Women's Internet Access and Internet Health Seeking. *Health Care for Women International*. (Fifth author, with D. Bowen, H. Meischke, N. Bush, J. Wooldridge, A. Ludwig, and G. Escamilla, co-authors)
- 2003 Early Experience with a Web-based intervention to inform risk of breast cancer. 2003. *Journal of Health Psychology*. 8(1):175-186. (Last author, with D. Bowen, A. Ludwig, N. Bush, H. Unruh, H. Meischke, J. Wooldridge, co-authors)
- 1996 Bioinformatics: Essential infrastructure for global biology. *Journal of Computational Biology*, 3: 465-478.
- 1996 Comparative genomics: A new integrative biology. In Collado-Vides, J., Magasanik, B., and Smith, T. F. (Eds) *Integrative Approaches to Molecular Biology*. Cambridge, Massachusetts: MIT Press. pp. 63-90.
- 1995 Information infrastructure. *IEEE Engineering in Medicine and Biology*, 14(6): 746-759.
- 1995 Informatics and the human genome project. *IEEE Engineering in Medicine and Biology*, 14(6): 694-701. (First author, with D. Benton and J. Snoddy, co-authors)
- 1994 Genome informatics I: Community databases. *Journal of Computational Biology*, 1:173-190.
- 1994 Representing genomic maps in a relational database. In S. Suhai (ed.) *Computational Methods in Genome Research*. New York: Plenum Publishing Company. pp. 85-96.
- 1994 Biological Databases: A New Scientific Literature. *Publishing Research Quarterly*, 10:1-27.
- 1993 Coat color genetics of *Peromyscus*. IV. Variable white, a new dominant mutation in the deer mouse. *Journal of Heredity*, 85:48-52. (Second author, with K. Cowling, G. R. Haigh, S. K. Teed, and W. D. Dawson, co-authors)
- 1993 *Bioinformatics, Supercomputing and Complex Genome Analysis*. Singapore: World Scientific Publishing Company. 850 pp. (fourth editor, with H. A. Lim, J. W. Fickett, C. R. Cantor co-editors)
- 1993 CCM92 informatics report. In Cuticchia, A. J., Pearson, P. L., and H. P. Klinger (eds) *Chromosome Coordinating Meeting 1992, Genome Priority Reports*, vol. 1. Basel: S. Karger A. G.
- 1993 The GDB Human Genome Data Base Anno 1993. *Nucleic Acids Research*, 21:3003-3006. (Fourth author, with A. J. Cuticchia, K. H. Fasman, D. T. Kingsbury, and P. L. Pearson, co-authors)
- 1993 Genome informatics: Requirements and challenges. In H. A. Lim, J. W. Fickett, C. R. Cantor, and R. J. Robbins (eds) *Bioinformatics, Supercomputing and Complex Genome Analysis*. Singapore: World Scientific Publishing Company.
- 1992 Challenges in the Human Genome Project. *IEEE Engineering in Medicine and Biology*. 11:25-34.
- 1992 The GDB Human Genome Data Base Anno 1992. *Nucleic Acids Research*, 20(Supplement):2201-2206. (Fourth author, with P. L. Pearson, N. W. Matheson, and D. C. Flescher, co-authors)
- 1991 The human genome initiative — Do databases reflect current progress? *Science*, 254:215-215. (Fourth author, with P. L. Pearson, B. Maidak, and M. Chipperfield, co-authors)
- 1991 Report of the informatics committee. *Cytogenetics and Cell Genetics*, 58:779-784. (Fourth author, with C. J. Rawlings, C. Brunn, S. Bryant, and R. E. Lucier, co-authors)

Invited Talks

- 2003 Background Standards – The Critical Missing Piece. NIST workshop: Information Science Standards to Enable Biomedical Research. 4–5 November 2003. Bethesda, Maryland.

