

**Ernest Bailey**

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**University Education**

University of California, Davis: B.S., 1973; MS, 1975; PhD, 1980

**Research and Professional Experience**

November 1979 to present: professor, Department of Veterinary Science, University of Kentucky

**Service in National and International Organizations (since 2010)**Editorial Boards

Editorial Consultant Board: *Equine Veterinary Journal* (January 2012-present)

Editorial Board: *BMC Genetics* (July 2005- present)

Associate Editor: *Journal of Heredity* (2004-present)

Editorial Board, *Animal Biotechnology* (1990- 2013).

Editorial Board: *Mammalian Genome* (December 2006-2013)

Editorial Board Member: *Animal Genetics* (elected 1988-2010).

Research Service

International Society of Animal Genetics (ISAG): President (elected 2010-2014; 2014-2016);

USDA-NRSP8; Species coordinator for the horse; (2008-2013; 2013-2018)

Coordinator for the International Equine Gene Mapping Workshop (1995-present).

Review Panels for Research Proposals

Panel Manager: USAD-NIFA ; Animal Breeding, Genetics and Genomics; May 20-24, 2013, Washington, DC

Panel member; USAID ; Technical Panel for Climate-resilient and Disease-resistant Livestock ; March 26, 2013.

Chair, Morris Animal Foundation Large Animal Scientific Advisory Board (LASAB): 2009-2012. Chair; 2010 -2012.

Review Team Member: 5-year USDA-ARS Animal Health National Program 103 Assessment; June-August 2012.

Panel Manager: USDA-NIFA ; Animal Breeding, Genetics and Genomics; October 24-27, 2011, Washington, DC

Panel Member: NIH; Animals as Models for Human Diseases. Bethesda, MD March 21-22, 2011.

Site Reviews

External Review Committee for NSF Peromyscus Stock Center, Columbia, SC 2007-2012.

Meeting Organization

Conference of the International Society of Animal Genetics; 2014 Organizing committee member, Xian, China.

Plant and Animal Genome Conference Organizing Committee (member) February 2012- January 2015.

World Congress on Genetics Applied to Livestock Production; Leipzig, Germany, August 1-5, 2010; Chair and Organizer of Horse Section.

**Graduate Student Committees (since 1983)**

In progress: Member of 4 committees, 2 as major advisor

Completed: Member of 56 committees, 13 as major advisor

**Undergraduate Teaching**

Instructor for VS 307 (3 units): Genetics of Horses; Fall 2014

Instructor for Gen-300-014 (2 units): Equine Infectious Diseases in the Genomics Era; Spring 2014; co-instructors U. Balasuriya and PJ Timoney.

Instructor for Gen-300-010 (3 units): Genetics of Horses; Fall 2013

Instructor for Discovery 130 (3 units): Hoof beats means Horses; Fall 2005- Fall 2008; Fall 2010 & Fall 2011.

Academic Advisor to undergraduates in Agricultural Biotechnology (6 in 2012-2013)

Research Advisor to 10 undergraduate students in Agricultural Biotechnology 1989-present.

**Mentoring High School Students**

Dunbar Math and Science High School Program: Mentor for 11 projects:

**University/College/Department Service (Since 2010)**

Veterinary Science Committees (Strategic Planning, APT, Evaluation) 2013-2015.

University Senate; 2012-2015; Representative from College of Agriculture.

Medical Center Clinical Sciences Area Advisory Committee (Sept 2009- August 2011)

**Honors**Invited plenary speaker at conferences:

Conference of the British Equine Veterinary Association; September 10-13, 2014; Birmingham, UK; 1) *Primer on Genomics and Heritability* 2) *What Genomics can do for the Horse and Vet.* 3) *The Genomic Age: Disease-free and Excelling.*

National Animal Breeding Center and Animal Production Promotion (NABC-APP); Tehran, Iran. May 25, 2014; Oral presentation. *"Horse Breeding and the Impact of Genomics"*.

National Conference on Undergraduate Research, Lexington, KY April 3-5, 2014; *"Messages written in DNA: A story of people and horses"*

5th International Scientific Conference on Turkmen Horse and Horse Breeding, April 26-28, 2013; Ashgabat, Turkmenistan. *Horse genomics and what it can tell us about horse breeds*.

