BRIDGETT M. VONHOLDT

ASSOCIATE PROFESSOR at PRINCETON UNIVERSITY

ECOLOGY & EVOLUTIONARY BIOLOGY

106A GUYOT HALL, PRINCETON, NJ 08544-2016

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APPOINTMENTS

Princeton University, Ecology & Evolutionary Biology

Associate Professor *2019-present*

Assistant Professor *2013-2019*

EDUCATION

University of California, Los Angeles **Ph.D.**

Los Angeles, CA — Ecology & Evolutionary Biology, 2005-2010

Advisor: Robert K. Wayne

New York University **M.S.**

New York, NY — Biology, 2002-2004

Eckerd College **B.S.**

St. Petersburg, FL — Psychology, 1998-2002

POSTDOCTORAL RESEARCH

UCLA Computational Biosciences Institute Fellowship

Advisors: Drs. Robert Wayne & Matteo Pellegrini *2012-2013*

As a Fellow, my goal was to explore the epigenomic landscape of a social mammal through changes in the methylome. Our findings described epigenetic heritability and possible genotype-dependent patterns linked to selection pressures.

University of California, Irvine

Postdoctoral Scholar Advisor: Brandon Gaut, Ecology & Evolutionary Biology *2010-2012*

I explored the dynamics of methylation and transposable elements (TEs) in rice (*Oryza sativa* spp. *japonica*). We described patterns of epigenetic silencing of young insertions using a phylogenetic contrasts method, elucidating a possible mechanism of genome control of transposition.

DISSERTATION

University of California, Los Angeles

Ph.D. Advisor: Robert Wayne; Ecology & Evolutionary Biology *2005-2010*

Title: Canid Population Genetics and Evolutionary Genomics

I explored population genetic analyses of North American gray wolf populations[1,2], and evolutionary genomic analyses across the wolf-like clade[3]. I reconstructed the genealogy of the Yellowstone wolves and developed a novel method to assess gene flow among highly related and recently founded populations. I subsequently identified regions under positive selection in the dog genome and proposed a geographic center for dog domestication.[1]vonHoldt, *et al.* (2010) *Mol Ecol*; [2]vonHoldt, *et al.* (2008) *Mol Ecol* 17, 252-274; [3]vonHoldt, *et al.* (2010) *Nature* 464, 898-903.

PREVIOUS RESEARCH

National Human Genome Research Institute
Ph.D. Committee Member: Elaine Ostrander; NHGRI *2006-2008*
Genome-wide association study for squamous cell carcinoma in domestic dogs

New York University
M.S. Thesis Advisor: Richard Borowsky; Biology *2003-2004*
Population genetic analysis of the Blind Mexican Cave fish (*Astyanax mexicanus*)

Smithsonian, Conservation Research Center
Supervisors: David Wildt and David Kersey, Smithsonian CRC *2002*
Reproductive endocrinology hormone analysis of the captive Giant Panda (*Ailuropoda melanoleua*).

PEER-REVIEWED PUBLICATIONS

*** Undergraduate coauthor(s)**

NCBI Bibliography: https://www.ncbi.nlm.nih.gov/sites/myncbi/1po9mQfs18_kt/bibliography/40340788/public/?sort=date&direction=ascending

