

# Jessica A. Weber

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## Education

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- 2018 **Ph.D. Candidate in Biology**, University of New Mexico, Albuquerque, NM  
Advisors: Drs. Joseph Cook & Jeremy Edwards
- 2006 **B.S. in Genetics, Cell Biology, and Development**, University of Minnesota, Minneapolis, MN  
Advisor: Dr. Patricia Tam

## Research Appointments

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- 2015 – Present **Consultant**, Sentieon Inc., Mountain View, CA
- 2014 – 2018 **Research Assistant**, University of New Mexico, Albuquerque, NM  
Department of Chemistry & Chemical Biology – Mentor: Dr. Jeremy Edwards
- 2011 – 2013 **PiBBS Fellow**, University of New Mexico, Albuquerque, NM  
Program in Interdisciplinary Biological & Biomedical Sciences – Mentor: Dr. Joseph Cook
- 2010 – 2011 **Graduate Assistant**, University of New Mexico, Albuquerque, NM  
Museum of Southwestern Biology – Division of Genomic Resources
- 2008 – 2010 **Research Associate II**, Institute for Systems Biology, Seattle, WA  
Mentors: Drs. Leroy Hood & David Galas
- 2006 – 2008 **Research Scientist Assistant**, University of Washington, Seattle, WA  
Genome Sciences Department – Mentors: Drs. Michael MacCoss & James Thomas
- 2004 – 2006 **Undergraduate Researcher**, University of Minnesota, Minneapolis, MN  
Department of Medicine – Mentor: Dr. Patricia Tam

## Grants & Awards

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- 2016 Lynn Hertel Memorial Scholarship
- 2016 Donald Caughran Memorial Scholarship
- 2016 Alvin R. and Caroline G. Grove Summer Research Scholarship
- 2015, 2016 Society for the Study of Evolution Travel Grant
- 2015 NM-INBRE Sequencing & Bioinformatics Pilot Award
- 2015 American Society of Mammalogists Grant-in-Aid of Research
- 2012 – 2015 Gaudin Scholarship
- 2011, 2015 Graduate Research Allocations Committee Research Grant
- 2011 Program for Interdisciplinary Biological and Biomedical Sciences Graduate Fellowship

## Research Interests

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Molecular evolution, functional genomics, bioinformatics, transcriptomics, next-generation sequencing technologies, genome engineering, systems biology, epigenetics, phylogenomics.

## Publications

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11. Y.S. Cho, J.H. Jun, H.M. Kim, O. Chung, S.G. Park, H.Y. Lee, S. Kim, J.H. Yeo, **J.A. Weber**, A. Manica, S.J. O'Brien, J.S. Edwards, J. An, C.C. Witt, J. Bhak. Raptor genomes reveal evolutionary signatures of predatory and nocturnal lifestyles. *Submitted*.
10. **J.A. Weber\***, J. Kim\*, O. Jung\*, J.H. Jeon, H. Lee, S. Jho, Y.S. Cho, D.S. Kim, W. Paek, S. Kim, H. Lee, S. Lee, J.S. Edwards, J.A. Cook, J. An, J. Bhak. Genomic perspectives on adaptation and conservation in the endangered long-tailed goral (*Naemorhedus caudatus*). *In Revision*. **\*Contributed equally**
9. H.J. Lee, O. Chung, Y.S. Cho, S. Jho, J.H. Jun, J. Kim, **J.A. Weber**, J.S. Edwards, J. Lim, W.K. Paek, J. Bhak. A whole genome analysis of the red-crowned crane provides insight into avian longevity. *In Review*.
8. J. Kim\*, **J.A. Weber\***, S. Jho\*, J. Jang, J.H. Jun, Y.S. Cho, H.M. Kim, H. Kim, Y. Kim, O. Chung, C. Kim, H.J. Lee, B. Kim, K. Han, S. Lee, I.S. Koh, K. Chae, J.S. Edwards, J. Bhak. KoVariome: Korean National Standard Reference Variome database of whole genomes with SNV, Indel, CNV, and SV analyses. *Scientific Reports* 8(1):5677 (2018). **\*Contributed equally**
7. S. Kim, Y.S. Cho, H.M. Kim, O. Chung, H. Kim, S. Jho, H. Seomun, J. Kim, W.Y. Bang, C. Kim, J. An, C.H. Bae, Y. Bhak, S. Jeon, H. Yoon, Y. Kim, J. Jun, H. Lee, S. Cho, O. Uphyrkina, A. Kostyria, J. Goodrich, D. Miquelle, M. Roelke, J. Lewis, A. Yurchenko, A. Bankevich, J. Cho, S. Lee, J.S. Edwards, **J.A. Weber**, J. Cook, S. Kim, H. Lee, A. Manica, I. Lee, S.J. O'Brien, J. Bhak, J.H. Yeo. Comparison of carnivore, omnivore, and herbivore mammalian genomes with a new leopard assembly. *Genome Biology* 17:211 (2016).
6. B.S. McLean, K.C. Bell, J.L. Dunnum, A. Abrahamson, J.P. Colella, E.R. Deardorff, **J.A. Weber**, A.K. Jones, F. Salazar-Miralles, J.A. Cook. Natural history collections-based research: progress, promise, and best practices. *Journal of Mammalogy* 97(1):287–29 (2016).
5. O. Chung, S. Jin, Y.S. Cho, J. Lim, H. Kim, S. Jho, H. Kim, J. Jun, H. Lee, A. Chon, J. Ko, J.S. Edwards, **J.A. Weber**, K. Han, S.J. O'Brien, A. Manica, J. Bhak, W.K. Paek. The first whole genome and transcriptome of the cinereous vulture reveals adaptation in the gastric and immune defense systems and possible convergent evolution between the Old and New World vultures. *Genome Biology* 16(1):1-11 (2015).
4. C.R. Tyler, **J.A. Weber**, M. Labrecque, J.M. Hessinger, J.S. Edwards, A.M. Allan. ChIP-Seq analysis of the adult male mouse brain after developmental exposure to arsenic. *Data in Brief* 5:248-54 (2015).
3. Y. Ogasawara, N. Torrez-Martinez, A.D. Aragon, B.J. Yackley, **J.A. Weber**, A. Sundararajan, T. Ramaraj, J.S. Edwards, C.E. Melancon. High-quality draft genome sequence of *Actinobacterium Kibdelosporangium* sp. MJ126-NF4, producer of type II polyketide azicemicins, using Illumina and PacBio technologies. *Genome Announcements* 3(2):e00114-15 (2015).
2. **J.A. Weber**, D.H. Baxter, S. Zhang, D.Y. Huang, K.H. Huang, M.J. Lee, D.J. Galas, K. Wang. The microRNA spectrum in 12 body fluids. *Clinical Chemistry* 56(11):1733-41 (2010).
1. K. Wang, S. Zhang, **J.A. Weber**, D. Baxter, D.J. Galas. Export of microRNAs and microRNA-protective protein by mammalian cells. *Nucleic Acids Research* 38(20): 7248-59 (2010).

