

GREER A. DOLBY

Department of Biology, University of Alabama at Birmingham

E: gdolby (at) uab (dot) edu

www.greerdolby.org | www.BajaGeoGenomics.org | [@gadolby](https://twitter.com/gadolby) | [gadolby](https://www.instagram.com/gadolby)

EDUCATION

2015	Ph.D.	Biology <i>Physical drivers of spatiotemporal genetic patterns and evolutionary processes among and within species of the North American southwest</i> Advisor: David K. Jacobs	UCLA	Los Angeles, CA
2013	MSc.	Biology	UCLA	Los Angeles, CA
2008	B.A.	(1) Earth Sciences (2) Biology	Boston University	Boston, MA

APPOINTMENTS

2022–		<i>Assistant Professor (tenure-track)</i> University of Alabama at Birmingham, Department of Biology		Birmingham, AL
2022–		<i>Affiliated Faculty</i> Arizona State University, School of Life Sciences		Tempe, AZ
2020–2022		<i>Affiliated Faculty</i> Center for Mechanisms of Evolution, Bidesign Institute		Tempe, AZ
2019–		<i>Campus Affiliate (Adjunct)</i> Tumamoc Lab, University of Arizona		Tucson, AZ
2019–2022		<i>Assistant Research Professor (non tenure-track)</i> Arizona State University, School of Life Sciences		Tempe, AZ
2016–2019		<i>Postdoctoral Research Associate</i> Arizona State University, School of Life Sciences Advisor: Kenro Kusumi		Tempe, AZ

RESEARCH INTERESTS

I study how Earth's geoclimatic processes shape the formation of biodiversity using empirical and theoretical approaches. I apply new quantitative models to integrate paleo-landscapes changes with genomic signatures that record how populations evolved with those landscapes. This burgeoning field of geogenomics is founded on synthesis, innovation, and convergence science.

HONORS & AWARDS

2023	Desert Tortoise Council, Annual research award	Co-Awardee
2017–present	Desert Tortoise Council, Board of Directors	Elected member
2015	Simons Foundation Junior Fellow	Finalist
2014	UCLA Schechtman Award for Teaching Excellence	Nominee
2013	UCLA Graduate poster competition award	First place
2010	NSF Graduate Research Fellowship Program (GRFP)	Honorable Mention
2006	NSF Research Experience for Undergraduates (REU)	Fellow

GRANTS

Current grants (\$3.6M total; \$1.8M to ASU/UAB)

\$269,706 (subaward: \$55k, ASU)	2022–2024	ASU CoPI	Texas Southwest Gas <i>Conservation genomics and disease ecology of the Texas tortoise, Gopherus berlandieri</i> (lead: Shawn McCracken, TAMU-CC) (not transferred to UAB)
\$869,404 (261,413, UAB)	2021–2024	UAB PI	NSF IOS Integrative Ecological Physiology <i>IMAGiNE: Understanding hierarchical controls on adaptation to aridity through physio-genomics</i> Award 2107975 (transferred to UAB)
\$2,600,000 (\$838k, ASU)	2019–2024	UAB PI	NSF EAR Frontier Research in Earth Sci. Collaborative Research: <i>Testing evolutionary pseudocongruence along the Baja California peninsula through integration of geologic and genomic data</i> Award 1925535 (transferred to UAB)

Pending (\$13.09M; \$2.1M to UAB)

\$12,500,000 (subaward: \$0.5M, UAB)		UAB PI	NSF, Biology Integration Institute <i>BII: REE-Thinking Biology</i> (lead: Colleen Doherty, NCSU)
\$1,556,669		Co-PI	NSF DEB Evolutionary Processes (EP) <i>Gene Flow Between Environmental and Microbiome Bacteria in the Presence of Selection for Antimicrobial Resistance</i> (PI: Jeff Morris)

Completed grants (\$171,059)

\$25,000	2019–2020	PI	AZ Dept. of Game & Fish <i>GIS resources for the Sonora mud turtle</i>
\$52,458	2017–2020	CoPI	AZ Dept. of Game & Fish Heritage Fund <i>Characterizing the Sonoran Desert tortoise through genomic analyses of hybrids and speciation</i>
\$8,000	2019–2020	PI	Dovetail Genomics™ Tree of Life Award <i>Structural variants across the hybrid zone of a desert tortoise speciation event</i>
100k CPU-hrs	2018–2019	PI	XSEDE Research Computing Allocation: <i>Characterizing the Sonoran Desert tortoise through genomic analyses of hybrids and speciation (TG-BIO180021)</i>
~1.2M CPU-hrs	2018–2019	PI	Blue Waters, National Center for Supercomputing Applications (NCSA) Broadening Participation Allocation: <i>Fine-scale geospatial interpolation of variants across hundreds of genomes to determine drivers of speciation</i>
\$11,970	2017–2019	PI	Desert Tortoise Council Research Grant: <i>Genomic insights into extralimital populations and hybrids of a threatened species</i>

\$33,375	2017–2018	coPI	Dept. of Interior—U.S.G.S. Cooperative agreement, Ecosystem Studies Unit: <i>Differential immune expression of tortoises raised on invasive versus native grasses</i>
\$5,400	2016–2017	coPI	Dovetail Genomics Matching Funds Award: <i>Improved scaffolding for the desert tortoise genome v2.0</i>
\$7,496	2016–2017	PI	ASU Fostering Postdoctoral Research in the Life Sciences <i>Deciphering ecological drivers of speciation & local adaptation in the desert tortoise complex</i>
\$1,900	2014–2015	PI	American Museum of Natural History Lerner Gray Memorial Grant
\$14,960	2011–2013	coPI	NSF Doctoral Dissertation Improvement Grant (DDIG) Dissertation Research: <i>An interdisciplinary approach to testing intraspecific evolutionary processes</i>
\$6,000	2009–2012	PI	UCLA Research Award, N=3
\$4,500	2006–2008	PI	Boston University Undergraduate Research Award , N=3 (w/ Maureen Raymo)

FELLOWSHIPS

Completed fellowships/awards (\$105k)

