

ALAN H. KRAKAUER

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CURRENT POSITION

University of California, Davis. Dept. of Evolution and Ecology (2012 – present)

Assistant Project Scientist and Lecturer. I am a Co-PI on an NSF-funded project to study the interaction between foraging ecology, courtship behavior, and mating success in lekking Greater Sage-grouse (*Centrocercus urophasianus*).

EDUCATION

Post-doc University of California, Davis. Dept. of Evolution and Ecology (2005-12)

Behavior, ecology, acoustics, and conservation of lekking Greater Sage-grouse (*Centrocercus urophasianus*).
Advisor: G. Patricelli.

Ph.D. University of California, Berkeley. Dept. of Integrative Biology (Fall 2005)

Dissertation: *The Evolution of Cooperative Male Courtship: Kin Selection and the Mating system of the Wild Turkey* (*Meleagris gallopavo*)

W. Koenig and E. Lacey (co-chairs), S. Beissinger, R. Dudley, and N. Johnson.

B.S. Cornell University, Dept. of Biology (1996)

High Honors, concentration in Ecology and Systematics

TEACHING EXPERIENCE

University of California, Davis.

Introduction to Evolution (EVE 100). Instructor. Fall 2012 & 2013, Winter & Spring 2017

Behavioral Ecology (WFC 141). Instructor. Winter 2016

Animal Behavior (NPB 102). Co-Instructor. Summer 2013

Graduate Group Core Course, Animal Behavior (ANB/PSC 218B). Co-Instructor. 2007-16

Animal Behavior (ANB 102). Guest lecture. 2007

Animal Communication (EVE 107). Guest lecture. 2006-2014

Behavioral Ecology (WFC 141). Guest lecture 2008, 2010

Freshman Seminar in Sexual Selection. Guest Instructor 2009

University of California, Berkeley.

Animal Behavior (ESPM 126C/IB 144). Instructor. Fall 2015.

Research Reviews in Animal Behavior (IB C204). Coordinator for seminar/discussion series. 2004-5

Behavioral Ecology (IB 146). Grader and course coordinator. 2004

Animal Behavior (IB 144). Teaching Assistant and coordinator, 2002-3

Mammalogy (IB 173/173L). Teaching assistant (lab). 2001

Field Ecology Section (Bio 1B). Teaching Assistant and co-developer of special section of Intro Biology course. 1998-1999. Course received UCB Ed. Initiatives Award.

Introductory Biology (Bio 1B). Teaching Assistant. 2000, 2004

MENTORSHIP EXPERIENCE

University of California, Davis

Trained and supervised 44 post-graduate field interns.

Trained and supervised approximately 300 undergraduates (~70% female, more than 40 from underrepresented groups), including 2 honors theses, 6 senior practica, 2 Biology Undergraduate Scholars Program participants, 1 Davis Honors Challenge student, and 1 McNair Scholar. Mentored 3 high-school interns (Youth Scholars Program and FASTRACK program). Lab received campus-wide recognition for undergraduate mentorship in 2012 and 2016.

Completed *Entering Mentoring* workshop (Bio Undergrad Scholars Program).

University of California, Berkeley

Trained and supervised 5 undergraduates, 9 post-graduate field interns.

Mentored 10 undergraduate teaching assistants in 3 separate courses.

Cornell University

Trained and supervised 5 laboratory and field assistants.

GRANTS

Current Funding: Co-PI, NSF IOS-1258217 with PI Gail Patricelli/UC Davis and Jennifer Forbey/Boise State University, 2013-2016

National Science Foundation: Co-PI, NSF IOS-0925038, 2009-2012

Doctoral Dissertation Improvement Grant, 2001-2004. International Scholar Travel Award, 2006

American Ornithologist's Union: Student Research Award, 2001. Marsha Tucker Brady Student Travel Awards, 2002 & 2004. Postdoctoral Scholar Travel Award, 2009

Animal Behavior Society: Student Research Award, 2001

Bureau of Land Management Co-writer (2016), supplement. (PI- Patricelli)

Sigma Xi: Grant in aid of Research, 2000.

