

Curriculum Vitae

Ronald M. Adkins

Children's Foundation Research Center & Center of Genomics and Bioinformatics
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Le Bonheur Children's Medical Center
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Current Position (2002 - Present)

Assistant Professor of Pediatrics

Education

B.S. Oklahoma State University
Zoology, May 1989

Ph.D. Texas A&M University
Genetics, August 1993
Dissertation: Evolution of the Cytochrome c Oxidase Subunit II Gene in Primates and Rodents

Work Experience

2002-Present	Assistant Professor of Pediatrics Department of Pediatrics & Center of Genomics and Bioinformatics, University of Tennessee Health Science Center
1998-2002	Assistant Professor of Biology Director, Automated DNA Sequencing Facility Curator of Mammals Biology Department, University of Massachusetts - Amherst
1995-1998	Postdoctoral Fellow, Human Genetics Center, University of Texas Health Science Center at Houston
1994&1995	Contracted for periodic environmental impact small mammal surveys
1993-1995	Alfred P. Sloan Postdoctoral Fellow University of Michigan
1989-1993	National Science Foundation Predoctoral Fellow Texas A&M University
1988	Research Experiences for Undergraduates Program.
June-August 1987	Harvard University and Savannah River Ecology Laboratory. Technician. Zoology Department,
May-August	Oklahoma State University and Cooperative Wildlife Unit.

Teaching Experience

University of Massachusetts	Genomics and Bioinformatics Molecular Evolution and Systematics Introductory Evolution
University of Texas Health Science Center	Guest lectures in Introduction to Recombinant DNA Technology
Texas A&M University	Guest lecturer in: Undergraduate Genetics Mammalogy Molecular Evolution

Oklahoma State University Undergraduate Teaching Assistant
Comparative anatomy laboratory

Grants (Active) PI on all unless otherwise noted

NSF, "Murid Rodent Phylogenetics Using Multiple Nuclear and Mitochondrial Genes," \$185,753, DEB-0416053, Co-PI with Scott Steppan of Florida State University, 2005-2007
Children's Foundation Research Center, "Molecular Genetic Analysis of Birth Weight Variation," 2004: \$50,500; renewed 2005: \$50,000

Proposals Pending PI on all unless otherwise noted

NICHD, "Molecular Genetics of Birth Weight Variation," \$1,643,911 (total costs)

Proposals in Revision

NICHD, "Molecular Genetic Analysis of Fetal Growth Restriction," \$1,516,860 (total costs)
Priority score on 1st submission: 245.

Grants (Expended) PI on all unless otherwise noted

NSF, "Muroid rodent phylogenetics using multiple nuclear genes," \$100,000, DEB-0238837
Co-PIs Ronald Adkins and Scott Steppan. 2002-2004
Children's Foundation Research Center, "Molecular Genetic Analysis of Preeclampsia," \$74,000
2003
Collaborative Biomedical Research Program, "Genetic Epidemiology of Fetal Growth Restriction," \$22,000 (To support collaborative research with physicians at Baystate Medical Center). 2000-2002
Faculty Research Grant, "Genetic Epidemiology of Fetal Growth Restriction," \$13,000. 2000-2001
Faculty Research Grant, "Genomic Analysis of the Primate Growth Hormone Locus," \$13,280. 1998-2001.
Alfred P. Sloan Postdoctoral Fellowship in Studies of Molecular Evolution, "Evolution of the Sex Chromosome-Linked Zinc Finger Genes," \$80,000, 1993-1995
NSF Dissertation Improvement Grant, "Higher Level Systematics of Mammals: A Molecular Approach," \$10,000, 1992-94