- 2003 Digital Publishing Support. Fall Meeting, BRIITE (Biomedical Research Institutions Information Technology Exchange). 10–13 September 2003. Seattle, Washington.
- 2003 Strategic Planning for IT Support of Grant-funded Research. Fall Meeting, BRIITE (Biomedical Research Institutions Information Technology Exchange). 10–13 September 2003. Seattle, Washington.
- 2002 Integrating Bioinformatics Data into Science: From Molecules to Biodiversity. 18th International CODATA Conference, 29 Sep–3 Oct 2002. Montreal, Canada.
- 2001 Bioinformatics and the New Information Technologies. The Canadian Biodiversity Network Conference, 1–4 Mar 2001. Ottawa, Ontario, Canada.
- 2000 Leadership by Example. AAAS Annual Meeting, 17–22 Feb 2000. Washington, DC.
- 1998 Economic Impact of Bioinformatics. ATCC Bioinformatics Symposium, 6 November 1998. Bethesda, Maryland.
- 1998 Information, Logistics, and 21st Century Research. Cancer Centers Administrators Forum, 12 October 1998. Portland, Oregon.
- 1998 Information Technology: The Foundation for 21st Century Research. Keynote Address, Self Graduate Fellowship Retreat, 16-18 August 1998. Kansas City, Missouri.
- 1998 What is Biological Informatics? (keynote address) Australian National Academy of Sciences Conference on Biological Informatics. Canberra, Australia. 6-8 July 1998.
- 1998 Systems Development in Research Organizations. Invited talk, Office of the Vice President for Research, Northwestern University, Evanston, Illinois. 16 February 1998.
- 1997 Next Steps for Working Scientists: Access to Data. CODATA Conference on Scientific and Technical Data Exchange and Integration. Bethesda, MD: 15-17 December 1997.
- 1997 21st Century Biology: The Role of Information Technology. Association of Independent Research Institutes (AIRI) Annual Meeting. Seattle, Washington: 21-24 October 1997.
- 1997 21st Century Biology: Informatics in the Post-Genome Era. The Pfizer Inc.—Olga G. Nalbandov / Beckman Institute Symposium on Bioinformatics, Structure, and Function. University of Illinois at Urbana-Champaign: 29 May – 1 June 1997.
- 1997 New Technologies for Research Administration. Society of Research Administrators, Joint Seattle/Pacific Northwest Chapter – Canadian Section Workshop: Research Administration: Proactive Approach to Tomorrow. University of Washington, Seattle, WA: 24 March 1997.
- 1996 Information Management: The Key to the Human Genome Project. Current Topics in Health Sciences Librarianship. Baltimore, MD: 24-27 June 1996
- 1996 Bioinformatics: Essential Infrastructure. Office for Economic Coordination and Development Megascience Meeting, Washington, DC, 6 June 1996.
- 1996 Fast Company: Provocateurs on the Edges of Science, Information Technology, and Power. Consumer Health Informatics Symposium, Fred Hutchinson Cancer Research Center. Seattle, WA: 24 April 1996.
- 1995 Genome Informatics, the *Sine Qua Non* of Genomic Research. Fourth International Conference on Bioinformatics and Genome Research; San Francisco, California, 5-7 June 1995.
- 1995 Biological Data and the Global Information Infrastructure. Annual Meeting of the American Chemical Society, Anaheim, California, 2-6 April 1995.
- 1995 Information Systems Architecture: Making Computers Work for People. Fred Hutchinson Cancer Research Center, Seattle, Washington, 9 March 1995.
- 1994 Bioinformatics: Making the Genome Project Possible. Ameritech Endowed Lecture Series; Michigan State University, East Lansing, Michigan; 14 December 1994.
- 1994 The Genome Experience: Is Retroactive Integration Possible? BrainMap '94; San Antonio, Texas; 4–5 December 1994.
- 1994 A Microbial Information System as a Model Organism. Third International *E. coli* Genome Meeting; Marine Biological Laboratory, Woods Hole, Massachusetts; 5 November 1994.
- 1994 Towards a Federated Information Infrastructure for Biology. Invited talk, School of Information and Library Sciences, University of Michigan, Ann Arbor, Michigan; 1 November 1994.
- 1994 Scientific Databases – State of the Art and Future Directions. Panel discussion; 20th International Conference on Very Large Databases; Santiago, Chile, 12-15 September 1994.
- 1994 Community Databases: Towards a Federated Information Infrastructure. MIMBD, Stanford, California, 9–12 August 1994.
- 1994 Genome Informatics: Toward a Federated Information Infrastructure (keynote address). The Third International Conference on Bioinformatics and Genome Research; Tallahassee, Florida; 1–4 June 1994.
- 1994 Computing the Genome: Efforts to Reverse Engineer Humans. David D. Lattanze Center for Executive Studies in Information Systems. Towson, Maryland; 7 April 1994.
- 1994 Comparative Genomics: A New Integrative Biology. First International Workshop on Integrative Approaches to Molecular Biology. Cuernavaca, Morelos, Mexico; 19–24 February 1994.
- 1994 The Human Genome Project: Unraveling the Instructions for Creating Life. The Philosophical Society of Washington. Washington, DC; 21 January 1994

