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**Kirby A. Baker**

**Research Interests:**

General algebra, with methods involving algebra, logic, and combinatorics; algebraic problems in the theory of dynamical systems; combinatorics on words; computational issues.

**Education:**

Ph.D. Harvard University, 1966  
A.B. Harvard University, 1961, Summa cum Laude

**Professional Experience:**

7/1/04 – present	Professor Emeritus of Mathematics	UCLA
7/1/76 – 7/1/04	Professor of Mathematics	UCLA
7/1/71 – 6/30/76	Associate Professor of Mathematics	UCLA
7/1/68 – 6/30/71	Assistant Professor of Mathematics	UCLA
7/1/66 – 6/30/68	Ford Foundation Research Fellow	Caltech, Pasadena
7/1/94 – 7/1/04	Director, Program in Computing	UCLA
7/1/87 – present	PI/Faculty Advisor, UCLA Mathematics Project	UCLA

**Awards & Honors:**

UCLA Campus-wide Distinguished Teaching Award 1973  
Ford Foundation Fellowship Recipient 1966-1968

**Invited Lectures and Activities (from 1994):**

Feb., 1994, Panelist, National Science Foundation  
Oct., 1995, Speaker, U. of Manitoba seminar (Winnipeg, Man., Canada)  
Oct., 1995, Speaker, U. of Hawaii Colloquium (Honolulu, HI)  
May, 1996, Speaker, Conference on Modern Algebra and its Applications, Vanderbilt U. (Nashville, TN)  
Sept., 1997, Co-author of speaker and attendee, Conference on Dualities, Interpretability, and Ordered Structures, Centro de Algebra da Universidade de Lisboa  
Oct., 1997, Speaker, U. of Siena Colloquium (Siena, Italy)  
June, 1999, Co-author of speaker, 58th Workshop on General Algebra, Inst. for Algebra and Computational Mathematics, Vienna U. of Technology  
Aug., 1999, Co-author of speaker, Conference in Algebra, Alfréd Rényi Inst. of Mathematics, Hungarian Academy of Sciences, Budapest, Hungary  
Aug., 1999-Aug., 2000, Program Committee, MAA Mathfest 2000.

Mar., 2001 Speaker, AMS Special Session on Algebra, Lattices, Varieties, Columbia, SC.

Mar., 2001 Speaker, Vanderbilt U. Colloquium, (Nashville, TN)

June, 2002 Speaker, Special Session on Universal Algebra, Joint meeting of AMS and Italian Mathematical Union, Pisa, Italy

Oct., 2002 Speaker, U. of Hawaii Colloquium (Honolulu, HI)

Jan., 2003 Speaker, AMS Special Session on Lattice Theory and Ordered Sets, Baltimore, MD.

Jul., 2003– Chair, Special Interest Group of the Mathematical Association of America on use of the World-Wide Web for undergraduate mathematics instruction (WEB SIGMAA) [to Jan., 2005]

Oct., 2003 Speaker, AMS Special Session on Algebras, Lattices, Varieties, Boulder, CO.

Aug., 2004 Speaker, Taylor Conference on Algebras, Lattices, and Varieties, Boulder, CO.

Oct., 2004 Speaker, Conference in honor of R. McKenzie, Nashville, TN.

### Selected Publications

1. K.A. Baker, *Topological methods in the algebraic theory of vector lattices*. Harvard University, 1966, THESIS.
2. K.A. Baker, *Borel functions for transformation group orbits*. J. Math. Anal. Appl., **11**, 1965, 217-225, RESEARCH ARTICLE.
3. K.A. Baker, *Free vector lattices*. Canad. J. Math., **20**, 1968, 58-66, RESEARCH ARTICLE.
4. K.A. Baker, *Equational axioms for classes of lattices*. Bull. Amer. Math. Soc., **77**, 1971, 97-102, RESEARCH ARTICLE.
5. K.A. Baker, *Primitive satisfaction and equational problems for lattice and other algebras*. Trans. Amer. Math. Soc., **190**, 1974, 125-150, RESEARCH ARTICLE.
6. K.A. Baker, A.W. Hales, *From a lattice to its ideal lattice*. Algebra Universalis, **4**, 1974, 250-258, RESEARCH ARTICLE.
7. K.A. Baker, A.F. Pixley, *Polynomial interpolation and the Chinese remainder theorem for algebraic systems*. Math. Z., **143**, 1975, 165-174, RESEARCH ARTICLE.
8. K.A. Baker, *Finite equational bases for finite algebras in a congruence-distributive equational class*. Advances in Math., **24**, 1977, 207-243, RESEARCH ARTICLE.
9. K.A. Baker, *Nondefinability of projectivity in lattice varieties*. Algebra Universalis, **17**, 1983, 267-274, RESEARCH ARTICLE.
10. K.A. Baker, *Strong shift equivalence of  $2 \times 2$  matrices of nonnegative integers*. Ergodic Theory and Dynamical Systems, **3**, 1983, 501-508, RESEARCH ARTICLE.
11. K.A. Baker, *Strong shift equivalence and shear adjacency of nonnegative integer matrices*. Linear Algebra and its Applications, **93**, 1987, 131-147, RESEARCH ARTICLE.
12. K.A. Baker, G.F. McNulty, H. Werner, *The finitely based varieties of graph algebras*. Acta Sci. Math. (Szeged), **51**, 1987, 3-15, RESEARCH ARTICLE.

13. K.A. Baker, G.F. McNulty, H. Werner, *Shift-automorphism methods for inherently nonfinitely based varieties of algebras*. Czech. Math. J., **39**, 1989, (114) 53-69, RESEARCH ARTICLE.
14. K.A. Baker, G.F. McNulty, W. Taylor, *Growth problems for avoidable words*. Theor. Comp. Sci., **69**, 1989, 319-345, RESEARCH ARTICLE.
15. K.A. Baker, R. Wille, eds., *Lattice Theory and its Applications. In celebration of Garrett Birkhoff's 80th birthday. Papers from the symposium held at the Technische Hochschule Darmstadt, Darmstadt, June 1991*. Heldermann Verlag, Research and Exposition in Mathematics, **23**, Lemgo, 1995, EDITED VOLUME.
16. P. Aglianò, K.A. Baker, *Congruence intersection properties for varieties of algebras*. J. Austral. Math. Soc., Ser. A, **67**, 1999, 104–121, RESEARCH ARTICLE.
17. P. Aglianò, K.A. Baker, *Congruence properties of two-generated varieties*, in *Contributions to General Algebra 12*, D. Dorninger et al., eds., Verlag Johannes Heyn, Klagenfurt, 2000, pp. 71–84, RESEARCH ARTICLE.
18. K.A. Baker, J. Wang, *Definable principal subcongruences*, Algebra Universalis 47 (2002), 145-151, RESEARCH ARTICLE.
19. K.A. Baker, G. McNulty, J. Wang, *An extension of Willard's Finite Basis Theorem: Congruence meet-semidistributive varieties of finite critical depth*, Algebra Universalis 52 (2004), 289–302, RESEARCH ARTICLE.
20. K.A. Baker, J. Wang, *Approximate distributive laws and finite equational bases for finite algebras in congruence-distributive varieties*, Algebra Universalis 54 (2005), 385–396, RESEARCH ARTICLE.