- EL MacLean, N Synder-Mackler, **BM vonHoldt**, JA Serpell (*in submission*) Highly heritable and functionally relevant breed differences in dog behavior. *Molecular Biology & Evolution* (bioRxiv https://www.biorxiv.org/content/10.1101/509315v1)
- **BM vonHoldt**, E Heppenheimer, I Janowitz-Koch, KE Brzeski, KA Cassidy, DR Stahler, JS Sinsheimer (*in revision*) Heritable aggression in a pedigreed gray wolf population is associated with neurogenic variation. *Molecular Ecology*
- EA Ostrander, G-D Wang, G Larson, **BM vonHoldt**, BW Davis, V Jagannathan, C Hitte, RK Wayne, Y-P ZHang, Dog10K Consortium (*accepted*). Dog10K: An international sequencing effort to advance studies of canine domestication, phenotypes, and health. *National Science Review*
- A DeCandia†, C Henger†, A Krause§, L Gormezano, M Weckel, C Nagy, J Munshi-South, **B vonHoldt** (2019) Genetics of urban colonization: Neutral and adaptive variation in coyotes (*Canis latrans*) inhabiting the New York metropolitan area. *Journal of Urban Ecology* 5(1), 1-12 († authors contributed equally; §high school intern)
- J Hinton, E Heppenheimer, K West, D Caudill, M Karlin, J Kilgo, J Mayer, K Miller, M Walch, **B vonHoldt**, M Chamberlain (2019) Geographic patterns in morphometric and genetic variation for coyote populations with emphasis in the southeastern United States. *Ecology & Evolution* DOI: 10.1002/ece3.4966
- A DeCandia, K Brzeski, E Heppenheimer, C Caro*, G Camenisch, P Wandeler, C Driscoll, **B vonHoldt** (2019) Urban colonization through multiple genetic lenses: The city-fox phenomenon revisited. *Ecology & Evolution* DOI: 10.1002/ece3.4898
- M Cavedon, C Coubili, E Heppenheimer, **B vonHoldt**, S Mariani, M Hebbelwhite, T Hegel, D Hervieux, R Serrouya, R Steenweg, B Weckworth, M Musiani (2019) Genomics, environment and balancing selection in

behaviorally bimodal populations: the caribou case. *Molecular Ecology* DOI: 10.1111/mec.15039

- S Hendricks, R Schweizer, R Harrigan, J Pollinger, R Brown, P Paquet, C Darimont, J Adams, L Waits, **B vonHoldt**, P Hohenlohe, R Wayne (2019) Natural re-colonization and admixture of wolves (*Canis lupus*) in the US Pacific Northwest: challenges for the protection and management of rare and endangered taxa. *Heredity* 122(2), 133-149.
- E Heppenheimer, KE Brzeski, JW Hinton, BR Patterson, LY Rutledge, JF Benson, T Wheeldon, SR Fain, PA Hohenlohe, R Kays, BN White, MJ Chamberlain, **BM vonHoldt** (2018) High genomic diversity and candidate genes under selection associated with range expansion in eastern coyote (*Canis latrans*) populations. *Ecology & Evolution* 8(24), 12641-12655
- ER Bastounes, HM Rando, JL Johnson, LN Trut, BN Sacks, CA Driscoll, **B vonHoldt**, AV Kukekova (2018) Four structural variants associated with human-directed sociability in dogs are not found in tame red foxes (*Vulpes vulpes*). *Animal Genetics* DOI: 10.1111/age.12755
- E Heppenheimer†, KE Brzeski†, R Wooten, W Waddell, LY Rutledge, MJ Chamberlain, DR Stahler, JW Hinton, **BM vonHoldt** (2018) Rediscovery of red wolf ghost alleles in a canid population along the American Gulf Coast. *Genes* 9(12), 618 († authors contributed equally) (invited)
- E Heppenheimer†, RJ Harrigan†, LY Rutledge, K-P Koepfli, AL DeCandia, KE Brzeski, JF Benson, T Wheeldon, BR Patterson, R Kays, PA Hohenlohe, **BM vonHoldt** (2018) Population genomic analysis of North American eastern wolves (*Canis lycaon*) supports their conservation priority status. *Genes* 9(12), 606 († authors contributed equally) (invited)
- **BM vonHoldt**†, RY Kartzinel†, CD Huber, VL Underwood, Y Zhen, K Ruegg, KE Lohmueller, TB Smith (2018) Growth factor gene *IGF1* is associated with bill size in an African finch (*Pyrenestes ostrinus*). *Nature Communications.* DOI: 10.1038/s41467-018-07374-9 († authors contributed equally)
- **BM vonHoldt**, SS Ji, ML Aardema, DR Stahler, MAR Udell, JS Sinsheimer (2018) Activity of genes with functions in human Williams-Beuren Syndrome are impacted by mobile element insertions in the gray wolf genome. *Genome Biology & Evolution*. doi: 10.1093/gbe/evy112
- AL DeCandia, AP Dobson, **BM vonHoldt** (2018) Toward an integrative molecular approach to wildlife disease. *Conservation Biology* doi:10.1111/cobi.13083
- M Pilot, C Greco, **B vonHoldt**, E Randi, W Jedrzejewski, VE Sidorovich, MK Konopinski, EA Ostrander, RK Wayne (2018) Widespread, long-term admixture between grey wolves and domestic dogs across Eurasia and its implications for the conservation status of hybrids. *Evolutionary Applications* doi: 10.1111/eva.12595
- E Heppenheimer, DS Cosio*, KE Brzeski, C Caudill, K Van Why, MJ Chamberlain, JW Hinton, **B vonHoldt** (2017) Demographic history

