

MARK F. HAUSSMANN

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Department of Biology

Kenyon College

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EDUCATION

- Ph.D. Iowa State University, Ames IA 2000 – 2005
Interdepartmental Graduate Program in Ecology and Evolutionary Biology
Advisor: Carol M. Vleck
• Dissertation: The Evolution of Avian Lifespan
- M.S. Iowa State University, Ames, IA 1997 – 1999
Major in Physiology of Reproduction and Applied Ethology
Advisor: Donald C. Lay, Jr.
• Thesis: Prenatal stress alters behavior and physiology
- B.A. Wartburg College, Waverly, IA 1993 – 1997
Major: Biology
Minor: Environmental studies

PROFESSIONAL EXPERIENCE

- NSF Postdoctoral Fellow and Visiting Professor**, Department of Biology, Kenyon College, Gambier, Ohio 2006 -current
- Visiting Assistant Professor**, Department of Biology, Swarthmore College, Swarthmore, Pennsylvania 2005 – 2006
- Graduate Research and Teaching Assistant**, Department of Ecology, Evolution and Organismal Biology (formerly the Department of Zoology and Genetics), Iowa State University. Ames, Iowa. 2000 – 2005
- Graduate Research and Teaching Assistant**, Department of Animal Science, Iowa State University. Ames, Iowa. 1997 – 1999
- Laboratory Technician**, National Animal Disease Center, Ames Iowa. 1997 – 1998

TEACHING EXPERIENCE

Lecture and Laboratory Instructor (Kenyon College)

S07 Physiological Ecology and Life History Evolution (Bio 392)

F07 Introduction to Experimental Molecular Biology (Bio 111)

Lecture and Laboratory Instructor (Swarthmore College)

F05 Animal Physiology (Bio 20)

S06 Organismal and Population Biology (Bio 2)

S06 Biology of Aging (Bio 127)

Program Coordinator – Seminar Instructor (Iowa State University)
S04, F03, S03, F02 Undergraduate Mentoring in Environmental Biol (Zool 492)

Teaching Assistant – Laboratory Instructor
S05, 04, 03, 02, 01 Comparative Endocrinology Lab (Iowa State - Zool 454/554)
S99 Animal Anatomy and Physiology Lab (Iowa State - AnS 217)
S00, 99, 98 Animal Physiology and Behavior Lab (Iowa State - AnS 224)
F00, 99, 98, 997 Animal Behavior and Welfare (Iowa State - AnS 336)

Guest Lecturer
S07 From Cell to Organism (Kenyon - Biol 113)
S07 Genetics and Development of Organisms (Kenyon - Biol 114)
F05, 04, 03, 02 Intermediate Physiology (Iowa State - Zool 201)
S05, 04, 03, 01, 00 Comparative Endocrinology (Iowa State - Zool 454/554)
S01 Animal Physiology and Behavior (Iowa State - AnS 224)
S00 Animal Anatomy and Physiology (Iowa State - AnS 217)
S00 Orientation in Animal Science (Iowa State - AnS 110)
F99, 98, 97 Animal Behavior and Welfare (Iowa State - AnS 336)

GRANTS

NSF grant, RUI: Telomere Dynamics and Individual Quality. M.F. Haussmann and R.A. Mauck, co-PI's (\$535,227)	2005 – 2008
Swarthmore Faculty Research Support Grant. (\$1000)	2005 – 2006
Doctoral Dissertation Improvement Grant, NSF. An Investigation of the evolution of telomere regulation and longevity. (\$11,930)	2004 – 2005
NIH grant, Avian models of aging: telomeres and oxidative damage. C.M. Vleck and M.F. Haussmann, co-PI's (\$67,215)	2003 – 2004
AOU Research Award, American Ornithologist's Union (\$1,730)	2003
Glenn/AFAR, American Federation for Aging Research. How do long- lived organisms delay senescence – development of appropriate models and techniques. (\$5000)	2002 – 2003
Sigma Xi, Grant-in Aid of Research (\$500)	2002
Joseph Grinnell Research Award, Coopers Ornithological Society (\$1000)	2002
Walter Nicolai Award for Meritorious Basic Biologic Aging Research, American Aging Association (\$500)	2002

PUBLICATIONS (* PAPER INCLUDES AN UNDERGRADUATE AUTHOR ADVISEE)

Haussmann, M.F. & R.A. Mauck. 2007. Telomeres and longevity: testing an evolutionary hypothesis. In press, *Molecular Biology and Evolution*.

Haussmann, M.F. & R.A. Mauck. 2007. New strategies for telomere-based age estimation. In press, *Molecular Ecology Notes*.