Service

NSF Advisory Panel, 2002&2003
Editorial Board, Molecular Phylogenetics and Evolution, 2001-Present
Steering Committee, Massachusetts Museum of Natural History, 1999-2002
Steering Committee, Organismal and Evolutionary Biology Graduate Program, 1999-2002
Graduate Admissions Committee, Organismal and Evolutionary Biology Graduate Program, 2000 & 2001
Personnel Committee, Biology Department, 2001-2002
Task Force on Genomics and Bioinformatics at the University of Massachusetts, 1999-2000
Program Oversight Committee, University of Massachusetts - Baystate Medical Center Collaborative Biomedical Research Program, 2001-2002
Three Faculty-level Search Committees, Plant Molecular Systematics (1998), Insect Molecular Systematics (1999), Vertebrate Evolutionary Morphology (2000)
Ad hoc reviewer, Molecular Biology and Evolution, Systematic Biology, Cladistics, Molecular Phylogenetics and Evolution, Journal of Mammalian Evolution, Journal of Molecular Evolution, NSF proposals

Academic Awards

Regent's Graduate Fellowship, Texas A&M University, \$14,000, declined in preference for following award
National Science Foundation Predoctoral Fellowship, \$36,000

Wildlife and Fisheries Outstanding Doctoral Student 1991-92
Travel Award, Gordon Conference in Molecular Evolution, Hayama, Japan, 1999

Invited Seminars

1. University of Utah. 1994. Heterogeneous Rates of Evolution and Altered Interaction of COII and Cytochrome c in Higher Primates.
2. Occidental College. 1997. Molecular Coevolution.
3. Wake Forest. 1997. Molecular Coevolution.
4. Rice University. 1997. Molecular Coevolution: Examples from Human Growth Hormone and Cytochrome c Oxidase.
5. University of Houston-Downtown. 1997. Growth Hormone and Receptor: Interaction and Evolution.
6. Weber State University. 1997. Evolutionary Molecular Biology: The Case of Growth Hormone.
7. Colgate University. 1998. Mammalian Molecular Systematics and Evolution.
8. Providence College. 1998. Mammalian Molecular Systematics and Evolution.
9. University of South Carolina - Columbia. 1998. Mammalian Molecular Systematics and Evolution.
10. Bowdoin College. 1998. Mammalian Systematics and Molecular Evolution of Growth Hormone.
11. University of Massachusetts. 1998. Mammalian Systematics and Molecular Evolution of Growth Hormone.
12. Penn State University. 1999. Molecular Evolution of the Multigene Primate Growth Hormone Locus.
13. University of Cincinnati. 1999. Mammalian Higher-Level Systematics: Empirical and Theoretical Approaches.
14. Worcester Polytechnic Institute. 2000. Molecular Evolution of the Primate Growth Hormone Locus.
15. University of Texas-San Antonio. 2001. Bioinformatic and Genomic Analyses of the Growth Hormone Locus and Fetal Growth.
16. University of Tennessee-Memphis. 2001. Genomics and Bioinformatics of the Growth Hormone Locus and Fetal Growth.
17. University of Vermont. 2002. Computational Analysis of GHR and BRCA1 Sequences Across Mammalian Diversity.
18. University of Memphis. 2003. Computational Analysis of Human Genetics, Fetal Growth and Murine Phylogeny.
19. Oklahoma State University. 2003. Genomics and Bioinformatics of the Growth Hormone Locus and Birth Weight.
20. Texas A&M University. 2004. Bioinformatic Analysis of the Human Growth Hormone Locus and Adverse Pregnancy Outcomes.
21. St. Edward's University. 2004. Bioinformatic Analysis of the Human Growth Hormone Locus and Adverse Pregnancy Outcomes.
22. University of Kentucky. 2004. Bioinformatic Analysis of the Human Growth Hormone Locus and Adverse Pregnancy Outcomes.
23. Florida International University. 2004. Bioinformatic Analysis of the Human Growth Hormone Locus and Adverse Pregnancy Outcomes.
24. USDA – Eastern Regional Research Center. 2004. Molecular Genetic Analysis of the Growth Hormone Locus, Adverse Pregnancy Outcomes and Rodent Molecular Evolution.
25. California State University – Pomona. 2004. Computational Analysis of the Human Growth Hormone Locus and Adverse Pregnancy Outcomes.
26. Virginia State University. 2004. Molecular Evolution: Phylogenetics, Relaxed Molecular Clocks and Phylogenetic Shadowing.
27. St. Jude Research Hospital. 2004. Genetics of Birth Weight Variation.
28. Rhodes College. 2005. Molecular Determination of Mammalian Relationships.