influences spatial patterns of genetic diversity in recently expanded coyote (*Canis latrans*) populations. *Heredity* 120(3), 183-195 [cover image]

- SA Hendricks, S Koblmueller, RJ Harrigan, JA Leonard, RM Schweizer, **BM vonHoldt**, R Kays, RK Wayne (2017) Defense of an expanded historical range for the Mexican wolf: A comment on Heffelfinger et al. *Journal of Wildlife Management* doi: 10.1002/jwmg.21336
- **B vonHoldt**, Z Fan, D Ortega-Del Vecchyo, RK Wayne (2017) *EPAS1* variants in high altitude Tibetan wolves were selectively introgressed into highland dogs. *PeerJ* 5, e3522
- **B vonHoldt**, J Cahill, I Gronau, B Shapiro, J Wall, RK Wayne (2017) Technical Comment: Response to Hohenlohe et al. *Science Advances* 3(6), e1701233
- **B vonHoldt**†, E Shuldiner†,*, I Janowitz Koch, R Kartzinel, L Brubaker, S Wanser, D Stahler, C Wynne, MAR Udell (2017) Structural variants in genes associated with human Williams-Beuren syndrome underlie stereotypical hypersociability in domestic dogs. *Science Advances* 3, e1700398 († authors contributed equally)
- **B vonHoldt**, KE Brzeski, DS Wilcove, LY Rutledge (2017) Redefining the role of admixture and genomics in species conservation. *Conservation Letters* 11(2), 1-6 [cover image]
- M Thompson, **B vonHoldt**, S Horvath, M Pellegrini (2017) An epigenetic aging clock for dogs and wolves. *Aging* 9(3), 1055-1068
- **B vonHoldt**, E Heppenheimer, V Petrenko*, P Croonquist, L Rutledge (2017) Ancestry-specific methylation patterns in admixed offspring from an experimental coyote and gray wolf cross. *Journal of Heredity* 108(4), 341-348 [cover image]
- S Snir, **BM vonHoldt**, M Pellegrini (2016) A statistical framework to identify deviation from time linearity in epigenetic aging. *PLOS Computational Biology* 12(11): e1005183
- **BM vonHoldt**, J Cahill, Z Fan, I Gronau, J Robinson, JP Pollinger, B Shapiro, J Wall, RK Wayne (2016) Whole-genome sequence analysis shows that two endemic species of North American wolf are admixtures of the coyote and gray wolf. *Science Advances* 2, e1501714
- R Mariano*, **B vonHoldt** (2016) The canine X chromosome is a sink for canine endogenous retrovirus transposition. *Gene Reports* 4, 169-176
- **BM vonHoldt**, RW Kays, JP Pollinger, RK Wayne (2016) Admixture mapping identifies introgressed genomic regions in North American canids. *Molecular Ecology* 25(11), 2443-2453 (invited) [cover image]
- P Charruau, R Johnston, DR Stahler, A Lea, N Snyder-Mackler, DW Smith, **B vonHoldt**, SW Cole, J Tung, RK Wayne (2016) Pervasive effects of aging on gene expression in wild wolves. *Molecular Biology & Evolution* 33(8), 1967-1978
- KJF Verhoeven, **B vonHoldt**, VL Sork (2016) Epigenetics in ecology and evolution: What we know and what we need to know. *Molecular Ecology* 25(8), 1631-1638 (invited commentary)