University of California Berkeley: Internal grants from the Department of Integrative Biology and the Museum of Vertebrate Zoology totaling more than \$20,000

University of California Davis: Postdoctoral Scholar's Association Travel Award, 2006
Academic Federation Travel Award, 2012

Wyoming Sage-grouse Conservation Fund, Sweetwater Local Working Group. 2016.
Co-writer (PI- Patricelli).

AWARDS

American Ornithologists' Union: Nellie Johnson Baroody Award, student paper 2004
Animal Behavior Society: Warner Clyde Allee student award (honorable mention), 2005
National Science Foundation: Graduate Research Fellowship, 1999
Museum of Vertebrate Zoology: Joseph Maillard Fellowship, 2003, 2005
University of California Davis Office of Research: Postdoctoral Fellowship, Laboratory Management Institute, 2006-2007

RESEARCH EXPERIENCE

University of California, Davis: Department of Neurobiology and Behavior (2014).
Project lead for telemetry study on proximate cues for timing of migration in white-crowned sparrows. Supervised two technicians.

University of California, Berkeley: Museum of Vertebrate Zoology (2005). Curatorial Assistant, Mammal Collection.

Cornell University: Department of Psychology. (1997-1998). Laboratory Technician, conducted research on development of behavior in captive Zebra Finch.

KEY PUBLICATIONS (* denotes undergraduate co-author)

Patricelli, G.L., **Krakauer, A.H.**, Taff, C.C. (2016) Variable signals in a complex world. *Advances in the Study of Behavior*. 48: 319-386.

Krakauer A.H. et al*., 2016. Successfully mating male sage-grouse show greater laterality in courtship and aggressive interactions. *Animal Behaviour* 11: 261-267. (includes 4 undergraduates as co-authors)

Diaz-Muñoz, S. et al., 2014. Cooperating to compete: altruism, sexual selection and causes of male reproductive cooperation. *Animal Behaviour* 88: 67-78.

Blickley et al., 2012. Experimental chronic noise is related to elevated fecal corticosteroid metabolites in lekking male greater sage-grouse (*Centrocercus urophasianus*). *PLoS One* 7: article e50462. Includes one post-grad field assistant as a co-author.

Blumstein, D.T. et al., 2011. Acoustic monitoring in terrestrial environments: applications, technological considerations, and prospectus. *Journal of Applied Ecology*. 48: 758-767.

Patricelli, G.L. & **A.H. Krakauer**. 2010. Tactical allocation of display effort reduces trade-offs among multiple sexual signals in greater sage-grouse: an experiment with a robotic female. *Behavioral Ecology* 21: 97-106.

Krakauer, A.H. 2008. Sexual selection and the genetic mating system of Wild Turkeys. *Condor* 110(1): 1-12.

Krakauer, A.H. 2005. Kin selection and cooperative courtship in wild turkeys. *Nature* 434:69-72.

OTHER PUBLICATIONS (* denotes undergraduate co-author)