Selection of Papers/Posters Presented (20 total)

Paper Presentations:

- June 1996 Heterogeneous Nonsynonymous Replacement Rates and Structural Change of COII in Primates. Society for Molecular Biology and Evolution.
- June 1997 Structural and Functional Coevolution of Human Growth Hormone and its Receptor. Joint meeting of the Society of Systematic Biologists, Society for the Study of Evolution, and American Society of Naturalists.
- June 1999 Higher Level Molecular Systematics of Rodents. Joint meeting of the Society of Systematic Biologists, Society for the Study of Evolution, and American Society of Naturalists
- June 2000 Molecular Phylogeny and Divergence Dates of Major Rodent Lineages Based on Multiple Genes: Conflict and Compromise. Society for Molecular Biology and Evolution.
- Nov. 2003 Association Between Polymorphisms Upstream of Pituitary Growth Hormone and Term Birth Weight. International Genetic Epidemiology Society

Posters:

- October 1999 Molecular Evolution of the Multigene Growth Hormone Locus of Primates. 2nd Gordon Research Conference on Molecular Evolution.
- July 2002 Genomic Dynamics of the Growth Hormone Locus - Polymorphism Driven By Gene Conversion in Human. 1st Gordon Research Conference on Bioinformatics and Evolutionary Genomics.
- Nov. 2003 Accuracy and Efficiency of Bayesian and EM Inference of Haplotypes in the Presence of Gene Conversion. American Society of Human Genetics. *Am. J. Hum. Genet.* 2003. 73(5):382.
- Oct. 2004 Association of Polymorphisms in Pituitary Growth Hormone and IGF-1 with Fetal Growth Restriction. American Society of Human Genetics. Toronto, Canada.

Papers Published

1. **Adkins, R. M.**, McBee, K., Porter, C. A., Baker, R. J. 1991. Breakdown in a hybrid zone of *Peromyscus leucopus* and examination of the recombinational breakdown model. *J. Mamm.* 72:535-541.
2. **Adkins, R. M.**, and Honeycutt, R. L. 1991. A molecular phylogeny of the superorder Archonta. *Proc. Nat. Acad. Sci.* 88:10317-10321.
3. **Adkins, R. M.**, and Honeycutt, R. L. 1993. A molecular examination of archontan and chiropteran monophyly, pp. 227-250. In *Primates and their relatives in phylogenetic perspective* (R. D. MacPhee and J. G. Fleagle, eds.) Plenum, New York.
4. Honeycutt, R. L., and **Adkins, R. M.** 1993. Higher level systematics of eutherian mammals: an assessment of molecular characters and phylogenetic hypotheses. *Ann. Rev. Ecol. Syst.* 24:279-305.
5. **Adkins, R. M.**, and Honeycutt, R. L. 1994. Evolution of the primate cytochrome c oxidase subunit II gene. *J. Mol. Evol.* 38:215-231.
6. Miyamoto, M. M., Allard, M. W., **Adkins, R. M.**, Janecek, L. L., and Honeycutt, R. L. 1994. A congruence test of reliability using linked mitochondrial DNA sequences. *Syst. Biol.* 43:236-249.
7. Honeycutt, R. L., Nedbal, M. A., and **Adkins, R. M.** 1995. Mammalian mitochondrial DNA evolution: a comparison of the cytochrome b and cytochrome c oxidase II genes. *J. Mol. Evol.* 40:260-272
8. Janecek, L. L., Honeycutt, R. L., **Adkins, R. M.**, and Davis, S. K. 1996. Mitochondrial gene sequences and the molecular systematics of the artiodactyl subfamily bovinæ. *Mol. Phylo. and Evol.* 6:107-119.