- J Robinson, D Ortega Del Vecchyo, Z Fan, **B vonHoldt**, CD Marsden, KE Lohmueller, RK Wayne (2016) Genomic flat-lining in the endangered island fox (*Urocyon littoralis*). *Current Biology* 26, 1-7
- I Janowitz Koch, MM Clark, MJ Thompson, KA Deere-Machemer, J Wang, L Duarte, GE Gnanadesikan*, EL McCoy*, L Rubbi, DR Stahler, M Pellegrini, EA Ostrander, RK Wayne, JS Sinsheimer, **B vonHoldt** (2016) The concerted impact of domestication and transposon insertions on methylation patterns between dogs and gray wolves. *Molecular Ecology* 25(8), 1838-1855 (invited) [cover image]
- RM Schweizer, **BM vonHoldt**, JC Knowles, M Musiani, D Coltman, J Novembre, RK Wayne (2016) Genetic subdivision and candidate genes under selection in North American gray wolves. *Mol Ecol* 25(1), 380-402
- RJ Fredrickson, PW Hedrick, RK Wayne, **BM vonHoldt**, MK Phillips (2015) Mexican wolves are a valid subspecies and an appropriate conservation target. *Journal of Heredity* 106(4), 415-416
- RHS Kraus, **B vonHoldt**, B Cocchiararo, V Harms, H Bayerl, R Kuhn, DW Foerster, J Fickel, C Roos, C Nowak (2015*)* A SNP-based approach for rapid and cost-effective genetic wolf monitoring in Europe based on non invasively collected samples. *Molecular Ecology Resources* 15, 295-305
- Y Afanador, J Velez-Valentín, R Valentín-de la Rosa, JC Martinez-Cruzado, **B vonHoldt**, TK Oleksyk (2014) Isolation and characterization of microsatellite loci in the critically endangered Puerto Rican parrot (*Amazona vittata*). *Conservation Genetics* 6, 885-889
- M Pilot, C Greco, **BM vonHoldt**, B Jedrzejewska, E Randi, W Jedrzejewski, VE Sidorovich, EA Ostrander, RK Wayne (2014) Genome-wide signatures of population bottlenecks and diversifying selection in European wolves. *Heredity* 112, 428-442
- Y Li, **BM vonHoldt**, A Reynolds, AR Boyko, RK Wayne, DD Wu, YP Zhang (2013) Artificial selection on brain-expressed genes during the domestication of dog. *Molecular Biology & Evolution* 30, 1867-1876
- OC Bedoya-Reina, A Ratan, R Burhans, HL Kim, B Giardine, C Riemer, Q Li, TL Olson, TP Loughran, **B vonHoldt**, GH Perry, SC Schuster, W Miller (2013) Galaxy tools to study genome diversity. *GigaScience* 2, 17
- DM Karyadi, E Karlins, B Decker, **B vonHoldt**, G Carpintero-Ramirez, HG Parker, RK Wayne, EA Ostrander (2013) A copy number variant at the *KITLG* locus likely confers risk for canine squamous cell carcinoma of the digit. *PLoS Genetics* 9 (3), e1003409
- DR Stahler, DR MacNulty, R Wayne, **B vonHoldt**, DW Smith (2013) The adaptive value of morphological, behavioral, and life history traits in reproductive female wolves. *Journal of Animal Ecology* 82, 222-234
- **B vonHoldt**, J Pollinger, D Earl, HG Parker, EA Ostrander, RK Wayne (2012) Identification of recent hybridization between gray wolves and domesticated dogs by SNP genotyping. *Mammalian Genome* 24, 80-88