- Forbey, J.S. et al.* (2017). Emerging technology to measure habitat quality and behavior of grouse: examples from studies of Greater Sage-grouse. *Wildlife Biology*. 1, wlb.00238
- Fremgen, M. et al.* (2017) Necklace-style radio-transmitters are associated with changes in display vocalizations of male Greater Sage-Grouse. *Wildlife Biology*. 1, wlb00236
- Rios-Chelen et al.* (2017). Do birds vocalize at higher pitch in noise, or is it a matter of measurement? *Behavioral Ecology and Sociobiology*. 71:1-12
- Koch*, R.E., **Krakauer, A.H.**, & Patricelli, G.L. 2015. Investigating female mate choice for mechanical sounds in the male Greater Sage-Grouse. *The Auk: Ornithological Advances* 132: 349-358. (*undergraduate honors thesis)
- Pellis, S.M., et al., 2013. Drawn into the vortex: The facing-past encounter and combat in lekking male greater sage-grouse (*Centrocercus urophasianus*). *Behaviour* 150: 1567-1599.
- Benedict, L. & **Krakauer, A.H.** 2013. Kiwis to Peewees: the value of studying bird calls. *Ibis*. 155: 225-228.
- Gibson, D. et al., 2013. Effects of radio collars on male sage-grouse survival and lekking behavior. *Condor* 115: 769-776.
- Blickley et al., 2012. Experimental chronic noise is related to elevated fecal corticosteroid metabolites in lekking male greater sage-grouse (*Centrocercus urophasianus*). *PLoS One* 7: article e50462. *Includes one post-grad field assistant as a co-author.*
- Krakauer, A.H.**, Webster, M.S., DuVal, E.H., Jones, A.G., & Shuster, S.M. 2011. The opportunity for sexual selection: not mismeasured, just misunderstood. *Journal of Evolutionary Biology*. 24: 2064-71.
- Patricelli, G.L., **Krakauer, A.H.**, & McElreath, R. 2011. Assets and tactics in a mating market: economic models of negotiation offer insights into animal courtship dynamics. *Current Zoology*. 57: 225-236.
- Krakauer, A.H.**, et al., 2009. Vocal and anatomical evidence for a two-voiced system in the greater sage-grouse (*Centrocercus urophasianus*). *Journal of Experimental Biology* 212: 3719-3727. *(includes 2 undergraduates and one post-graduate as co-authors)*
- Koenig, W.D., et al., 2009. Mast-producing trees and the geographical ecology of Western Scrub Jays. *Ecography* 32: 561-570.
- Krakauer, A.H.** & Kimball, R.T. 2009. Interspecific brood parasitism in galliform birds. *Ibis* 151: 373-381.
- Kuchta, S.R., **Krakauer, A.H.**, and Sinervo, B. 2008. Why does the Yellow-eyed *Ensatina* have yellow eyes? Batesian mimicry of rough-skinned newts (genus *Taricha*) by the salamander *Ensatina eschscholtzii xanthoptica*. *Evolution* 62: 984-990.

- Krakauer, A.H.** 2003. California Quail lays egg in Wild Turkey nest. *Western Birds* 34:169-170.
- Adkins-Regan, E., & **Krakauer, A.** 2000. Removal of adult males from the rearing environment increases preference for same sex partners in the zebra finch (*Taeniopygia guttata*). *Animal Behaviour* 60: 47-53.
- Walcott, C., Evers, D., Froehler, M., & **Krakauer, A.** 1999. Individuality in "Yodel" calls recorded from a banded population of Common Loons (*Gavia immer*). *Bioacoustics*, 10: 101-114.
- Krakauer, A.H.** & Krakauer, T.H. 1999. Foraging of Yellow-headed Caracaras in the fur of a three-toed sloth. *Journal of Raptor Research* 33: 270.
- Tauber, C.A. & **Krakauer, A.H.** 1997. Larval characteristics and generic placement of endemic Hawaiian Hemerobiids (Neuroptera). *Pacific Science* 51: 413-423.
- Krakauer, A.H.** & Tauber, C.A. 1996. Larvae of *Micromus*, generic characteristics and a description of *Micromus subanticus* (Neuroptera: Hemerobiidae). *Annals of the Entomological Society of America* 89: 203-211.

BOOK CHAPTERS

- Krakauer, A.H.** (in review). "Spandrels" *Encyclopedia of Evolutionary Psychological Science*
- Krakauer, A.H.** (in review). "Disruptive Selection" *Encyclopedia of Evolutionary Psychological Science*
- Krakauer, A.H.** & DuVal, E.H. 2011. Kin selection and cooperative courtship in birds. In C.A. Salmon and T.K. Shackelford (eds.), *The Oxford Handbook of Evolutionary Family Psychology*. New York: Oxford University Press.
- Koenig, W.D., et al., 2009. Reproductive skew in avian societies. Pp. 227-264 in (R. Hager, and C.B. Jones, eds) *Reproductive Skew in Vertebrates: Proximate and Ultimate Causes*, Cambridge University Press, Cambridge.

