

Bruce G. Buchanan, Ph.D.



Co-Founder and Chief Science Officer
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Citizenship: U.S.A.

I am University Professor of Computer Science Emeritus, previously also Professor of Philosophy, Intelligent Systems, and Medicine, and Director of the Keck Center for Computational Biology at the [University of Pittsburgh](#), with a courtesy appointment in Computer Science at Carnegie Mellon University. Prior to that I was on the research faculty in Computer Science and Medicine at Stanford University.

My main research interests are in Artificial Intelligence, specifically machine learning, knowledge-based systems, medical expert systems, and computational biology. I am generally interested in applications of machine learning and artificial intelligence to problems in science and engineering.

For an extended discussion of how I view AI research, see B. G. Buchanan, "Artificial Intelligence as an Experimental Science." In J. H. Fetzer (ed.) *Aspects of Artificial Intelligence*, Amsterdam: D. Reidel, 1988.

Education

- 1966 Ph.D., Philosophy, Michigan State University
Dissertation Title: Logics of Scientific Discovery
Dissertation Advisor: Gerald J. Massey
- 1965, M.A., Philosophy, Michigan State University
- 1961, B.A., Mathematics, with Honors, Ohio Wesleyan University

Professional Experience

2013-present	i2k Connect LLC	Co-Founder and Chief Scientist
1993-present (Emeritus since 2002)	University of Pittsburgh And Carnegie-Mellon University	University Professor of Computer Science, Professor of Philosophy, Medicine, and Intelligent Systems Adjunct Professor, Computer Science
1988-1993	University of Pittsburgh	Professor of Computer Science, Philosophy, and Medicine
1981-1988	Stanford University	Professor of Computer Science (Research), Professor of Medicine (Research), by courtesy Stanford Medical Center, Co-Director, Knowledge Systems Laboratory
1976-1981	Stanford University	Adjunct Professor, Computer Science Department
1972-1976	Stanford University	Research Computer Scientist, Computer Science Department Instructor, Department of Genetics
1966-1972	Stanford University	Research Associate, Artificial Intelligence Project
1965-1966	Michigan State University	Instructor, Department of Philosophy
1963	RAND Corporation	Summer Intern, Artificial Intelligence Program

Professional Organizations

- Fellow and Life Member of [Association for the Advancement of Artificial Intelligence](#) (AAAI)

- Fellow of National Academy of Medicine (NAM)

Publications (10 Most Relevant of 300)

- R. K. Lindsay, B. G. Buchanan, E. A. Feigenbaum, and J. Lederberg, Applications of Artificial Intelligence for Chemical Inference: The DENDRAL Project, New York: McGraw-Hill, 1980.
- B. G. Buchanan and E. H. Shortliffe, Rule-Based Expert Systems: The MYCIN Experiments of the Stanford Heuristic Programming Project, New York: Addison-Wesley, 1984.
- B.G. Buchanan and D. C. Wilkins, Readings in Knowledge Acquisition and Learning: Automating Construction and Improvement of Expert Systems, San Mateo, CA, Morgan Kaufmann, 1993.
- B.G. Buchanan, R. Davis, R.G. Smith, and E.A. Feigenbaum. Expert Systems: A Perspective from Computer Science. In by K. Anders Ericsson, Robert R. Hoffman, et al. (eds.) The Cambridge Handbook of Expertise and Expert Performance (Cambridge Handbooks in Psychology). Cambridge, U.K., Cambridge Univ. Press, 2018.
- B.G. Buchanan, "Creativity at the Meta-Level", AI Magazine 22, pp. 13-28 (Sep. 2001).
- B.G. Buchanan, "What Do We Know About Knowledge?", AI Magazine 27 (4), pp. 35-46 (Winter, 2006).
- Buchanan, Bruce G., Joshua Eckroth, Reid G. Smith. (2012) A Virtual Archive for the History of AI. *AI Magazine*, 34(2), Summer, 2013.
- Eckroth, Joshua, Liang Dong, Reid G. Smith, Bruce G. Buchanan, (2012) NewsFinder: Automating an AI News Service. *AI Magazine*, 33(2): 43-54, Summer 2012.
- Buchanan, B. G. Smith, R. G. and Glick, J. 2008. The AAAI Video Archive. *AI Magazine*, 29(1): 91-94.
- B.G. Buchanan and Glick, J. "AI Topics - organizing online knowledge sources about AI for the lay public". *ACM: Intelligence*, 12(3): 25 - 30. 2001.

Other Professional Activities

- Editorial Board and Past Editor-in-Chief, aitopics.org
- Past President and Past Treasurer, AAAI
- Co-developer on four patents (three approved and one pending)
- Co-founder of the technology transfer company, Teknowledge, Inc.

- Director and PI of the Keck Center for Computational Biology at Pitt
- Board member and Chair of the NLM Board of Scientific Counselors
- Committee Member and Chair of NLM review panel (BLRC)
- Numerous NSF, NIH, and DARPA review panels
- Supervised 32 Ph.D. dissertations, five post-docs, and numerous M.S. theses in AI, Medical Informatics, Computational Biology, Philosophy