\$1,000	2015	awardee	Next Generation Sonoran Desert Researchers Travel Award
\$20,500	2014–2015	awardee	UCLA Dissertation Year Fellowship
\$26,000	2008–2014	awardee	UCLA Quarterly Grad. Fellowship (<i>N=4</i>)
\$51,984	2009–2011	awardee	Dept. of Education GAANN Fellowship
\$5,000	2006	awardee	NSF REU Fellowship <i>Lamont Doherty Earth Observatory</i> (w/ S. Pekar, N. Christie-Blick, G. Mountain)

PUBLICATIONS & PRODUCTS

ORCID 0000-0002-5923-0690 [link](#) | Google Scholar [link](#)

*In preparation (*corresponding, ^trainee, † contributed equally)*

24. Araya-Donoso R[^], Bidy A[^], Munguia-Vega A, Lira-Noriega A*, **Dolby GA***, Habitat quality or quantity? Changes in niche marginality suggest adaptive pressure differences in 22 species of plants and animals. Target: *Ecography*
23. Seales JD, Stokes M*, Araya-Donoso R[^], Bennet SEK, **Dolby GA***, The life sustained by toy earths. Target: *Nature Astronomy*.
22. Baty SM[^], Araya-Donoso R[^], Orton JP[^], DeNardo DF, Kusumi K, **Dolby GA***, Draft genome of the Sonoran Desert tortoise reveals chelonian-specific adaptations. Target: *Nature Ecol. & Evol.*
21. Mellor J.[^], Byrne H, Webster TH, McCartney-Melstad E, Shaffer HB, DeNardo D, Wilson MA, Kusumi K, **Dolby GA***, Genome-wide ecological adaptation via regulatory changes in the speciation of desert tortoises. Target: *Molecular Ecology*.

Peer-reviewed publications

20. Maag G[^], Stokes M, **Dolby GA***, (*In Review*) A river runs through it: Causal graphs capture rivers' complex control on the genetic structure of populations. *Molecular Ecology Resources*. [Preprint](#)
19. Webster TH, Vannan A, Pinto BJ, Denbrock G, Morales M[^], **Dolby GA**, Fiddes IT, DeNardo DF, Wilson MA (*In review*) Incomplete dosage balance and dosage compensation in the ZZ/ZW Gila monster (*Heloderma suspectum*) revealed by *de novo* genome assembly. *Genome Biology and Evolution*. Preprint: <https://doi.org/10.1101/2023.04.26.538436>
18. Moore DG, Morales M, Walker SI, **Dolby GA*** (*resubmission planned*) The information signature of diverging lineages. *American Naturalist* Preprint: <https://doi.org/10.1101/2021.08.30.458276>
17. Kollath D, **Dolby GA**, Webster T, Barker BM (*in revision*) Characterizing the fungal community of the arizona population of Mojave desert tortoise (*Gopherus agassizii*) in order to uncover potential pathogens. *Journal of Arid Environments*.
16. McCoy BM[^], Brassington L[^], Jin K, **Dolby GA**, Shrager S, Collins D, Dunbar M, DAPC, Snyder-Mackler N, (*In press*) Social determinants of health and disease in companion dogs. *Evolution, Medicine, and Public Health*. Preprint: <https://doi.org/10.1101/2022.04.08.487645>
15. Dawson MN, Ribas CC, **Dolby GA**, Fritz SC (2022) Geogenomics: toward synthesis. *Journal of Biogeography*, 49, 1657–1661. <https://onlinelibrary.wiley.com/doi/pdf/10.1111/jbi.14467>
14. Araya-Donoso R[^], Baty SM, Alonso-Alonso P, Sanín MJ, Wilder BT, Munguía-Vega A, **Dolby GA*** (2022), Implications of barrier ephemerality and generation time in Geogenomic research. *Journal of Biogeography*, 49, 2050–2063. <https://doi.org/10.1111/jbi.14487>
13. Araya-Donoso R[^], Orton JP[^], Ryan MJ, Jones CA, Kusumi K, **Dolby GA***, (2022) Geospatial assessment of freshwater invasive species to inform turtle conservation and management. *Aquatic Conservation*, 32, 981–992. <https://onlinelibrary.wiley.com/doi/abs/10.1002/aqc.3816>
12. **Dolby GA***, Bennett SEK*, Dorsey RJ, Stokes M, Riddle BR, Lira-Noriega A, Munguia-Vega A, Wilder B*, (2022) Integrating Earth-life systems: A geogenomics approach. *Trends in Ecology and Evolution (TREE)*, 37, 371–384. †**Commissioned** <https://doi.org/10.1016/j.tree.2021.12.004>
11. **Dolby GA*** (2021) Towards a unified framework to study causality in Earth-life systems, *Molecular Ecology*, 30, 5628–5642. <https://doi.org/10.1111/mec.16142>
10. **Dolby GA*** (2021) The hidden landscape: Evidence that sea-level change shaped the present population genomic patterns of marginal marine species, *Molecular Ecology*, 30, 1357–1360. †**Invited** <https://doi.org/10.1111/mec.15826>
9. Xu C[^], **Dolby GA**, Drake K*, Esque T, Kusumi K* (2020) Immune and Sex-Biased Gene Expression in the threatened Mojave Desert tortoise, *Gopherus agassizii*. *PLoS ONE*, 15, e0238202. DOI: [10.1372/journal.pone.0238202](https://doi.org/10.1372/journal.pone.0238202)
8. **Dolby GA***, Bedolla A[^], Bennett SEK, Jacobs DK* (2020) Global physical controls on estuarine habitat distribution during sea level change: Consequences for genetic diversification through time, *Global and Planetary Change*, 187, 103128. †**Invited**. DOI: [10.1016/j.gloplacha.2020.103128](https://doi.org/10.1016/j.gloplacha.2020.103128)
7. Orton J[^], Morales M[^], Schmidlin K, Fontenele RS, Kraberger S, Kraberger S, Leavitt D, Webster TH, Wilson MA, Kusumi K, **Dolby GA***, Varsani A* (2020) Virus discovery in desert tortoise fecal samples: Novel circular single stranded DNA viruses. *Viruses*, 12, 143. DOI: [10.3390/v12020143](https://doi.org/10.3390/v12020143)
6. **Dolby GA***, Morales M[^], Webster TH, DeNardo DF, Wilson MA, Kusumi K* (2020) Discovery of a new TLR gene and gene expansion event through improved desert tortoise genome assembly with chromosome-scale scaffolds. *Genome Biology and Evolution*, 12, 3917–3925. DOI: [10.1093/gbe/evaa016](https://doi.org/10.1093/gbe/evaa016)
5. **Dolby GA***, Dorsey RJ, Graham MR (2019) A legacy of geo-climatic complexity and speciation along the lower Colorado River: Insights from the geologic record and 33 desert-adapted animals, *Journal of Biogeography*, 46, 2479–2505. DOI: [10.1111/jbi.13685](https://doi.org/10.1111/jbi.13685)
4. **Dolby GA***, Ellingson RA, Findley LT, Jacobs DK* (2018) How sea level change mediates genetic divergence in coastal species across regions with varying tectonic and sediment processes, *Molecular Ecology*, 27, 994–1101. DOI: [10.1111/mec.14487](https://doi.org/10.1111/mec.14487)