- **B vonHoldt**, S Takuno, B Gaut (2012) Recent LTR retrotransposon insertions are methylated and phylogenetically clustered in japonica rice (*Oryza sativa japonica*). *Molecular Biology & Evolution* 29 (10), 3193-3203
- RK Wayne, **B vonHoldt** (2012) Evolutionary genomics of dog domestication. *Mammalian Genome* 23, 3-18
- H Huson, **B vonHoldt**, M Rimbault, AM Byers, JA Runstadler, HG Parker, EA Ostrander (2012) Selection for breed-specific ancestry targets a mutation in the MYO9 gene associated to heat tolerance within performing Alaskan sled dogs. *Mammalian Genome* 23, 178-194
- T Coulson, DR MacNulty, DR Stahler, **B vonHoldt**, RK Wayne, DW Smith (2011) Modeling effects of environmental change on wolf population dynamics, trait evolution and life history. *Science* 334, 1275-1278
- D Earl, **B vonHoldt** (2011) STRUCTURE HARVESTER: a website and program for visualizing STRUCTURE output and implementing the Evanno method. *Conservation Genetic Resources* 4 (2), 359-361
- E Geffen, M Kam, R Hefner, P Hersteinsson, A Angerbjorn, L Dalen, E Fuglei, K Noren, JR Adams, J Vucetich, TJ Meier, LD Mech, **B vonHoldt**, DR Stahler, RK Wayne (2011) Kin encounter rate and inbreeding avoidance in canids. *Molecular Ecology* 20, 5348-5358
- **B vonHoldt**, J Pollinger, D Earl, JC Knowles, AR Boyko, H Parker, E Geffen, M Pilot, W Jedrzejewski, B Jedrzejewska, V Sidorovich, C Greco, E Randi, M Musiani, R Kays, CD Bustamante, EA Ostrander, J Novembre, RK Wayne (2011) A genome-wide perspective on the evolutionary history of enigmatic wolf-like canids. *Genome Research* 21, 1294-1305 [cover image]
- **B vonHoldt**, D Stahler, EE Bangs, DW Smith, MD Jimenez, CM Mack, CC Niemeyer, J Pollinger, RK Wayne (2010) A novel assessment of population structure and gene flow in gray wolf populations of the Northern Rocky Mountains of the United States. *Molecular Ecology* 19, 4412-4427
- AR Boyko, P Quignon, L Li, JJ Schoeneback, JD Degenhardt, KE Lohmueller, K Zhao, A Brisbin, HG Parker, **B vonHoldt**, M Cargill, A Auton, A Reynolds, AG Elkahloun, M Castelhano, DS Mosher, NB Sutter, GS Johnson, J Novembre, MJ Hubisz, A Siepel, RK Wayne, CD Bustamante, EA Ostrander (2010) A simple genetic architecture underlies quantitative traits in dogs. *PLoS Biology* 8(8)
- I Jankovic*, **B vonHoldt**, N Rosenberg (2010) Heterozygosity of the Yellowstone wolves. *Molecular Ecology* 19, 3246-3249
- **B vonHoldt**, E Han, J Pollinger, KE Lohmueller, E Han, HG Parker, P Quignon, JD Degenhardt, AR Boyko, DA Earl, A Auton, A Reynolds, K Bryc, A Brisbin, JC Knowles, DS Mosher, TC Spady, A Elkahloun, E Geffen, M Pilot, W Jedrzejewski, C Greco, E Randi, Danika Bannasch, A Wilton, J Shearman, M Musiani, M Cargill, PG Jones, Z Qian, W Huang, ZL Ding, YP Zhang, CD Bustamante, EA Ostrander, J Novembre, RK Wayne (2010) Genome-wide SNP and haplotype analyses reveal a rich history underlying dog domestication. *Nature* 464, 898-903

- E Cadieu, M Neff, P Quignon, K Walsh, K Chase, HG Parker, **B vonHoldt**, A Rhue, A Boyko, A Byers, A Wong, DS Mosher, AG Elkahloun, TC Spady, A Andre, KG Lark, M Cargill, CD Bustamante, RK Wayne, EA Ostrander (2009) Coat variation in domestic dogs is governed by variants in three genes. *Science* 326, 150-153
- H Parker, **B vonHoldt**, P Quignon, EH Margulies, S Shao, DS Mosher, TC Spady, A Elkahloun, M Cargill, PG Jones, CL Maslen, GM Acland, NB Sutter, K Kuroki, CD Bustamante, RK Wayne, EA Ostrander (2009) An expressed fibroblast growth factor 4 (*fgf4*) retrogene causes breed-defining chondrodysplasia in the domestic dog. *Science* 325 (5943), 995-998
- T Anderson, **B vonHoldt**, S Candille, M Musiani, C Greco, DR Stahler, DW Smith, B Padhukasahasram, E Randi, JA Leonard, CD Bustamante, EA Ostrander, H Tang, RK Wayne, GS Barsh (2009) Molecular and evolutionary history of melanism in North American gray wolves. *Science* 323 (5919), 1339-1343 [cover image]
- **B vonHoldt**, D Stahler, D Smith, DA Earl, JP Pollinger, RK Wayne (2008) The genealogy and genetic viability of the reintroduced Yellowstone grey wolves. *Molecular Ecology* 17, 252-274
- **B vonHoldt**, E Ostrander (2006) Preview: The singular history of a canine transmissible tumor. *Cell* 126, 445-447