Equine Affaire 2013; Ohio Expo Center, Columbus, OH; April 12, 2013; Two presentations entitled: *"What genomics tells us about horse breeds"* and *"What genomics can tell us about performance"*.

Havemeyer Equine Ophthalmology Conference: April 1-2, 2011; West Palm Beach Florida. *Horse Genomics*.

National Breeders Conference of the Pyramid Arabian Horse Society; September 16th, 2010; *"Messages to Breeders written in DNA"*, Atlanta, GA.

Thoroughbred Pedigree, Genetics and Performance Conference, September 7-8, 2011, Lexington, Kentucky; *Nature and Extent of Genetic Variation Among Thoroughbred Horses*.

30th Anniversary Havemeyer Workshop: August 17-20, 2011 Saratoga, NY; talk entitled: *Genetics and Genomics before and after Havemeyer*.

#### Invited Speaker at institutions

University of Delaware, Department of Animal Science; November 21, 2013; Seminar: *Equine Research Using Genomics*.

Northeast University of Agriculture Department of Animal Science, Xian, China; September 18, 2013. *Research on Horse Genomics and Equine Viral Arteritis*.

University of Sydney, Faculty of Veterinary Science. "Genetics and Equine Viral Arteritis: How can we utilize the horse genome to learn about infectious diseases?" July 12, 2012.

University of Kentucky Endowed Chairs and Professor's First Friday Lecture; November 4, 2011; Book review of Maryjean Wall's "How Kentucky Became Southern".

Larsen Lecture; Washington State University, Pullman, May 16-17, 2011. *"Horse Whole-Genome Sequence: Messages Written in DNA"*.

Washington State University, Pullman. May 17, 2011: Larsen Distinguished Speaker Series: *"Genome Wide Association Studies (GWAS) for Horse Diseases: Opportunities and Early Lessons"*

#### **Book**

Bailey, E & S A Brooks (2013) *Horse Genetics*, 2<sup>nd</sup> Edition. CABI publisher, Oxford, UK.

#### **Patent**

Bailey E., Brooks SA (2012) Method for Screening for a Tobiano Coat Color Genotype. U.S. Patent Application S.N. 12/353,524 - UKRF 1484 - Docket 434-356 (January 24, 2012)

#### **Refereed Publications**

Petersen JL, Mickelson JR, Cothran EG, Andersson LS, Axelsson J, Bailey E, Bannasch D, Binns MM, Borges AS, Brama P, Machado AC, Distl O, Felicetti M, Fox-Clipsham L, Graves KT, Guérin G, Haase B, Hasegawa T, Hemmann K, Hill EW, Leeb T, Lindgren G, Lohi H, Lopes MS, McGivney BA, Mikko S, Orr N, Penedo MCT, Piercy RJ, Raekallio M, Rieder S, Røed KH, Silvestrelli M, Swinburne J, Tozaki T, Vaudin M, Wade CM, McCue M. (2013) Genetic diversity in the modern horse illustrated from genome-wide SNP data. *PLoS One* 8: e54997.

Petersen JL, Mickelson JR, Rendahl AK, Valberg SJ, Andersson LS, Axelsson J, Bailey E, Bannasch D, Binns MM, Borges AS, Brama P, Machado AC, Capomaccio S, Cappelli K, Cothran EG, Distl O, Fox-Clipsham L, Graves KT, Guérin G, Haase B, Hasegawa T, Hemmann K, Hill EW, Leeb T, Lindgren G, Lohi H, Lopes MS, McGivney BA, Mikko S, Orr N, Penedo MCT, Piercy RJ, Raekallio M, Rieder S, Røed KH, Swinburne J, Tozaki T, Vaudin M, Wade CM, McCue. (2013) Genome-wide analysis reveals selection for important traits in domestic horse breeds. *PLoS Genetics* 9: e1003211

Go YY, Bailey E, Timoney PJ, Shuck KM and Balasuriya UBR (2012) *In vitro* susceptibility of CD3<sup>+</sup> T lymphocytes to equine arteritis virus infection reflects genetic predisposition of naturally infected stallions to become carriers of the virus. *Journal of Virology* 86: 12407-12410.