3. Tollis M, DeNardo DF, Cornelius JA, **Dolby GA**, Edwards T, Henen BT, Karl AE, Murphy RW, Kusumi K (2017) The Agassiz's Desert tortoise genome provides a resource for the conservation of a threatened species, *PLoS ONE*, 12:5, e0177708. DOI: [10.1371/journal.pone.0177708](https://doi.org/10.1371/journal.pone.0177708)
2. **Dolby GA***, Hechinger R, Ellingson RA, Findley LT, Lorda J, Jacobs DK* (2016) Sea-level driven glacial-age refugia and post-glacial mixing on subtropical coasts, a palaeohabitat and genetic study, *Proceedings of the Royal Society B*, 283:20161571, 1–8. DOI: [10.1098/rspb.2016.1571](https://doi.org/10.1098/rspb.2016.1571)
1. **Dolby GA***, Bennett SEK, Lira-Noriega A, Wilder BT, Munguía-Vega A (2015) The geologic and climatic forcing of biodiversity surrounding the Gulf of California, *Journal of the Southwest*, 57:2–3, 391–455. DOI: [10.1353/jsw.2015.0005](https://doi.org/10.1353/jsw.2015.0005)

Published technical reports

1. **Dolby GA***, Webster TH, DeNardo D, Edwards T, Byrne H, Kusumi K, Wilson MA (2021) *Characterizing the Sonoran Desert tortoise through genomic analyses of hybrids and speciation*. #I17001, Arizona Game and Fish Department, Phoenix, Arizona.

Published abstracts

14. **Dolby GA**, Dorsey RJ, Bennett SEK, Hausback B, Lira-Noriega A, Darin M, Araya-Donoso R, Baty S, Orton J, Stokes M, Munguia-Vega A, Kusumi K, Wilder BT (2020) Can we use causal theory to understand how Earth processes shape life? Examples from the Baja California peninsula, MX, AGU Fall Meeting, IN006-0002, 8 Dec 2020.
13. Araya-Donoso R[^], Munguía-Vega A, Dorsey RJ, Bennett SEK, Lira-Noriega A, Wilder BT, Kusumi K, **Dolby GA** (2020) Genomic and ecological signatures of landscape change: a geologically-constrained, simulation-based case study in the Baja California Peninsula, AGU Fall Meeting, EP036-0011, 11 Dec 2020.
12. Bennett SEK, Darin M, Dorsey RJ, Hausback B, **Dolby GA**, Sawlan M, Wilder BT, Martínez-Gutiérrez G, Hernández-Salgado Y, Grandy S (2020) Tectonic controls on landscape evolution and habitat distributions along the central Baja California Peninsula, AGU Fall Meeting, EP028-0007, 10 Dec 2020.
11. Dorsey RJ, **Dolby GA**, Darin M, Bennett SEK, Hausback B, Wilder BT, Pecha M, Martínez-Gutiérrez G, Hernández-Salgado Y, Grandy S (2020) New Discovery of Pliocene Tidal Deposits Near the Crest of the Central Baja California Peninsula: A Key Constraint on Vertical Crustal Motions and Genetic Divergence, AGU Fall Meeting, EP026-04, 10 Dec 2020.
10. Grandy S, Hausback B, Bennett SEK, Dorsey RJ, Darin M, **Dolby GA**, Sawlan M, Wilder B, Martínez-Gutiérrez G, Hernández-Salgado Y (2020) Late Miocene-Pliocene Volcanism in the Sierra de San Francisco, Central Baja Peninsula, AGU Fall Meeting, V020-0025, 10 Dec 2020.
9. Hausback B, Dorsey RJ, Bennett SEK, Darin M, **Dolby GA**, Schmitt A, Sawlan M, Wilder B, Pecha M, Martínez-Gutiérrez G, Hernández-Salgado Y (2020) Topographic and Volcanic Evolution of Central Baja California, Mexico – Constraints and Evidence for a Pliocene Marine Embayment or Trans-Peninsular Strait, AGU Fall Meeting, EP028-0008, 10 Dec 2020.
8. Bennett SEK, Darin M, Dorsey R, Hausback B, **Dolby GA**, Sawlan M, Wilder BT, Martínez-Gutiérrez G, Hernández-Salgado Y, Grandy S (2020) The influence of Miocene to recent tectonics and landscape evolution on genetic diversity along the central Baja California peninsula. *Geological Society of America Abstracts with programs*, 52:4.
7. Hausback B, Bennett SEK, Darin M, Dorsey R, Grandy S, **Dolby GA**, Sawlan M, Martínez-Gutiérrez G, Hernández-Salgado Y (2020) Long-lived subduction and post-subduction volcanism and incision in the Sierra San Francisco, central Baja California peninsula, Mexico. *Geological Society of America Abstracts with programs*, 52:4.
6. **Dolby GA**, Bedolla AM[^], Bennett SEK, Jacobs DK (2019) Global physical controls on estuarine habitat abundance during sea level change with implications for richness and diversification of marginal marine faunas. *Geological Society of America Abstracts with programs*, 51:5, 172-11.
5. **Dolby GA**, Jacobs DK (2017) Sea-level change mediates genetic diversification of coastal fishes. *Geological Society of America Abstracts with Programs*, 49:6.