NON-PEER REVIEW ARTICLES AND REPORTS (* denotes undergraduate author)

- Krakauer A.H.** et al*. (2016). Use of camera traps to record activity on sage-grouse leks. *Grouse News* 52: 19-23.
- Forbey et al*. (2016) Overview of a technical workshop to expand the use of emerging technology to understand the ecology of grouse in a changing climate. *Grouse News* 52: 7-18.
- Krakauer, A.H.** 2015. Brotherly Love: The History and Breeding Behavior of Wild Turkeys in California. *The Quail* (Mount Diablo Audubon Society) Volume 61 Number 3.
- Krakauer, A.H. 2014. Guest Blog: *The Ethogram*.
- Krakauer, A.H. 2013. Guest Blog, Golden Gate Audubon Society.
- Krakauer, A.H. 2012. Greater Sage-grouse. *The Quail* (Mount Diablo Audubon Society) Volume 58 Number 2.

PRESENTATIONS- SCIENTIFIC MEETINGS AND WORKSHOPS

Acoustical Society of America: (invited), 2012
American Association for the Advancement of Science Pacific Division: 2009 (invited)
American Ornithologists' Union: 2001, 2004 (award), 2005, 2007 (invited), 2009, 2010
Animal Behavior Society: 2004, 2005 (award, hon. mention), 2010, 2011
Bay Area Conservation Symposium: 2003
International Grouse Symposium: (presentation and invited technical workshop) 2015
International Ornithological Congress: 2010
International Society for Behavioral Ecology: 2002, 2006, 2008, 2014
National Science Foundation- Microphone Array Workshop: 2008
Nature Sounds Society Field Recording Workshop (invited): 2017
North American Ornithological Congress: 2002, 2012
Society for Integrative and Comparative Biology: 2013
Southern California Animal Behavior Conference: 2005
University of California Davis Regional Animal Behavior Conference: 2009
Winter Animal Behavior Conference: 2014 (invited)

SELECTED STUDENT PRESENTATIONS (* denotes undergraduate author)

Koch, Rebecca E*, Krakauer, Alan H, and Patricelli, Gail L. (2011). *Within and among male variation in the mechanical sounds of the greater sage-grouse*. Animal Behavior Society, Bloomington, Indiana.

Ehrlich, Rebecca*, Perry, Anna C., Krakauer, Alan H., and Patricelli, Gail L. (2014). *Male courtship adjustment and female signals of interest*. University of California Davis Undergraduate Research Conference. Davis, CA.

Main, Ciara*, Perry, Anna C., Krakauer, Alan H., and Patricelli, Gail L. (2014). *Seasonal Analysis of Male display effort in response to a robotic female in the greater sage-grouse*. McNair Scholars Conference. Berkeley, CA.

Dirksen, Amy*, Spiegel, O., Krakauer, A.H., and Patricelli, G.L. (2015). *Behavior Classification from Accelerometer Data in Greater Sage-Grouse (Centrocercus urophasianus)*. Davis Undergraduate Research Conference. Davis, CA.

Long, Kira*, Perry, A.C., Krakauer, A.H., Patricelli, G.L. (2015). *Consequences of Variation in Female Behavior During the Initial Stages of Courtship in the Greater Sage-Grouse*. Davis Undergraduate Research Conference. Davis, CA.

Berger, Ayala*, Alejandro Rios-Chelén, Ambria N. McDonald*, Ayala Berger*, Anna C. Perry, Alan H. Krakauer. Patricelli, Gail L. (2015). *Measurement Biases in songbirds under noisy conditions?* Animal Behavior Society. Anchorage, AK.

Main, Ciara*, A. Perry, A. Krakauer, G. Patricelli (2015). *Seasonal Changes in Male Display Performance in Response to a Robotic Female Stimulus*. Animal Behavior Society. Anchorage, AK.