BOOK CHAPTERS

- R Wayne, DR Stahler, **B vonHoldt** (*submitted*) *In* Yellowstone Wolves: Reintroduction, Ecology, Behavior and Conservation. Eds. DW Smith, DR Stahler, DR MacNulty.
- **B vonHoldt** and C Driscoll (2016) Origins of the dog: Genetic archaeology and molecular architecture. *In* The Domestic Dog: Its Behavior, Evolution and Interactions with People. Cambridge University Press, UK.
- **B vonHoldt**, M Gray, and R Wayne (2012) Genome-wide approaches for the study of dog domestication. *In* Biodiversity in Agriculture: Domestication, Evolution, Sustainability. Cambridge University Press, UK.

GRANTS & AWARDS

National Science Foundation
Proposal Number: IOS-1754503 *2018-2021*
Role: co-PI
Funded: $135,081
Maladaptive plasticity and hypoxia signaling in high-altitude deer mice.

EPSCoR Proposal Number: OIA-1738597 *2018-2020*
Role: Collaborative host to PI (Jenny Ouyang)
Funded to PI: $299,999
Mechanisms underlying transgenerational inheritance of the stress phenotype.

EAGER Proposal Number: DEB-1257716 *2012-2014*
Role: co-PI
Funded: $124,928
Functional testing of gene variants through transcriptome analysis of cell lines established from North American gray wolves.

Princeton University
Princeton Innovation Forum, 3rd prize *2019*

Yellowstone Park Foundation *2015*
Role: PI
Funded: $12,000
Genome-wide genotyping efforts for pedigree and fitness-trait modeling.

Point Defiance Zoo & Aquarium Dr. Holly Reed Conservation Fund *2015*
Role: PI
Funded: $14,680
Pedigree analysis of genome-wide ancestry in the endangered red wolf.

American Kennel Club Canine Health Foundation
OAK Grant Number: CHF 1822 *2012*
Role: co-PI
Funded: $119,692
Developing resources and exploring the role of the epigenome in canine health.

Princeton University nominee
Johnson & Johnson Women in Science STEM²D Scholar Program *2017*
Searle Scholars Program *2013*

WORKING GROUPS

Red Wolf Science Workshop, Smithsonian Conservation Biology Institute *2018*
Red Wolf Workshop, University of Georgia *2016*

CONFERENCES & WORKSHOPS

Adaptive Epigenomics workshop: Building a bridge between animal and human research. *2017*
University of Konstanz, Germany

Smithsonian BioGenomics 2017 Conference *2016-2017*
Scientific organizing committee member

Invited member for the Dog10K Consortium *2016*
Beijing, China

Faculty for the *Conservation Genetics* Workshop at UCLA *2016*

Invited panelist for the *Professional Development Workshop*,
Ecology & Evolutionary Biology, Princeton University *2015, 2016*

Chair of the *Species domestication* Symposium
Society for Molecular Biology and Evolution, Puerto Rico *2014*

Faculty for the *Recent Advances in Conservation Genetics* 10-day Workshop:
Front Royal, Virginia *2018*
Mayagüez, Puerto Rico *2015*
Kruger National Park, South Africa *2013*

PATENTS & TECHNOLOGY

Princeton Innovation
Participant in Celebrate Princeton Innovation *2018*

Docket #17-3362 (filed with Princeton University)
Title: Simple genomic test of canine genes associated with Williams-Beuren Syndrome could predict social behavior in domesticated dogs
Inventors: Bridgett vonHoldt (Princeton University), Janet Sinsheimer (UCLA), and Monique Udell (OSU)