4. Jacobs DK, **Dolby GA**, Hechinger R, Lorda J, Ellingson R, Findley L (2017) Sea-level cycles generate glacial age refugia on subtropical coasts. *Society for Integrative and Comparative Biology; Oxford University Press*, 56:E302.
3. **Dolby GA**, Jacobs DK (2014) Habitat modeling and genetic signatures of postglacial recolonization for tidal estuaries. *American Geophysical Union*, 2014:PP13C-02.
2. **Dolby GA**, Ellingson RA, Day PP, Jacobs DK (2012) How origination of modern fish lineages may reflect timing of when the Gulf of California opened: a new biological approach. *Geological Society of America Abstracts with Programs*, 44:3, 18.
1. **Dolby GA**, Pekar SF, Mountain GS, Christie-Blick N (2006) A comparison of stratal geometry in the Greenhouse and Icehouse worlds from multichannel seismic reflection and chirp sonar data from the New York Bight. *Geological Society of America Abstracts with programs*, 38:7, 227.

Animations & educational videos (^student)

1. **Dolby GA**, ^Pataranutaporn P, Jacobs DK, Kusumi K (2017) *Sea level & genetic diversification*. Vimeo. <https://vimeo.com/219921821>

INVITED TALKS

2023	University of Oklahoma <i>A Geogenomic perspective: how Earth processes shape biological speciation</i>	Oklahoma City, OK
2023	University of Oregon (cancelled) <i>"A Geogenomic perspective: how Earth processes shape biological speciation"</i>	Eugene, OR
2023	University of Mississippi, Biology Department <i>"A Geogenomic perspective: how Earth processes shape biological speciation"</i>	Oxford, MS
2022	University of Alabama at Birmingham, Department of Biology Faculty search—Assistant Professor, Biology <i>"External controls on biodiversity & species evolution"</i>	Birmingham, AL
2021	ASU Beyond Center for Fundamental Concepts in Science, @Emergence group, <i>"Information & Earth-life evolution"</i>	Tempe, AZ
2021	ASU Biodesign's Chalk Talk <i>"Geology, Genomics, and a hidden history"</i>	Tempe, AZ
2021	ASU Biodesign's Town Hall, 7 minutes of science <i>"Geology & the origins of new biodiversity"</i>	Tempe, AZ
2021	Dovetail Genomics , Genomes of Plants and Animals Conference <i>"Putting 'genomes' in the emerging field of 'geogenomics'"</i>	Scotts Valley, CA
2020	Universidad San Francisco de Quito , College of Bio. and Env. Sci. <i>"Where does biodiversity come from? Landscape change and the formation of new species"</i>	Quito, Ecuador
2020	San Diego Museum of Natural History , Binational Advisory Committee <i>"Baja GeoGenomics: Understanding Earth-life evolution on the Baja California peninsula"</i>	San Diego, CA
2019	Arizona State University , School of Life Sciences New faculty seminar, SoLS Cafe <i>"How Earth processes shape life & diversity"</i>	Tempe, AZ
2018	Arizona State University , School of Earth and Space Exploration Faculty search—Assistant Professor, Geobiology <i>"Geo-genomics & the coevolution of Earth and life"</i>	Tempe, AZ
2015	Arizona State University , School of Life Sciences	Tempe, AZ
2015	Washington State University , School of Biological Sciences	Pullman, WA

