

**Amanda J. Lea**  
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## ACADEMIC EXPERIENCE AND EDUCATION

- Postdoctoral Fellow, Lewis-Sigler Institute for Integrative Genomics and Department of Ecology and Evolution, Princeton University
  - Mentors: Julien Ayroles and Joshua Akey 5/17-current
- Ph.D. in Ecology, Duke University
  - Mentors: Jenny Tung and Susan Alberts 9/11-5/17
- B.S. in Ecology and Evolution, University of California: Los Angeles
  - Mentors: Daniel Blumstein and Robert Wayne 9/05-5/09

## PUBLICATIONS

[work in review or in press]

1. **AJ Lea**, M Subramaniam, A Ko, T Lehtimäki, E Raitoharju, M Kähönen, I Seppälä, N Mononen, OT Raitakari, M Ala-Korpela, P Pajukanta, NA Zaitlen, JF Ayroles. Genetic and environmental perturbations lead to regulatory decoherence. In review (preprint available here: <https://doi.org/10.1101/369306>).
2. **AJ Lea**, MY Akinyi, R Nyakundi, P Mareri, F Nyundo, T Kariuki, SC Alberts, EA Archie, J Tung. Dominance rank-associated immune gene expression is widespread, sex-specific, and a precursor to high social status in wild male baboons. In review (preprint available here: <https://doi.org/10.1101/366021>).
3. **AJ Lea**, CM Vockley, RA Johnston, CA Del Carpio, LB Barreiro, TE Reddy, J Tung. Genome-wide quantification of the effects of DNA methylation on human gene regulation. In revision (preprint available: <https://doi.org/10.1101/146829>).
4. N Snyder-Mackler, **AJ Lea**. Functional genomic insights into the environmental determinants of mammalian fitness. *Current Opinion in Genetics & Development*, in press.

[published work]

5. **AJ Lea**, J Tung, EA Archie, SC Alberts. Developmental plasticity research in evolution and human health: response to commentaries. *Evolution, Medicine, and Public Health*, 1: 201-205
6. **AJ Lea**, J Tung, EA Archie, SC Alberts. Developmental plasticity: bridging research in evolution and human health. *Evolution, Medicine, and Public Health*, 1: 162-175
7. LEK Serieys, **AJ Lea**, M Epeldegui, TC Armenta, J Moriarty, S VandeWoude, S Carver, J Foley, RK Wayne, SPD Riley, CH Uittenbogaart. 2018. Urbanization and anticoagulant poisons promote immune dysfunction in bobcats. *Proceedings of the Royal Society Series B*, 285: 20172533
8. **AJ Lea**, PAP Durst, TP Vilgalys, J Tung. 2017. Maximizing ecological and evolutionary insight in bisulfite sequencing data sets. *Nature Ecology and Evolution* 1: 1074-1083

9. P Charruau\*, R Johnston\*, DR Stahler, **AJ 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 and Evolution* 33: 1967-1978
10. **AJ Lea**, J Altmann, SC Alberts, J Tung. 2016. Resource base influences genome-wide DNA methylation levels. *Molecular Ecology* 25: 1681-1696
11. **AJ Lea**, J Tung\*, X Zhou\*. 2015. A flexible, efficient binomial mixed model for identifying differential DNA methylation in bisulfite sequencing data. *PLoS Genetics* 11: e1005650
12. KP Koepfli, J Pollinger, R Godinho, J Robinson, **AJ Lea**, S Hendricks, RM Schweizer, O Thalmann, P Silva, Z Fan, AA Yurchenko, P Dobrynin, A Makunin, JA Cahill, B Shapiro, F Alvares, JC Brito, E Geffen, JA Leonard, KM Helgen, WE Johnson, SJ O'Brien, B Van Valkenburgh, RK Wayne. 2015. Genome-wide evidence reveals that African golden jackals are a distinct species. *Current Biology* 25: 2158-2165
13. **AJ Lea**, J Altmann, SC Alberts, J Tung. 2015. Developmental constraints in a wild primate. *The American Naturalist* 185: 809-21
14. LEK Serieys, **AJ Lea**, JP Pollinger, SPD Riley, RK Wayne. 2014. Disease and urbanization drive genetic change in urban bobcat populations. *Evolutionary Applications* 8: 75-92
15. **AJ Lea**, NH Learn, MJ Theus, J Altmann, SC Alberts. 2014. Complex sources of variance in female dominance rank in a nepotistic society. *Animal Behaviour* 94: 87-99
16. DM Shier, **AJ Lea**, MA Owen. 2012. Beyond masking: endangered Stephen's kangaroo rats respond to traffic noise with footdrumming. *Biological Conservation* 150: 53-58
17. **AJ Lea**, DT Blumstein. 2011. Ontogenetic and sex differences influence alarm call response: a meta-analysis. *Ethology* 117: 839-851
18. **AJ Lea**, DT Blumstein. 2011. Heightened risk reveals state-dependent anti-predator responses in marmots. *Behavioral Ecology and Sociobiology* 65: 1525-1533
19. **AJ Lea**, DT Blumstein, TW Wey, JGA Martin. 2010. Heritable victimization and the benefits of agonistic relationships. *Proceedings of the National Academy of Sciences* 107: 21587-21592
20. DT Blumstein, **AJ Lea**, LE Olson, JGA Martin. 2010. Heritability of anti-predator traits: vigilance and locomotor performance in marmots. *Journal of Evolutionary Biology* 23: 879-887
21. **AJ Lea**, JP Barrera, LM Tom, DT Blumstein. 2008. Heterospecific eavesdropping in a nonsocial species. *Behavioral Ecology* 19: 1041-1046