Docket #2017-644-1/17-3320 (filed with UCLA)
Title: Using DNA methylation markers to predict the age of dogs
Inventors: Matteo Pellegrini (UCLA), Stefan Horvath (UCLA), Bridgett vonHoldt (Princeton University), Michael Thompson (UCLA)

SCIENTIFIC OUTREACH

Princeton University Learning Laboratory (High School Internship)
Project: Goldenrod population genetics
Dominica Colavito *2015*
Katie Simons (Princeton Day School senior project) *2016-2017*
Project: Genetics of canine mange
Amelia Krause *2016*

Project: Camera trap analysis of African fauna
Olivia Ondis *2017*

Science Education and Outreach Workshops
Public seminar: Science on Tap *3/2018*
Triumph Brewery, Princeton, NJ

Public Lecture: 66th Annual Mendel Lecture
St. Peter's University, Jersey City, NJ *3/2017*

Guest on Princeton's WPRB radio show *These Vibes Are Too Cosmic*
Topic: Canine domestication genetics and epigenetics *10/2016*

Student Conference on Conservation Science mentor, American Museum of Natural History *2015*

New Jersey Science Convention, Invited presentation on "*Canines can serve as excellent case studies for teaching genes, inheritance, and selection*" to 9-12th grade STEM teachers *2014*

HHMI Invited Mentor to the University of Puerto Rico, Mayaguez: Two-week intensive mentoring and teaching program. My hosts (Drs. Martinez-Cruzado and Oleksyk) organized a Departmental seminar, a bioinformatic tutorial workshop, and student meetings to discuss research and career planning. *2014*

Animal Behavior Society Conference, Family Outreach Workshop, "*Canine Traits: Learning about genes and inheritance.*" *2014*

Better Education for Women in Science and Engineering, "How Genes Work Together to Make a Dog", Canine Genetics and Inheritance Session *2012*

"DNA Day", Natural Selection Session; with the Genomic Analysis and Interpretation Training Grant *2009, 2010*

INVITED SEMINARS

- University of Montana, Division of Biological Sciences, 2019
- Texas A&M University, Veterinary Medicine and Biomedical Sciences, 2018
- Biology Department, University of Konstanz, Germany, 2017
- Richard Gilder Graduate School, American Museum of Natural History, 2017
- New Mexico State University, 2016
- American Museum of Natural History, 2016
- Sichuan University, Chengdu, China, 2016
- Chinese Academy of Sciences, Beijing, China, 2016
- Society for Molecular Biology & Evolution Satellite Meeting: Genetics of Admixed Populations, 2016
- Northeast Naturalist History Conference, 2016
- Michigan State University, Department of Ecology, Evolutionary Biology, and Behavior, 2016 (student invite)
- New Jersey Humanist Network, New Jersey Audubon Society, 2016
- University of Georgia, Department of Warnell School of Forestry and Natural Resources, 2015 (student invite)
- New York University, Department of Biology, April 2015
- Princeton University, Department of Molecular Biology, 2014
- Fordham University, Department of Biological Sciences, 2014 (student invite)
- Bard College, Biology Department, 2014
- Pennsylvania State University, Center for Comparative Genomics & Bioinformatics, 2013
- University of Illinois, Urbana-Champaign, Animal Science, 2012

- Dartmouth University, Department of Biological Sciences, 2012
- Princeton University, Ecology and Evolutionary Biology, 2011
- UCLA Genome Analysis and Interpretation Training Program, 2011
- UCLA 9th Annual Symposium, Center for Society and Genetics, 2011
- Cornell University, College of Veterinary Medicine, 2011

TEACHING EXPERIENCE

Courses

Princeton University, Dept. of Ecology and Evolutionary Biology

Winter Ecology, EEB 521	*Spring 2019*
Seminar: Polyphenism, EEB 524	*Spring 2016*
Junior Tutorial: Evolution	*Falls 2014, 2017*
Seminar: Pigmentation Genetics, EEB 524	*Spring 2014*
Evolution EEB 309	*2013-present*