CONFERENCE PRESENTATIONS ^TRAINEES

- Tliemat J[^], Crump P, **Dolby GA**, Kusumi K, McCracken SF (2023) Establishing collaborative networks to increase surveillance of disease in Texas tortoises, Southwestern Association of Naturalists.
- Dolby GA** (2023) Building explicit causal frameworks in evolutionary genomics: From concept to analysis. *Evolution national annual meeting*, Albuquerque, NM. ***Invited**
- Araya-Donoso R[^], **Dolby GA**, Geneva AJ, Kusumi K, (2023) Genomic features associated with different phenotypes in two Anolis species. *Evolution national annual meeting*, Albuquerque, NM.
- Baty SM[^], Mellor J[^], Araya-Donoso R[^], Paulsen A, Kusumi K, **Dolby GA** (2023) Genes under selection and genomic analyses of three parapatric desert tortoises via chromosome-scale reference genomes. *Evolution national annual meeting*, Albuquerque, NM.
- Tleimat J[^], Crump P, **Dolby G**, Kusumi K, McCracken S (2023) Texas tortoise task force: collaborative networks to increase surveillance of disease in tortoises. *Desert Tortoise Council annual meeting*, St. George, UT. Poster Presentation
- Kusumi K, **Dolby GA** (2023) Genomic approaches for chelonian conservation in a changing world. *Desert Tortoise Council annual meeting*, St. George, UT.
- Baty SM[^], Paulsen A, Kusumi K, **Dolby GA** (2023) Genome comparison of Sonoran and Mojave desert tortoises (*G. morafkai* and *G. agassizii*) and analysis of immunological gene evolution. *Desert Tortoise Council annual meeting*, St. George, UT.
- Vargas K[^], Kraberger S, Custer JM, Paietta EN, Culver M, **Dolby GA**, Varsani A (2023) Identification of novel polyomavirus in wild Sonoran Desert rodents, *American Society for Virology*.
- Seales J, Stokes MF, Araya-Donoso R[^], **Dolby GA**, Bennett SEK (2022) The species richness of exoplanet mountains. AbSciCon (Astrobiology Science Conference), Atlanta, GA.
- Dolby GA**, (2021) On understanding causal relationships within the Earth-life sciences. *American Geophysical Union annual meeting*, New Orleans, LA.
- Hausback BP, Schmitt AK, Heizler M, **Dolby GA**, Dorsey RJ, Bennett SEK, Darin MH, Grandy S, Sawlan MG, Gardner K, Wilder B, (2021) Geochronological constraints on the volcanic and topographic evolution of central Baja California, Mexico. *American Geophysical Union annual meeting*, New Orleans, LA.
- Gardner K, Dorsey RJ, Usher E, Bennett SEK, Darin MH, Hausback BP, **Dolby GA** (2021) Geometric and spectral analysis of relict channel planforms in central Baja California, Mexico: A novel approach to paleo-sea level reconstruction and testing hypotheses for genetic divergence. *American Geophysical Union annual meeting*, New Orleans, LA.
- Araya-Donoso R[^], Alonso-Alonso P, Maag G[^], Dorsey RJ, Bennett SEK, Wilder B, Kusumi K, Munguia-Vega A, **Dolby GA** (2021) Genetic divergence and ephemeral barriers: Reconciling genetic and geological timescale within geogenomics. *American Geophysical Union annual meeting*, New Orleans, LA.
- Baty S[^], Singhal S, Araya-Donoso R[^], Fehlberg SD, Munguia-Vega A, Wilder B, Kusumi K, **Dolby GA** (2021) Drivers of speciation using genomic analysis of two desert brittlebush species, *Encelia farinosa* and *Encelia californica*. *American Geophysical Union annual meeting*, New Orleans, LA.
- Bennett SEK, Darin MH, Hausback BP, Dorsey RJ, Grandy S, Gardner K, Schmitt AK, Heizler M, Sawlan MG, **Dolby GA**, Wilder B, Gutierrez GM, Hernandez Salgado YE (2021) Volcano-tectonic evolution of central Baja California peninsula, Mexico: Implications for speciation and barriers to gene flow. *American Geophysical Union annual meeting*, New Orleans, LA.
- Orton JP[^], McCoy B, Araya-Donoso R[^], Baty S[^], Cuddy A, Sharma Y, Wang D, DeNardo DF, Kusumi K, **Dolby GA** (2021) Comparative genomic analysis of chelonians using a new de novo genome for the Sonoran Desert tortoise, *Gopherus morafkai*. *Society for the Study of Evolution*.
- Baty S[^], Singhal S, Orton J[^], Fehlberg S, Munguia-Vega A, Wilder B, Kusumi K, **Dolby GA** (2021). Genome annotations and analyses of two recently diverged brittlebush species, *Encelia farinosa* and *Encelia californica*. *Society for the Study of Evolution*.
- Araya-Donoso R[^], Munguia-Vega A, Baty S[^], Alonso-Alonso P, Wilder B, Lira-Noriega A, Kusumi K, **Dolby GA** (2021). Using genetic simulations and climatic niches to test plant and animal population divergence on the Baja California peninsula. *Society for the Study of Evolution*.
- Moore DG, Morales M, Walker SI, **Dolby GA** (2021) The information signature of diverging populations: Using partial information decomposition to study speciation. *Society for the Study of Evolution*.
- Dolby GA**, Webster TH, Byrne H, DeNardo D, Wilson MA, Kusumi K (2021) Historical effective population size and geographic population structure in Mojave and Sonoran desert tortoises. *Desert Tortoise Council Annual Symposium*, Las Vegas, NV.
- Araya-Donoso R, Orton JP, Jones CA, Kusumi K, **Dolby GA** (2020) Factors determining Invasion Risk of Crayfish and Bullfrog in Populations of the Sonora mud turtle (*Kinosternon sonoriense*) in Arizona. *Turtle Survival Alliance*. Virtual meeting.

- Bennett SEK, Darin M, Dorsey R, Hausback B, **Dolby GA**, Sawlan M, Wilder BT, Martínez-Gutierrez G, Hernández-Salgado Y, Grandy S (2020) The influence of Miocene to recent tectonics and landscape evolution on genetic diversity along the central Baja California peninsula. *116th Annual GSA Cordilleran Section Meeting*, Pasadena, CA.
- Hausback B, Bennett SEK, Darin M, Dorsey R, Grandy S, **Dolby GA**, Sawlan M, Martínez-Gutierrez G, Hernández-Salgado Y (2020) Long-lived subduction and post-subduction volcanism and incision in the Sierra San Francisco, central Baja California peninsula, Mexico. *116th Annual GSA Cordilleran Section Meeting*, Pasadena, CA.
- Dolby GA**, Webster TH, Edwards T, DeNardo DF, Wilson MA, Kusumi K, Using whole genome data to understand speciation of desert tortoises in western Arizona, *Desert Tortoise Council Annual Symposium*, Las Vegas, NV.
- Dolby GA**, Bedolla A, Bennett SEK, Jacobs DK (2019) Global physical controls on estuarine habitat abundance during sea level change with implications for richness and diversification of marginal marine faunas, Oral Presentation. *Geological Society of America Annual Meeting*, Phoenix, AZ.
- Dolby GA**, Kusumi K (2019) Population genomic analysis of speciation among threatened desert tortoises. Oral Presentation. *Conservation and Biology of Tortoises and Freshwater Turtles*, Tucson, AZ. † **Invited**
- Dolby GA** (2019) Speciation by neutral and adaptive forces: disentangling pseudo-congruent genomic signatures within geo-climatically complex regions *in* Deep Time Paleogenomics. Oral Presentation. *North American Paleontological Convention*, Riverside, CA. † **Invited, Keynote speaker**
- Dolby GA**, Webster TH, DeNardo D, Wilson MA, Kusumi K (2019) Population genomic analysis of speciation among threatened desert tortoises. *Evolution*, Providence, RI.
- Dolby GA**, Webster TH, DeNardo D, Wilson MA, Kusumi K (2019) Genomic insights into speciation of southwestern desert tortoises. *Desert Tortoise Council Annual Symposium*, Tucson, AZ.
- Dolby GA** (2018) Genomic data offers an independent perspective on evolution of the lower Colorado River region *in* Miocene to Recent evolution of the lower Colorado River corridor and the northern Gulf of California. Oral presentation. *114th Cordilleran Annual Section Meeting, Geological Society of America*, Flagstaff, AZ.
- Dolby GA**, Webster TH, DeNardo D, Wilson Sayres MA, Kusumi K (2018) Geologic history and genomic divergence between *Gopherus agassizii* and *G. morafkai*. Oral presentation. *Annual Meeting and Symposium of the Desert Tortoise Council*, Las Vegas, NV.
- Dolby GA**, Webster TH, DeNardo D, Wilson Sayres MA, Kusumi K (2018) Extrinsic forcing of genomic evolution during speciation: a geo-genomic study of *Gopherus* desert tortoises. Oral presentation. *Plant and Animal Genome XXVI Conference: Population and Conservation Genomics Workshop*, San Diego, CA.
- Dolby GA**, Jacobs DK (2017) Sea-level change mediates genetic diversification of coastal fishes. Oral presentation. *Geological Society of America Annual Meeting*, Seattle, USA.
- Dolby GA**, DeNardo D, Kusumi K (2017) Progress towards a sonoran desert tortoise genome to advance conservation and wildlife management. Oral Presentation. *Annual Meeting and Symposium of the Desert Tortoise Council*, Las Vegas, NV.
- Hutchins ED, Djordjevic D, Cornelius JA, **Dolby GA**, Ho JWK, Kusumi K (2017) The evolution of regeneration in reptiles and amphibians: insights from comparative genomic analysis of gene regulatory networks *in* Amphibian & reptile genomics: recent success, current progress, and future challenges. Oral presentation, *8th World Congress of Herpetology*, Hangzhou, China.
- Dolby GA**, Ellingson RA, Findley LT, Jacobs DK (2016) Sea-level mediated refugia as a driver of genetic diversification on subtropical coastlines--a paleohabitat and genetic study. Oral Presentation, *Society for Evolution Annual Meeting*, Austin, TX.
- Dolby GA**, Jacobs DK (2014) Habitat modeling and genetic signatures of postglacial recolonization for tidal estuaries. Oral Presentation, *American Geophysical Union Fall Meeting*, San Francisco, CA.
- Dolby GA**, Jacobs DK (2014) Tidal estuarine habitat abundance since the last glacial maximum in southern and Baja California. Poster Presentation, *California Estuarine Research Society Annual Meeting*, Bodega Bay, CA.
- Dolby GA**, Jacobs DK (2014) Assessing GIS Estuarine habitat predictions with a new statistical approach for genetic signatures of postglacial recolonization. Oral Presentation, *Society for Evolution Annual Meeting*, Raleigh, NC.