McCue, ME, Bannasch DL, Petersen JL, Bailey E, Binns E, Distl O, Guerin G, Hasegawa T, Hill EW, Leeb T, Lindgren G, Penedo MCT, Roed KH, Ryder OA, Swinburne JE, Tozaki T, Valberg SJ, Vaudin M, Lindblad-Toh K, Wade CM, Mickelson JR. (2012) A high density SNP array for the domestic horse and extant perissodactyla: utility for association mapping, genetic diversity and phylogeny studies. *PLoS Genetics*: 8: e1002451

Binns M., Boehler D., Bailey E., Lear T., Cardwell J., Lambert D. (2012) Inbreeding in the Thoroughbred horse. *Animal Genetics* 43: 340-342.

- Go, Y.Y., Bailey E., Cook D., Coleman S., MacLeod J., Chen K-C, Timoney P., and Balasuriya U.B. (2011) Genome-Wide Association Study Among Four Horse Breeds Identifies a Common Haplotype Associated with the In Vitro CD3+ T Cell Susceptibility/Resistance to Equine Arteritis Virus Infection. *J. Virol.* 85:13174-13184
- Tseng CT, D. Miller D, Cassano J, Bailey E and Antczak DF (2010) Molecular Identification of Equine Major Histocompatibility Complex Haplotypes using Polymorphic Microsatellites. *Animal Genetics* 41 (supl 2): 150-153.
- Cook D, Gallagher PC and Bailey E (2010) Genetics of Swayback in American Saddlebred Horses. *Animal Genetics* 41 (supl 2): 64-71.
- Brooks SA & Bailey E (2010) RT-qPCR Comparison of Mast Cell Populations in Whole Blood from Healthy Horses and those with Laminitis. *Animal Genetics* 41 (supl 2): 16-22.
- Holl H., Brooks S & Bailey E. (2010) *De novo* mutation of *KIT* discovered as a result of non-hereditary white coat color pattern. *Animal Genetics* 41(supl2): 196-198.
- Bellone RB, Forsyth G., Leeb T, Archer S, Sigurdsson S, Mauceli E., Enquensteiner M., Bailey E., Sandmeyer L, Grahn, B (2010) Fine mapping and mutation analysis of *TRPM1*, a candidate gene for *Leopard Complex (LP)* spotting and congenital stationary Night Blindness (CNSB) in horses. and Fine Mapping the Leopard Complex (LP) Spotting Gene and Congenital Stationary Night Blindness (CSNB) in Horses. *Briefings in Functional Genomics and Proteomics* 9:193-207
- Wade CM, Giulotto E, Sigurdsson S, Zoli M, Gnerre S, Imsland F, Lear TL, Adelson DL, Bailey E, Bellone RR, Blöcker H, Distl O, Edgar RC, Garber M, Leeb T, Mauceli E, MacLeod JN, Penedo MCT, Raison JM, Sharpe T, Vogel J, Andersson L, Antczak DF, Biagi T, Binns MM, Chowdhary BP, Coleman SJ, Della Valle G, Fryc S, Guérin G, Hasegawa T, Hill EW, Jurka J, Kiialainen A, Lindgren G, Liu J, Magnani E, Mickelson JR, Murray J, Nergadze SG, Onofrio R, Pedroni S, Piras MF, Raudsepp T, Rocchi M, Røed KH, Ryder OA, Searle S, Skow L, Swinburne JE, Syvänen AC, Tozaki T, Valberg SJ, Vaudin M, White JR, Zody MC (2009) Genome sequence, comparative analysis and population genetics of the domestic horse (*Equus caballus*). *Science* 326: 865-867.

#### **Book Chapters, Reviews & Editorials**

- Bailey, E. (2014) Five things equine veterinarians should know about genomics. *Equine Veterinary Journal* 46: 404-407.
- Bailey, E (2014) Heritability and the Equine Clinician. *Equine Veterinary Journal* 46:12-14.
- Bailey E (2011) Editorial: Screening for Foal Immunodeficiency Syndrome. *Veterinary Record* 169: 653-654.
- Bailey E (2011) Relevance of Genomics to Equine Reproduction. In: (EL Squires, WE Vaala, and DD Varner, editors) *Equine Reproduction*. Blackwell Publishing. Chapter 298, p 2827-2831.
- Bailey E (2011) Equine Parentage. In: (AO McKinnon, EL Squires, WE Vaala, and DD Varner, editors) *Equine Reproduction*. Blackwell Publishing. Chapter 297, p 2820-2826.