Haussmann, M.F., D.W. Winkler., C.E. Huntington, I.C.T. Nisbet, & C.M. Vleck. 2007. Telomerase activity is maintained throughout the lifespan of long-lived birds. *Experimental Gerontology* 42:610-618, DOI:10.1016/j.exger.2007.03.004.

Haussmann, M.F., C.M. Vleck, & E.S. Farrar. 2007. A laboratory protocol for stress assessment in undergraduate students using a cortisol ELISA. *Advances in Physiology Education* 31: 110-115. DOI:10.1152/advan.00058.2006.

Vleck, C.M., **M.F. Haussmann,** & D. Vleck. 2007. Avian senescence: underlying mechanisms. *Journal of Ornithology*. DOI 10.1007/s10336-007-0186-5.

- Monaghan, P. & **M.F. Haussmann**. 2006. Telomere dynamics: Linking lifestyle and lifespan? *Trends in Ecology & Evolutionary Biology (TREE)*. 21(1):47-53.
- Juola, F.A., **M.F. Haussmann**, D.C. Dearborn, & C.M. Vleck. 2006. Telomeres provide insight into lifespan and age structure of a long-lived marine bird. *The Auk* 123(3): 775-783.
- * Scott, N., **M.F. Haussmann**, C.M. Vleck, & R. Elsey. 2006. The relationship between telomere length and body length in *Alligator mississippiensis*. *Southeastern Naturalist* 5(4):685-692.
- Haussmann, M.F.**, D.W. Winkler, & C.M. Vleck. Longer telomeres associated with higher survival in birds. 2005. *Biology Letters* 1(2):212-214.
DOI: 10.1098/rsbl.2005.0301.
- * **Haussmann, M.F.**, D.W. Winkler, C.E. Huntington, D. Vleck, C.E. Sanneman, D. Hanley & C.M. Vleck. 2005. Cell-mediated immunosenescence in birds. *Oecologia* 145(2):270-275. DOI: 10.1007/s00442-005-0123-3
- Haussmann, M.F.**, D.W. Winkler., C.E. Huntington, I.C.T. Nisbet, & C.M. Vleck. 2004. Telomerase expression is differentially regulated in birds of differing life span. *Annals of the New York Academy of Sciences*, 1019:186-190.
- Haussmann, M.F.** D.W. Winkler, K.M. O'Reilly, C.E. Huntington, I.C.T. Nisbet, & C.M. Vleck. 2003. Telomeres shorten more slowly in long-lived birds and mammals than in short-lived ones. *Proceedings of the Royal Society of London: Biological Sciences*, 270(1522):1387-1392. DOI 10.1098/rspb.2003.2385.
- Haussmann, M.F.**, C.M. Vleck, & I.C.T. Nisbet. 2003. Calibrating the telomere clock in common terns, *Sterna hirundo*. *Experimental Gerontology*, 38(7):787-790.
- Vleck, C.M., **M.F. Haussmann**, & D. Vleck. 2003. The natural history of telomeres: tools for aging animals and exploring the aging process. *Experimental Gerontology*, 38(7):791-796.
- Haussmann, M.F.**, & C.M. Vleck. 2001. Telomere length provides a new technique for aging animals. *Oecologia*, 130(3):325-328.
- Haussmann, M.F.**, J.A. Carroll, G.D. Weesner, M.J. Daniels, & D.C. Lay, Jr. 2000. Administration of adrenocorticotrophic hormone to pregnant sows alters their pigs' hypothalamic-pituitary-adrenal axis. *Journal of Animal Science*, 78(9):2399-411.
- Lay, D.C., Jr., & **M.F. Haussmann**. 2000. Hoop housing for feeder pigs offers a welfare friendly environment compared to a nonbedded confinement system. *Journal of Applied Animal Welfare Science*, 3(1):33-48.
- * **Haussmann, M.F.**, D.C. Lay, Jr., H.S. Buchanan, & J.G. Hopper. 1999. Butorphanol tartrate acts to decrease sow activity which may lead to reduced piglet crushing. *Journal of Animal Science*, 77(8):2054-2059.
- * Lay, D.C., Jr., H.S. Buchanan, & **M.F. Haussmann**. 1999. A note on simulating the 'observer effect' using constant photoperiod on nursery pigs. *Applied Animal Behaviour Science*, 63(4):301-309
- * Lay, D.C., Jr., **M.F. Haussmann**, H.S. Buchanan, & M.J. Daniels. 1999. Danger to piglets due to crushing can be reduced by the use of a simulated udder. *Journal of Animal Science*, 77(8):2060-2064.
- Biensen, N.J., **M.F. Haussmann**, D.C. Lay, Jr., L.L. Christian, & S.P. Ford. 1999. The relationship between placental and piglet birth weights and growth traits. *Animal Science*, 68:709-715.