- Dolby GA**, Ellingson R, Day PP, Jacobs DK (2012) How origination of modern fish lineages may reflect timing of when the Gulf of California opened: a new biological approach *in*: What fossil ages and distributions tell us about the history of the ancient Gulf of California. Oral Presentation, *Geological Society of America Annual Meeting*, Querétaro, MX. **Invited**
- Dolby GA**, Ellingson R, Jacobs DK (2011) An Interdisciplinary Approach to Studying Incipient Speciation: The role of seaways in the phylogeography of the American shadow goby *in*: Ecology and evolutionary biology of gobies in north america: conservation concerns in a changing world. Oral Presentation, *American Fisheries Society Annual Meeting*, Seattle, WA.
- Dolby GA**, Dea JH[^], Lau LF[^], Rose K[^] (2010) Genetically distinct extralimital populations of two fish: evidence of extended ranges during the mid-Holocene climatic optimum in southern California. Poster Presentation, *American Assoc. for the Advancement of Science*, San Diego, CA. [trainees]
- Dolby GA**, Pekar SF, Mountain GS, Christie-Blick N (2006) A comparison of stratal geometry in the greenhouse and icehouse worlds from multichannel seismic reflection and chirp sonar data from the New York Bight. Poster Presentation, *Geological Society of America Annual Meeting*, Philadelphia, USA.

FIELD EXPERIENCE

- 2019–2022 Baja California, Mexico (multi-week trips)—ongoing integrated geology-biology fieldwork in the mid-peninsular region (organizer, permittee)
- 2017–2019 Western Arizona, USA (9 multi-day trips)—surveying and subcarapacial blood collection from desert tortoises; habitat descriptions (organizer, permit-holder).
- 2014–2015 Southern California, USA (3 single-day trips)—augur coring, seining to collect fishes, geomorphological descriptions of estuary sites, deploying cameras and DO/Temp recorders.
- 2009–2014 Baja California, Mexico (3 multi-week trips)—led measuring, describing, sampling stratigraphic sections; seining and collecting fishes and invertebrates in nearshore and estuarine habitats (organizer).
- 2008 Queensland, Australia (3 weeks)—field techniques course on effects of coastal sedimentation processes on Great Barrier Reef formation. Work included snorkeling, sediment coring, sketching rock sections, seismic data collection on the James Kirby Research Vessel.
- 2007 Ecuador & Galápagos Islands (5 months)—independent projects in Andean montane ecosystems, Amazon rainforest (Tiputini Biodiversity Station), Galápagos Islands and Pacific coastal regions focusing on observational and non-invasive projects.

STEM TRAINING IN DIVERSITY, INCLUSION, OUTREACH

- | | | |
|------|-----------|--|
| 2022 | SREB | SREB Institute on Teaching and Mentoring: tabling to recruit more diverse scientists to join our UAB programs. (1 day) |
| 2020 | SABER | Striving for Racial Justice in Academic Biology (7-part series) |
| 2020 | Yale/NIST | Scientific Teaching short course (6 weeks) |
| 2018 | ASU | Mentoring 101: First-Generation Graduate Success Panel (part day) |
| 2016 | ASU | Alan Alda Center for Communicating Science, workshop (1 day) |
| 2015 | UCLA | Scientific Visualizations Technical by Texas Advanced Computing Center, workshop (2 days) |

TEACHING EXPERIENCE

Instructor of record (G-graduate, U-undergraduate)

- | | | | |
|------------------|----|-----------|---|
| 2022 | | UAB | Molecular Genetics – (U/G) 48 students |
| 2017, 2018, 2021 | 3x | ASU, co-I | Molecular Genetics & Genomics (G) - 20 students |