## AWARDS, FELLOWSHIPS, AND GRANTS

- Helen Hay Whitney Foundation, Postdoctoral Fellowship (2018-2021)
- NSF Directorate for Social, Behavioral, and Economic Sciences, Postdoctoral Fellowship (declined, 2018)
- Finalist for the Life Sciences Research Foundation Postdoctoral Fellowship (2017)
- Duke University, Biology Department Research Fellowship (2016)
- Finalist for the Regeneron Prize for Creative Innovation (2015)

- National Evolutionary Synthesis Center and Triangle Center for Evolutionary Medicine, Graduate Student Fellowship (2015)
- National Science Foundation, Doctoral Dissertation Improvement Grant (2014)
- Leakey Foundation, Research Grant (2014)
- Duke University, Dissertation Research Travel Award (2014)
- Duke University, Summer Research Fellowship (2014)
- Sigma Xi, Grant-in-Aid of Research (2012)
- Duke University, James B. Duke Fellowship (2011-2015)
- National Science Foundation, Graduate Research Fellowship (2011-2014)

### **CONFERENCE PRESENTATIONS**

- The Biology of Genomes: Genome-wide quantification and prediction of DNA methylation-dependent regulatory activity (Poster, 2017)
- The International Primatological Society: Early adversity in wild baboons: molecular and demographic insights into human aging (Talk, 2016)
- The Biology of Genomes: A high-throughput, experimental method for quantifying the effects of enhancer methylation on gene expression (Poster, 2016)
- The Biology of Genomes: A flexible, binomial mixed effects model for differential DNA methylation analysis (Poster, 2015)
- The International Society for the Study of Evolutionary Medicine and Public Health: Diet influences DNA methylation in a wild primate (Poster, 2015)
- Society for the Study of Evolution: Resource abundance influences DNA methylation in a wild primate (Talk, 2014)
- The Biology of Genomes: Resource abundance influences DNA methylation in a wild primate (Poster, 2014)
- Society for Molecular Biology and Evolution: Social and nutritional effects on DNA methylation in a wild primate (Poster, 2013)
- American Genetic Association: Characterizing major histocompatibility complex genetic variation in yellow-bellied marmots (Poster, 2011)

### **INVITED TALKS AND PRESENTATIONS**

- Wake Forest University, Department of Biology (Ecology, Evolution, and Systematics Focus Group): Evolution and mechanisms of plasticity in wild baboons (2017)
- UC Conservation Genomics Consortium, Conservation and Gene Expression Workshop: Statistical analysis of DNA methylation data (2016)
- Princeton University, Department of Ecology and Evolutionary Biology: Early life effects in wild baboons (2015)
- University of Pennsylvania, Department of Psychology: Evolutionary and mechanistic explanations for early life effects (2015)

- East Carolina University, Research in Progress Seminar Series: Social and ecological effects on DNA methylation in a wild primate (2014)
- Duke University, Epigenetics and Epigenomics Symposium: Ecology influences DNA methylation in wild baboons (2014)

## TEACHING EXPERIENCE

- Teaching assistant, Duke University Department of Biology, Behavioral Ecology (2017)
- Guest lecturer, Duke University Program in Computational Biology and Bioinformatics, Statistical Methods in Computational Biology (2015)
- Teaching assistant, Duke University Department of Evolutionary Anthropology, Primate Disease Ecology (2014)
- Teaching assistant, Duke University Department of Evolutionary Anthropology, Primate Field Biology (2013)
- Teaching assistant, UCLA Department of Ecology and Evolutionary Biology, Introduction to Marine Biology (2010)

## ACTIVITIES AND SERVICE

- Duke University, Evolutionary Anthropology Department Undergraduate Mentorship Grant Recipient (2015, 2016)
- Duke University, Biology Department 'Super Speaker' Committee Member (2015-2016)
- Women and Mathematics Mentoring Program, Member (2013-2015)
- Duke University, Biology Department Steering Committee Member (2014-2015)
- Duke University, Behavior and Morphology Seminar Series Organizer (2013-2015)
- North Carolina Museum of Natural Sciences, Guest Speaker (2013)
- Duke University, Science Education Outreach Grant Recipient (2012, 2013)
- Duke University, Community Outreach Committee Member (2012-2013)
- Duke University, Ecology Program Representative to the Graduate Student Council (2012-2013)
- YMCA, Youth Development Guest Speaker (2011)
- Member: American Genetic Association (2011-2012), Society for Integrative and Comparative Biology (2013-2014), Society for Molecular Biology and Evolution (2013-2014), Society for the Study of Evolution (2014-2015)
- Reviewer for: *Molecular Ecology*, *Ibis*, *Animal Cognition*, *Ethology*, *Behaviour*, *Behavioral Ecology and Sociobiology*, *Animal Behaviour*, *The Leakey Foundation*, *Developmental Sciences*, *Swiss National Science Foundation*, *American Journal of Physical Anthropology*, *Behavioral Ecology*, *Science of the Total Environment*