PUBLICATIONS IN REVIEW (* PAPER INCLUDES AN UNDERGRADUATE AUTHOR ADVISEE)

- Haussmann, M.F.**, D.W. Winkler, R.A. Mauck & C.M. Vleck. **2007**. Heritability, telomere length, and survival in tree swallows. In review: *Molecular Ecology*.
- * Vaughn, E.A., M. Pott, R.A. Mauck, & **M.F. Haussmann**. **2007**. Plasma carotenoid concentration and foot color correspond to oxidative stress in the black guillemot (*Cephus grylle*). In review: *Functional Ecology*.
- * Zangmeister, J.L., J.C. Cerchiara, C.E. Huntington, **M.F. Haussmann**, R.A. Mauck. **2007**. Sex and individual quality may mediate trade-offs in a long-lived seabird, Leach's storm-petrel (*Oceanodroma leucorhoa*). In review: *Ecology*.

INVITED SEMINARS

- 2007 Aging and longevity in birds: telomere dynamics. The College of Wooster Seminar Series. Wooster, Ohio.
- 2005 Telomere dynamics: aging, survival, and lifespan in birds – all's well that ends well. Zoological Laboratory, University of Groningen, Haren, The Netherlands.
- 2004 Telomeres, aging and birds. Kenyon College Seminar Series. Gambier, Ohio.
- 2001 Aging animals using telomere length – a novel approach. Graduate Research in Evolutionary Biology and Ecology Spring Symposium. Ames, Iowa.
- 2000 The transition from student to scientist: graduate school training. Wartburg College Tri-Beta Invited Speaker, Waverly, Iowa.
- 1999 The Physiology and Behavior of Offspring whose Dams experienced prenatal stress. USDA, NCR-89 Committee on Swine Management Annual Meeting, Ames Iowa

PRESENTED PAPERS (* I WON BEST PRESENTATION AT MEETING; † PRESENTATION GIVEN BY AN

UNDERGRADUATE ADVISEE; ‡ ABSTRACT INCLUDES AN UNDERGRADUATE AUTHOR ADVISEE)

- † 2007 Kreft J.M., J.T. Nauseef, J.P. Lee, Z.D. Rodd, J.H. Kim, & **M.F. Haussmann**. Does exercise affect oxidative damage in Bengalese Finches (*Lonchura domestica*)? *Society of Integrative and Comparative Biology*. Phoenix.
- † 2007 Vaughn, E.A., M. Pott, M.K. Moe, R.A. Mauck, & **M.F. Haussmann**. The Parent Trap: Breeding black guillemots (*Cephus grylle*) in better body condition have higher levels of lipid peroxidation. *Society of Integrative and Comparative Biology*. Phoenix.
- † 2007 Moe, M.K., E.A. Vaughn, R.A. Mauck, & **M. F. Haussmann**. Fair Weather Food: The effect of weather variation on total plasma antioxidant levels of Leach's storm-petrels. *Society of Integrative and Comparative Biology*. Phoenix.
- † 2007 Cerchiara, J.A., J.L. Zangmeister, **M.F. Haussmann**, & R.A. Mauck. Immunosenescence in a long-lived seabird. *Society of Integrative and Comparative Biology*. Phoenix.
- † 2007 Zangmeister, J.L., J.A. Cerchiara, **M.F. Haussmann**, & R.A. Mauck. Inner beauty in a monomorphic species: immune quality influences mate-choice in Leach's storm-petrel (*Oceanodroma leucorhoa*). *Society of Integrative and Comparative Biology*. Phoenix.
- † 2006 Keely, K., J. Kreft, J. Nauseef, L. Reynolds, S.M. Hiebert, & **M.F. Haussmann**. Recombinant human erythropoietin reduces time to exhaustion during endurance running in *Phodopus sungorus*, or, Sex (female), drugs (EPO), and a roll (lot of running). *Society of Integrative and Comparative Biology*. Orlando.