2013–2015	2x	UCLA	Introduction to Ecology and Behavior (<i>U</i>)- 30 students
Teaching Fellow			
2015		UCLA	Introduction to GIS (<i>U</i>) - 60 students, average TA <i>mean rating per section: 8.8/9, 8.9/9, 8.8/9</i>
2015		UCLA	Conservation Biology (<i>U</i>) – 45 students
2009–2015	3x	UCLA	Evolution (<i>U</i>) – 40 students
2009–2014	4x	UCLA	Molecular Evolution (<i>U</i>) - 69 students, average TA <i>mean rating per section: 8.8/9, 8.5/9</i>
2011–2013	2x	UCLA	Life: concepts and issues (non-majors course) (<i>U</i>)- 75 students
Guest lecturer			
2019–2021	3x	ASU	Graduate Evolutionary Biology (<i>G</i>)
2018		ASU	Molecular Cell Biology & Neuroscience (<i>G</i>)
2017–2018	2x	ASU	Environ. Life Sciences: Grand Challenges (<i>G</i>)
2017		ECSU	Organismal Bio., <i>Eastern Connecticut State U. (U)</i>
2015		UCLA	Evolution (<i>U</i>)
2013		UCLA	Molecular Evolution (<i>U</i>)

MENTORSHIP & ADVISING

Chair*/Co-Chair

Jade Mellor*	PhD	UAB	2022–	<i>Evolutionary Biology PhD Program</i>
Austin Bidy*	PhD	UAB	2022–	<i>Evolutionary Biology PhD Program</i>
Garett Maag	MSc	ASU	2022–2023	<i>Evolutionary Biology MSc Program</i>
Sarah Baty	PhD	ASU	2020–	<i>Evolutionary Biology PhD Program</i>
Raul Araya-Donoso	PhD	ASU	2019–	<i>Evolutionary Biology PhD Program</i>

Graduate Committee Member

Mohammad Mijanur Rahman	PhD	UAB	2023–	<i>Biology PhD Program</i>
Scot Jacob Halko	PhD	UAB	2023–	Genetics, Genomics & Bioinf. (GBS)
Akash Nagarajan	PhD	UAB	2022–	<i>Biology PhD Program</i>
Jacqueline Tleimat	PhD	TAMUCC	2022–	<i>Biology PhD Program</i>
Derek Benson	PhD	ASU	2021–	<i>Biology PhD Program</i>
Brianah McCoy	PhD	ASU	2020–	<i>Molecular & Cell. Bio PhD Program</i>
Anthony Kalifeh	MSc	ASU	2019–2021	<i>Biology MSc Program</i>
Lalitamba Alla	MSc	ASU	2021–2022	<i>Molecular & Cell. Bio MSc Program</i>
Joey Orton	MSc	ASU	2018–2022	<i>Evolutionary Biology</i>

Graduate Mentor

Cindy Xu	PhD	ASU	2015–2020	<i>Molecular & Cell. Bio PhD Program</i> <u>Current position:</u> Postdoctoral researcher, Mass. General Hospital
Alex Gleason	MSc	ASU	2017–2018	<i>Biomedical Diagnostics</i> <u>Current position:</u> Clin. Research Coordinator, Mayo Clinic
John Cornelius	MSc	ASU	2015–2018	<i>Molecular & Cell. Bio PhD Program</i>

Undergraduate Mentor (*capstone/honors/publications)

Avery Williams	BS	UAB	2022–	Bioinformatics
*Melissa Hall	BS	UAB	2022–	Bioinformatics
*Ovoke Moss	BS	UAB	2022–	Immunology
Anna Nguyen	BS	UAB	2022–	Bioinformatics
Kirstin Slaton	BS	UAB	2022–	Immunology
Heaven Wright	BS	UAB	2022– 2023	Genomics

*Courtney Collins	BS	ASU	2021–2022	<i>Viromics & evolution</i> <u>Honors thesis:</u> RNA and DNA Viruses Present in South African Caracal Populations
*Ciara Harding	BS	ASU	2021–2022	<i>Viromics & evolution</i> <u>Honors thesis:</u> DNA Viruses Present in Southern Arizona Bat Populations
*Yash Sharma	BS	ASU	2020–2023	<i>Bioinformatics</i> <u>Honors thesis:</u> Comparative genomic analysis of the Heat Shock Factor (HSF) gene family: Roles in heat response, proteotoxic stress, and spermatogenesis
*Dylan Wang	BS	ASU	2020–2023	<i>Bioinformatics</i> <u>Honors thesis:</u> Gene family evolution of Mucin genes across reptiles
*Alexander Yu	BS	ASU	2020–2022	<i>Bioinformatics</i>
*Anthony Khalifeh	BS	ASU	2020–2022	<i>Biology</i> <u>Honors thesis:</u> Towards understanding ssDNA viral dynamics in <i>Marmota flaviventris</i> (yellow-bellied marmots)
*Matheo Morales	BS	ASU	2016–2020	<i>Computer science, Bioinformatics</i> <u>Honors thesis:</u> Genome-wide mining and comparative analyses of the Toll-like Receptor 7 and 11 gene subfamilies in reptiles. <u>Current position:</u> NSF GRFP & Yale Gruber fellowship recipient; PhD student at Yale University
*Arturo Bedolla	BS	ASU	2017–2019	<i>GIS (geographical information systems)</i> <u>Current position:</u> clerk at private law firm
Shruthi Seetharaman	BS	ASU	2019	<i>Bioinformatics</i>
Ray Elementi		ASU	2019	<i>Art-science</i>
*Jake Staut	BS	ASU	2018	<i>GIS (geographical information sys.)</i> <u>Current position:</u> serving in the US Army
Vivek Mahendra	BS	ASU	2018	<i>Computer science, biology</i>
Sandilya Babbepalli	BS	ASU	2018	<i>Computer science, biology</i>
Clemente Francisco	BS	ASU	2018	<i>Art-science</i>
Gaspar Manuel	BS	ASU	2018	<i>Computer science, GIS</i>
*Pat Pataranutaporn	BS	ASU	2017	<i>Art-science</i> <u>Current position:</u> PhD student, MIT Media Lab
Rena Emond	BS	UCLA	2014	<i>Biology</i> <u>Current position:</u> PhD Student at City of Hope
Shirin Mostofi	BS	UCLA	2013–2014	<i>Biology</i> <u>Current position:</u> PhD student at Loma Linda University
Hannah Barroga	BS	UCLA	2012–2014	<i>Biology</i> <u>Current position:</u> Resident, Kaiser Permanente; MD, Western University of Health Sciences
Kelly Riestenberg	BS	UCLA	2012–2014	<i>Biology</i>
Clive Long Fung Lau	BS	UCLA	2009–2013	<i>Biology</i> <u>Current position:</u> PhD student at UCLA
Faiz Tousif, MD	BS	UCLA	2010–2012	<i>Biology</i>