- 1993 The Transformation of GDB: A Case Study. Genome Informatics Workshop IV. Yokohama, Japan; 13-15 December 1993.
- 1993 The Transformation of GDB: A Case Study. Brain Map '93. San Antonio, Texas; 4-6 December 1993.
- 1993 Computational Challenges of the Genome Project: What is a Gene? Genetics Department Seminar, Cedars Sinai Medical Center. Los Angeles, California; 11 May 1993.
- 1993 Biological Databases: A New Scientific Literature. Keynote Address. Council of Biological Editors Annual Meeting. San Diego, California; 9-11 May 1993.
- 1993 Online Mendelian Inheritance in Man and Genome Databases. Info-Fair 93: Connecting to Biomedical Information. Meeting sponsored by the Countway Library of Medicine and the Massachusetts Medical Society. Boston, Massachusetts; 2 April 1993.
- 1993 The Challenge of Biological Data Management. Program Seminar, Beckman Institute, University of Illinois, Urbana, Illinois; 22 January 1993.
- 1992 GDB: New directions. First International Chromosome Coordinating Committee Meeting (CCM-92); Baltimore, Maryland; 15-16 November 1992.
- 1992 GDB: The Human Genome Database. Society for Scholarly Publishing Top Management Round Table on Strategic Risk Taking: Electronic Innovation in Scholarly Publishing; Baltimore, Maryland; 12-13 November 1992.
- 1992 The Challenge of Biological Data Management: The Human Genome Project as Case Study. ISMM First International Conference on Information and Knowledge Management (CIKM-92); Baltimore, Maryland; 8-11 November 1992.
- 1992 Representing Genomic Maps in a Relational Database. Deutsches Krebsforschungszentrum Conference on Computational Methods in Genome Research; Heidelberg, Germany; 1-4 July 1992.
- 1992 Keynote Address. The Second International Conference on Bioinformatics, Supercomputing, and Complex Genome Analysis; St. Petersburg Beach, Florida; 4-7 June 1992.
- 1992 Genome Informatics: Requirements and Challenges. International Symposium on Recent Advances in the Human Genome Project; Tokyo, Japan; 6-7 March 1992.
- 1992 Accessing the Genome Data Base. Chromosome 19 Workshop; Horst, Netherlands; 24-26 January, 1992.
- 1991 Technical Challenges for a Genome Database. Eleventh International Workshop on Human Gene Mapping; London, England; 18-22 August 1991.
- 1991 Databases: A New Biological Literature. American Crystallographic Association Annual Meeting; Toledo, Ohio; 24 July 1991.
- 1990 Databases and Biology. American Plant Physiology Society Annual Meeting; Indianapolis, Indiana; 31 July 1990.
- 1990 The Computer Challenges of the Human Genome Project. SIGMOD Panel discussion; ACM SIGMOD Annual Meeting; Atlantic City, New Jersey; 25 May 1990.
- 1990 Computational Problems of the Human Genome Project. Computers and Medicine Symposium, New Jersey Institute of Technology, Newark, New Jersey; 5 May 1990
- 1990 Building Scientific Databases. Kellogg Biological Station, Hickory Corners, Michigan; 23 April 1990.
- 1989 Scientific Database Design Issues. 2nd BioMatrix Conference, New Hampshire, 19 August 1989.
- 1989 Databasing the Human Genome. Departmental Seminar, Computer Science Department, University of Virginia, Charlottesville, Virginia; 6 September 1989
- 1989 Building Internet Connections. LTER WAN Workshop; Urbana, Illinois; 26-28 April 1989.
- 1988 Issues in Database Design. Workshop on Databasing Genetic Stock Centers; Genetics Society of America workshop; XVth International Genetics Congress; Toronto, Ontario; 25 August 1988.

National or International Committee Activities:

- 1998- National Advisory Board (NAB) for the LTER Network and Network Office
- 1998- Steering Committee for the Human Genome Epidemiology Network (HuGE Net), Office of Genetics and Disease Prevention, Center for Disease Control
- 1996- Advisory Board, *Arabidopsis* Genome Database
- 1995- External Advisory Board of the USC Brain Project
- 1993-1995 Advisory Board, Brain Map Database.
- 1993 Committee on the Formation of the National Biological Survey, National Research Council
- 1991- Human Genome Organization (HUGO)
- 1991-1995 Informatics Committee, HUGO
- 1991-1993 DOE Human Genome Coordinating Committee
- 1991 DOE Informatics Review Committee
- 1991 NCHGR/NIH Special Informatics Review Committee
- 1990 NSF/LTER GIS Advisory Committee
- 1990 NSF/LTER Connectivity Assessment and Networking Committee

- 1990 NCHGR/NIH Special Genome Centers Review Committee
- 1990-1991 liaison member (DOE/NSF); Joint Informatics Task Force for the Human Genome
- 1990-1991 USDA Plant Genome Informatics Subcommittee
- 1989-1990 Technical Advisors Group for Genome Data Base
- 1988-1990 Long-Term Ecological Research Working Group on Geographic Information Systems
- 1988-1991 Computer Advisory Committee, Flora North of North America Project, Missouri Botanical Gardens
- 1988- Advisory Committee of the Coli Genetic Stock Center at Yale University