See <https://scholar.google.com/citations?hl=en&user=IMBahUcAAAAJ> for current publications and citations.

### Non-Refereed Publications:

3. D.N. Freed, R. Aldana, **J.A. Weber**, J.S. Edwards. The Sentieon Genomics Tools – A fast and accurate solution to variant calling from next-generation sequence data. *bioRxiv* doi:10.1101/115717 (2017).
2. **J.A. Weber**, R. Aldana, B.D. Gallagher, J.S. Edwards. Sentieon DNA pipeline for variant detection - Software-only solution, over 20x faster than GATK 3.3 with identical results. *PeerJ PrePrints* 4:e1672v2 (2016).

1. K. Wang, S. Zhang, **J.A. Weber**, D. Baxter, D.J. Galas. Mammalian cells in culture actively export specific microRNAs. *Nature Precedings* hdl:10101/npre.2009.3718.1 (2010).

## Selected Presentations

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- Sequencing, Finishing, and Analysis in the Future Meeting, 12th Annual Meeting, Santa Fe, NM, 2017. *Whole genome comparisons of montane hummingbirds reveal targets of natural selection during independent high-altitude colonizations.*
- American Society of Mammalogists, 96th Annual Meeting, Minneapolis, MN, 2016. *The molecular basis of high-elevation adaptation in wild cavies.*
- Society for the Study of Evolution, Annual Meeting, Austin, TX, 2016. *The molecular evolution of high-altitude adaptation in Andean hummingbirds.*
- University of New Mexico Department of Biology, Albuquerque, NM, 2014. *Genomic signatures of high-altitude adaptation in an Andean hummingbird.*
- Society for Molecular Biology and Evolution Annual Conference, Chicago, IL, 2013. *The molecular basis of high-altitude adaptation in a hummingbird (Oreotrochilus melanogaster).*
- National Institute of Biomedical Imaging and Bioengineering Training Grantees Meeting, Bethesda, MD, 2012. *A whole genome assembly of the Black-breasted Hillstar (Oreotrochilus melanogaster).*
- New Mexico Bioinformatics Symposium, Santa Fe, NM, 2012. *The molecular evolution of high-altitude adaptation in guinea pigs.*
- New Mexico Bioinformatics Symposium, Santa Fe, NM, 2011. *Mammalian cells in culture actively export specific microRNAs.*
- Institute for Systems Biology 7th Annual International Symposium, Systems Biology and Engineering, Seattle, WA, 2010. *A global survey of microRNA in human body fluids.*
- Institute for Systems Biology 6th Annual International Symposium, Seattle, WA, 2009. *MicroRNA in Human Body Fluids.*

## Teaching Experience

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### University of New Mexico

- 2014, 2018 **Guest Lecturer**, Biology 519, Chemistry 587: Transcriptome Technologies & Bioinformatics
- 2017 **Co-Instructor**, Biology 519, Chemistry 587 – Genome Technologies & Bioinformatics
- 2016 **Co-Instructor**, Biology 519, Chemistry 587 – Transcriptome Technologies & Bioinformatics
- 2015 **Guest Lecturer**, Biology 519, Chemistry 587 – Genome Technologies & Bioinformatics
- 2013 **Teaching Assistant**, Biology 202 – Genetics

## Field Experience

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### Museum of Southwestern Biology, Mammal Division

- 2015 Infectious disease monitoring and mammal surveys in Darién Province, Panama
- 2011 – 2013 New Mexico mammal surveys

## Professional Activities & Service

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- Reviewer for *BMC Evolutionary Biology*
- Mentor to 2 post-baccalaureate students, 4 undergraduate students, and 1 high school student
- Professional Memberships: Society for Molecular Biology and Evolution, Society for the Study of Evolution, American Society of Mammalogists
- K-12 Science Fair Judge
- Santa Fe Alliance for Science Volunteer