Kate Rose	BS	UCLA	2010–2011	<u>Current position:</u> Resident Physician, University of Toledo; MD & MSc, University of Toledo <i>Biology</i>
Jessica Dea	BS	UCLA	2009–2010	<i>Biology</i> <u>Current position:</u> Pharmacy Supervisor, Kaiser Permanente; Pharm.D., University of Southern California
Boyang Zhang	BS	UCLA	2009–2010	<i>Biology</i>

COMMUNITY OUTREACH

2016, 2019, 2021	<u>International Science and Engineering Fair (ISEF) Grand Award Judge:</u> Computational Biology & Bioinformatics
2018–2019	<u>Arizona PBS TV show, “Catalyst”</u> —interviewee, field contributor (30-min episode, reptiles of the southwest)
2017–2020	<u>CompuGirls:</u> coordinate and lead student outreach panels for underserved and underrepresented adolescent girls
2017-2019	<u>Turtle-trapping at the Phoenix Zoo</u> —checked tortoise traps for nonnative species and processed turtles, interacted with volunteers (one day)
2011–2013	<u>Apprenticeship teacher</u> at SPARK: a program to keep at-risk middle school youths in school

PROFESSIONAL SERVICE

2023	Reviewer , UAB Outstanding Advising Awards (university level)
2023	Invited <i>ad hoc</i> Reviewer , Leibniz Collaborative Excellence Award (K531-2023) for highly innovative research (\$1M EUR prize), Berlin, Germany.
2023	Invited Panelist , Museum of Natural and Cultural History (Eugene, Oregon) public lecture series: <i>Topographic complexity of the western US and the evolution of mammals</i> .
2022–present	UAB Department of Biology, Diversity, Equity, Inclusion, Belonging (DEIB) committee: drafted off-campus guidelines and revised departmental DEIB vision statement (department level)
2022–present	Co-Founder and Co-Owner , MunDo Ventures LLC, for novel analytics solutions.
2022	NSF Panelist , three days, <i>PACSP: Partnership to Advance Conservation Science and Practice</i> (3 days)
2021	Session Organizer/Chair , American Geophysical Union annual conference, “ <i>New Developments and Integrated Approaches in the Earth-Life Sciences</i> ”
2021	Species Status Assessment (SSA) Reviewer for the U.S. Fish and Wildlife Service, Sonoran Desert tortoise.
2021	NSF Panelist , three days, <i>RoL: Understanding the Rules of Life</i> .
2020–2023	Guest Editor , <i>Journal of Biogeography</i> special issue: “Integrating geology, geography and genomics to study the coupled evolution of life and Earth”. Handled 9 manuscripts.
2019–present	Co-Founder, Executive Committee Member , Baja GeoGenomics (BGG) consortium [funded by NSF EAR 1925535]— www.BajaGeoGenomics.org <ul style="list-style-type: none"> • <i>First-of-its-kind staged and fully cross-referenced repository for all project data products</i> • <i>Educational animations, interactive maps, K-12 interactive exercises</i>
2018–2019	Co-Chair , Student Activities Sub-committee— <i>Geological Society of America National Annual Meeting</i> , 2019.

- 2017–2022 **Elected Board Member**, Desert Tortoise Council, Board of Directors—1) Chairperson, fundraising committee; 2) Student Outreach/Engagement Committee; 3) Ecosystem Advisory Committee for Arizona
Write comment letters for construction and management decisions in Arizona to convey scientific knowledge to the public and stakeholders.
- 2016–2022 **Specialist**, *Arizona Interagency Desert Tortoise Team*, translate latest genetic literature to inform policy and management decisions at the state level for species of special conservation concern.
- 2016–2017 **Developer**, organizer, and leader of a 30-week bioinformatics reading group for postdocs and graduate students. Syllabi available at www.greerdolby.org
- 2016– **Peer reviewer**, *ad hoc* (34 reviews, 17 journals; 95th percentile on Publons, [link](#)):

<i>Trends in Ecol & Evol</i>	<i>Annals of Botany</i>
<i>(TREE)</i>	<i>Biol. J. Linnean Soc.</i>
<i>Gigascience</i>	<i>Journal of Molecular Evolution</i>
<i>Molecular Ecology</i>	<i>Frontiers in Biogeography</i>
<i>Molecular Biol. and Evol.</i>	<i>Journal of Mammalogy</i>
<i>Journal of Biogeography</i>	<i>PeerJ</i>
<i>BMC Genomics</i>	<i>Marine Environmental Research</i>
<i>Ecology & Evolution</i>	<i>Chelonian Conservation and Biology</i>
<i>Zoologica Scripta</i>	<i>Journal of Fish Biology</i>
<i>Journal of Heredity</i>	<i>Journal of Natural History</i>
- 2012 **Contributor**, Next Gen. Sonoran Desert Researchers inaugural meeting to launch the binational, cross-disciplinary society. **(invited)**
- 2011–2012 **Member**, Graduate Awards Committee, Dept. EEB, UCLA

PROFESSIONAL MEMBERSHIPS

- 2015–2022 Desert Tortoise Council (DTC)
 2014–2015 Coastal and Estuarine Research Federation (CERF)
 2012–2020 Next Generation Sonoran Desert Researchers (NGEN)
 2010–2016 American Geophysical Union (AGU)
 2009–present Society for the Study of Evolution (SSE)
 2006–present Geological Society of America (GSA)