- 2005 **Haussmann, M.F.**, D.W. Winkler, & C.M. Vleck. Longer telomeres may confer an individual survival advantage in a wild bird. *Society of Integrative and Comparative Biology*. San Diego.
- † 2005 Paitz, R.T., **M.F. Haussmann**, R.M. Bowden, F.J. Janzen, & C.M. Vleck. Long telomeres may minimize the effect of aging in the painted turtle. *Society of Integrative and Comparative Biology*. San Diego.
- 2005 Reid, A.M., **M.F. Haussmann**, A.M. Bronikowski, & C.M. Vleck. Age determination using average telomere length and bone growth rings in the western terrestrial garter snake (*Thamnophis elegans*). *Society of Integrative and Comparative Biology*. San Diego.
- 2004 **Haussmann, M.F.**, D.W. Winkler, C.E. Huntington, I.C.T. Nisbet, & C.M. Vleck. Telomerase expression and lifespan: the short and long of it. *Society of Integrative and Comparative Biology*. New Orleans. Integrative and Comparative Biology 43(6):902.
- † 2004 Scott, N., **M.F. Haussmann**, C.M. Vleck, R. Elsey, & P. Trosclair. The relationship between telomere length and body length in *Alligator mississippiensis*. *17th Working Meeting of the IUCN-SSC Crocodile Specialist Group*. Darwin, Australia.
- † 2004 Cribbs, A.M., **M.F. Haussmann**, & C.M. Vleck. Effects of aging on glucocorticoids and immune responses in zebra finches. *Society of Integrative and Comparative Biology*. New Orleans. Integrative and Comparative Biology 43(6):84.
- * 2003 **Haussmann, M.F.**, D.W. Winkler, C.E. Huntington, I.C.T. Nisbet, & C.M. Vleck. Telomerase expression is differentially regulated in birds of different life span. *International Association of Biomedical Gerontology, 10th Congress* Cambridge, England.
- 2003 **Haussmann, M.F.** & C.M. Vleck. Switch it on, switch it off: Telomerase may provide a rescue effect at the end of life. *American Ornithologist's Union*, Champagne, Illinois.
- 2003 **Haussmann, M.F.**, C.M. Vleck & I.C.T. Nisbet. Calibrating the telomere clock in common terns, *Sterna hirundo*. *Symposium on Organisms with Slow Aging*, USC, California.
- 2003 Vleck, C.M., **M.F. Haussmann** & D. Vleck. **2003**. The Natural History of Telomeres: Tools for Aging Animals and Exploring the Aging Process. *Symposium on Organisms with Slow Aging*, USC, California.
- * 2003 **Haussmann, M.F.**, D.W. Winkler, K.M. O'Reilly, C.E. Huntington, I.C.T. Nisbet, & C.M. Vleck. Telomere shortening in birds varies with life span. *Society of Integrative and Comparative Biology*. Toronto, Canada. Integrative and Comparative Biology 42(6): 1241.
- * 2002 **Haussmann, M.F.**, D.W. Winkler, K.M. O'Reilly, C.E. Huntington, & C.M. Vleck. Teaching an old bird new tricks: Does telomere length increase with age in long-lived birds? *North American Ornithological Conference*. New Orleans, Louisiana.
- * 2002 **Haussmann, M.F.**, D.W. Winkler, K.M. O'Reilly, C.E. Huntington, & C.M. Vleck. Can an old bird be taught new tricks? Telomere length increases with age in a long-lived bird. *American Aging Association*. San Diego, California.
- ‡ 2002 Lay, Jr. D.C., **M.F. Haussmann**, P.A. Reilly, & R.K. Anthony. A breed comparison of some post-parturient sow behaviors related to maternal ability. *International Society for Applied Ethology*. East Lansing, Michigan. Applied Animal Behaviour Science.