9. **Adkins, R. M.**, Honeycutt, R.L., and Disotell, T. R. 1996. Evolution of eutherian cytochrome c oxidase subunit II: heterogeneous rates of protein evolution and altered interaction with cytochrome c. *Mol. Biol. Evol.* 13:1393-1404.
10. Bradley, R. D., **Adkins, R. M.**, Honeycutt, R. L., and McDonald, J. H. 1998. Nucleotide polymorphism at the alcohol dehydrogenase locus of pocket gophers, genus *Geomys*. *Mol. Biol. Evol.* 15:709-717.
11. **Adkins, R. M.**, and Li, W.-H. 1998. Horizontal Gene Transfer. Dating the age of the last common ancestor of all living organisms with a protein clock. New York: Chapman and Hall. 12 pp. (*Revised and second edition publication pending*)
12. **Adkins, R. M.**, Vandeberg, J., and Li, W.-H. 2000. Molecular evolution of growth hormone and receptor in the guinea pig, a mammal unresponsive to growth hormone. *Gene*. 246: 357-363.
13. **Adkins, R. M.**, Nekrutenko, A. and Li, W.-H. 2001. Bushbaby growth hormone is much more similar to nonprimate growth hormones than to rhesus monkey and human growth hormones. *Molecular Biology and Evolution*. 18:55-60.
14. Madsen, O., Scally, M., Douady, C. J., Kao, D. J., DeBry, R. W., **Adkins, R.**, Amrine, H. M., Stanhope, M. J., de Jong, W. W., and Springer, M. S. 2001. Parallel adaptive radiations in two major clades of placental mammals. *Nature*. 409:610-613.
15. Liu, J.-C., Makova, K. D., **Adkins, R. M.**, Gibson, S., and Li, W.-H. 2001. Molecular coevolution of growth hormone and its receptor in primates. *Molecular Biology and Evolution*. 18: 945-953.
16. **Adkins, R. M.**, Weinstein, D., Gelke, E., and Honeycutt, R. L. 2001. Multi-gene molecular phylogeny of rodents with estimates of divergence dates. *Molecular Biology and Evolution*. 18:777-791.
17. **Adkins, R. M.** 2003. Molecular coevolution. In *Nature encyclopedia of the human genome*. (D. Cooper, ed.) Nature Publishing Group, London. 5159 pp. (<http://www.ehgonline.net>)
18. Malia, M. J., **Adkins, R. M.**, and Allard, M. W. 2002. Molecular support for Afrotheria and the polyphyly of Lipotyphla based on analyses of the growth hormone receptor gene. *Molecular Phylogenetics and Evolution*. 24: 91-101.
19. **Adkins, R. M.**, Walton, A. H., and Honeycutt, R. L. 2003. Higher-Level Systematics of Rodents and Divergence Time Estimates Based on Two Highly Congruent Nuclear Genes. *Molecular Phylogenetics and Evolution*. 26:409-20.
20. Tucker, P. K., **Adkins, R. M.**, and Rest, J. S. 2003. Differential Rates of Evolution for the ZFY-related zinc finger genes, *Zfy*, *Zfx*, and *Zfa* in the mouse genus *Mus*. *Molecular Biology and Evolution*. 20:999-1005.
21. Steppan, S., **Adkins, R. M.**, and Anderson, J. 2004. Phylogeny and Divergence Date Estimates of Murid Rodents Based on Multiple Nuclear Genes. *Systematic Biology*. 53:533-553.
22. **Adkins, R. M.** 2004. Comparison of the Accuracy of Methods of Computational Haplotype Inference Using a Large Empirical Dataset. *BMC Genetics*. 5:22.
23. **Adkins, R. M.**, Campese, C., Vaidya, R., and Boyd, T. K. 2005. Association Between Fetal Growth Restriction and Polymorphisms At Sites -1 and +3 of Pituitary Growth Hormone: a Case-Control Study. *BMC Pregnancy and Childbirth*. 5:2.

Manuscript Submitted

1. **Adkins, R. M.**, and Boyd, T. K. Submitted. Association Between Genetic Polymorphism in the IGF-I Gene and Term Birth Weight. *Growth Hormone & IGF Research*.
2. **Adkins, R. M.**, Klauser, C., Boyd, T. K., and Morrison, J. Submitted. Association Between Leptin Gene Polymorphisms and Birth Weight Among Smaller Newborns. *Obesity Research*.