UCLA; Dept. of Ecology and Evolutionary Biology

Special Topics Seminar: Epigenomics EEB297	*Winter 2012*

UNIVERSITY ACTIVITIES

Princeton University Ecology & Evolutionary Biology

Member, EEB Building Committee	*2018-present*
Member, Departmental Website Committee	*2017*
Member, Graduate Admissions Committee	*2013-present*
Member, Faculty Search Committee	*2014-present*

Princeton Institute for Computational Science & Engineering

Member, Computational Science & Engineering Curriculum	*2018-present*

PROFESSIONAL ACTIVITIES

Associations

American Genetic Association, Council member	*Jan 2016-Dec 2018*

Associate Editor

Molecular Ecology Resources	*2017-present*
Molecular Ecology	*2017-present*
Journal of Heredity	*2015-present*
Ecology Letters	*2016-2018*
Molecular Ecology, Special Issue on Epigenetics	*2014-2015*

Scientific Advisory Boards

Morris Animal Foundation (Wildlife Scientific Advisor)	*2018-present*

Reviewer

3G: Genes|Genomes|Genetics; Anim Conserv; Biol Conserv; BMC Genomics; Conserv Genet; Genetica; Genome Biol Evol; Heredity; J Anim Ecol; J Evol Biol; J Genet; J Heredity; Mol Biol Evol; Mol Ecol; Nature Genet; Science

ADVISEES

Post-doctoral Researchers

Kristin Brzeski	*2016-2018*
Rebecca Kartzinel	*2016-2017*
Linda Rutledge	*2015-2016*
Ilana Janowitz	*2014-2016*
Kerry Machemer	*2013-2016*

Graduate Advisees (Ph.D. program)

Dhriti Tandon	*2018-present*
Christopher Lawrence	*2018-present*
Alexandria DeCandia	*2015-present*
Elizabeth Heppenheimer	*2014-present*

Graduate Ph.D. Committee Member

Malavika Rajeev, Princeton University EEB	*2016-present*
Lu Yang, Princeton University EEB	*2015-present*
Maria Cavedon, University of Calgary	*2015-present*
Jacqueline Robinson, UCLA EEB	*2016-2017*
Molly Schumer, Princeton University EEB	*2013-2016*

Undergraduate Senior Thesis Advisees

(* thesis is a manuscript in revision or published)

Maddie Offstein, Mikaela Walkup, Riley Wilkinson	*Class of 2019*
Julian Goldman, Tabitha Lumour-Mensah, Andrea Papa	*Class of 2018*
Catherine Cao, Rohan Hylton, Quin Pompi	*Class of 2017*
Daniela Cosio*, Carly Jackson, Jordan Lubkeman, Emily Shuldiner*, Samantha Wu	*Class of 2016*
Thomas Kroshus, Karlos Bledsoe	*Class of 2015*
Rachelle Mariano*, Gitanjali Gnanadesikan*, Eskender McCoy*	*Class of 2014*

Visiting Student Research Collaborator

(* undergraduate as coauthor on a manuscript in revision or published)

Fabricio Silva Garcez, Pontifical Catholic University of Rio Grande do Sul, Brazil	*2017*
Constance Braz* (Undergraduate), Virginia State University	*2016*
Deja Rogers* (Undergraduate), Virginia State University	*2016*
Keana Johnson* (Undergraduate), Virginia State University	*2016*
Gayle Pedersen, University of Pretoria, South Africa	*2016*
Jenni Harmoinen, University of Oulu, Finland	*2015*
Yashira Afanador-Hernandez, University of Puerto Rico, Mayaguez	*2013*

AFFILIATIONS

Princeton University

Princeton Institute for Computational Science & Engineering	*2017-present*
Molecular Biology Department, Associated Faculty	*2014-present*
Quantitative Computational Biology, Associated Faculty	*2014-present*

American Museum of Natural History, NY
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MEDIA COVERAGE

E Heppenheimer†, KE Brzeski†, R Wooten, W Waddell, LY Rutledge, MJ Chamberlain, DR Stahler, JW Hinton, **BM vonHoldt** (2018) Rediscovery of red wolf ghost alleles in a canid population along the American Gulf Coast. *Genes* 9(12), 618 († authors contributed equally)

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