- * 2001 **Haussmann, M.F.**, & C.M. Vleck. Telomere length provides a new technique for aging animals. *Cooper's Ornithological Society*. Albuquerque, New Mexico.
- ‡ 2001 **Haussmann, M.F.**, C.M. Vleck, & S.A. Brenner. Aging animals using telomere length – a novel approach. *Society of Integrative and Comparative Biology*. Chicago, Illinois.
- 2000 **Haussmann, M.F.**, J.A. Carroll, G.D. Weesner, M.J. Daniels & D.C. Lay, Jr. Stress during prenatal development alters offspring physiology in swine. *North American Physiology and Endocrinology*. Strawberry point, Iowa.
- ‡ 2000 Lay, Jr. D.C., **M.F. Haussmann**, M.J. Daniels, J.D. Harmon, & T.L. Richard. Identification of factors important in managing deep bedded vs. non-bedded confinement (NBC) facilities for swine. *J. Anim. Sci.*
- 2000 **Haussmann, M.F.**, J.A. Carroll, G.D. Weesner, M.J. Daniels & D.C. Lay, Jr. Exogenous ACTH administration during gestation alters offspring development, immune function and behavior. *J. Anim. Sci.* 78 (Suppl 1).
- 2000 Lay Jr. D.C., & **M.F. Haussmann**. The evaluation of well-being in early weaned pigs as measured by adaptability. *J. Anim. Sci.* 78 (Suppl 1).
- ‡ 2000 Lay Jr., D.C., **Haussmann, M.F.**, M.J. Daniels, J.D. Harmon, & T.L. Richard. Identification of factors in managing deep bedded vs. non-bedded confinement facilities for swine. *Appl. Anim. Bhv. Sci.*
- 2000 Lay Jr., D.C., **Haussmann, M.F.**, & M.E. Wilson. Effects of exogenous corticosterone during development on the physiology and behavior of chickens. *J. Anim. Sci.*
- 1999 **Haussmann, M.F.** & D.C. Lay, Jr. A comparison of peri- and post-parturient behavior in Yorkshire (Y) and Meishan (M) gilts. *J. Anim. Sci.* 77 (Suppl 1).
- 1999 **Haussmann, M.F.**, J.A. Carroll, G.D. Weesner, & D.C. Lay, Jr. ACTH injections during gestation alter the piglet's HPA axis. *Iowa Academy of Science*.
- 1999 **Haussmann, M.F.**, J.A. Carroll, G.D. Weesner, & D.C. Lay, Jr. Administration of ACTH to pregnant sows alters their pigs' hypothalamic-pituitary-adrenal (HPA) axis. *J. Anim. Sci.* 77 (Suppl 1):222.
- 1998 **Haussmann, M.F.**, D.C. Lay, Jr., N.J. Biensen, S.P. Ford, M.J. Daniels, & L.L. Christian. Birth order, weight and interval have no apparent affect on teat order. *J. Anim. Sci.* 76 (Suppl 2):67.
- ‡ 1998 **Haussmann, M.F.**, D.C. Lay, Jr., H.S. Buchanan, & M.J. Daniels. Danger to piglets due to crushing can be reduced by the use of a simulated udder. *J. Anim. Sci.* 76 (Suppl 1):99.
- *‡ 1998 **Haussmann, M.F.**, D.C. Lay, Jr., H.S. Buchanan, & J.G. Hopper. Butorphanol acts as an apunitive agent to decrease piglet crushing via decreased sow activity. *Appl. Anim. Bhav. Sci.*

ARTICLES REVIEWING MY WORK

- 2006 National Wildlife - 45(1)
- 2005 New Scientist – 186(2499):19
- 2003 Discover – 25(1):51
- 2003 Science – 300(5626):1653
- 2003 New Scientist – 178(2396):19
- 2001 National Public Radio - <http://toddsow.org/log/dailylistings/12192001.asp>
- 2001 New Scientist – 172(2318):25

AWARDS

Research Excellence Award, Iowa State University	2005
Best Presentation, International Association of Biomedical Gerontology. Cambridge, England.	2003
Best Student Presentation in the Division of Comparative Physiology and Biochemistry, Society for Integrative and Comparative Biology Annual Meeting. Toronto, Canada.	2003
Nellie Johnson Baroody Award for Best Presentation, 3 rd North American Ornithological Conference. New Orleans, Louisiana.	2002
Walter Nicolai Award for Best Presentation, American Aging Association Annual Meeting. San Diego, California.	2002
3 rd North American Ornithological Conference Travel Award. New Orleans, Louisiana.	2002
American Aging Association Annual Meeting Travel Award. San Diego, California.	2002
Teaching Excellence Award, Iowa State University	2002
A. Brazier Howell Award for Best Presentation, Coopers Ornithological Society Annual Meeting. Albuquerque, New Mexico.	2001
Best Presentation, International Society for Applied Ethology Annual Meeting. East Lansing, Michigan.	1998
Partnership for Academic Competition Excellence Award, Iowa State University	1997

PROFESSIONAL AFFILIATIONS

Sigma Xi
American Association for Advancement of Science
The Society for Integrative and Comparative Biology
Ecological Society of America
Physiological Ecology Section of the Ecological Society of America
American Ornithologist's Union
Cooper Ornithological Society
The Waterbird Society
North American Physiology and Endocrinology

PROFESSIONAL SERVICE

2005 – 2007 NSF grant reviewer
2003 – 2007 Manuscript referee for *Trends in Ecology and Evolutionary Biology*;
Functional Ecology; *Molecular Ecology*, *Oecologia*; *Zoo Biology*
2003 – 2004 Vice President, Graduate Student Organization for Ecology and
Evolutionary Biology
2003 – 2004 Faculty Meeting Graduate Student Representative, Department of
Ecology Evolution and Organismal Biology
1999 – 2000 President, Graduate Student Organization, Department of Animal
Science