OUTREACH AND INVITED TALKS

Invited Seminars: Duke University, UNC Greensboro, UNC Chapel Hill, UC Berkeley, UC Davis, UC Santa Cruz, City College of San Francisco, Central Wyoming College

Public Talks: Audubon Society Chapters (Monterey California, Cody Wyoming, Red Desert Wyoming, Mt. Diablo California, Yolo California), Chapel Hill Bird Club, Lander Rancher's Association, Lander Sage-grouse Working Group, Point Reyes National Seashore, Santa Lucia Preserve.

Interviews: Radio (BBC, KCBS- Bay Area, KQED *Quest*), Magazines and Websites (*Science News*, *Science and Spirit*, *Living Bird*, *Outdoor News*, *The Scientist*, *PetStreet*, *the Verge*, *The BoldItalic*, *Pesquisa Fapesp- Brazil*, *IFLS*), News Organizations (NPR, *SF Chronicle*, *NY Times*, *Boston Globe*, *Wall Street Journal*, *Berkeley Daily Planet*, *Carmel Valley Pine Cone*, *Contra Costa Times*, *East Bay Express*, *Los Angeles Times*, *Wrentham Times*); Undergraduate journalists (Harvard, UA Fairbanks, Vassar, UC Davis, UC Berkeley).

Media Assistance: PBS *Nature* "What Females Want and What Males Will Do" (2008), BBC *Life* (2009), *Science Nation* (NSF) video, Cornell Laboratory of Ornithology *Sagebrush Sea* (2015), *Wild Utah* video, Exploration Productions/Discovery Channel Canada, Arrow Media/National Geographic. Photographs provided to numerous news outlets, agencies, and non-profits.

Other Outreach: WonderLab (Bloomington Indiana) event, Brighton and Mays Science Museum Exhibit (UK), Lander Wyoming Earth Day Film Festival, Lander Teen Tech Week, Lander ATLAS sage-grouse art and science exhibit, Lander Area 4th Grade Outdoor Education Day, Las Positas Community College Zoology course interviewee, UC Davis Birders Group Administrator, volunteered on career panels and academic life seminars for undergraduates.

PROFESSIONAL SERVICE

Manuscript Reviewer: *Acta Ethologica*, *American Naturalist*, *Animal Behaviour*, *Animal Conservation*, *Journal of Applied Ecology*, *The Auk: Ornithological Advances*, *Behavioral Ecology*, *Behavioral Ecology and Sociobiology*, *Bioacoustics*, *Bird Study*, *Canadian Journal of Zoology*, *The Condor: Ornithological Applications*, *Current Biology*, *Ecology*, *Environmental Pollution*, *Ethology*, *Evolution*, *F1000:Research*, *Ibis*, *Molecular Ecology*, *Molecular Ecology Resources*, *Naturwissenschaften*, *Northwestern Naturalist*, *Journal of Ornithology*, *Ostrich*, *PLoS One*, *Wildlife Biology*, *Wilson Bulletin for Ornithology*.

Grant Reviewer: National Science Foundation, Earthwatch Institute, National Geographic Society, Saint Louis Zoo WildCare international conservation grants, UC Davis committee for Mathias Award (graduate student grant for UC Natural Reserve System), UC Davis Postdoctoral Scholars Association Travel Grants.

Research Assistance and Consulting: Point Reyes National Seashore (paid consulting), Environment Saskatchewan, Gamebird Research Group.

Course Assistance: Videos provided to *Coursera* Introductory Animal Behavior course (Prof. Mulder and Prof Elgar), also to new UC Davis online course in Animal Behavior (Prof Hedrick).

Professional Committees and Academic Service: American Ornithologists' Union Young Professionals Committee, AOU Membership Committee, AOU Student Awards Judge. Friends of Wildcat Canyon Advisory Board. UC Davis Academic Federation merit reviews and reclassifications. Host and visit scheduler for many Co-Administrator, UC Davis Birders Group.