GREER A. DOLBY

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EDUCATION

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

APPOINTMENTS

2020–	*Affiliated Faculty* Center for Mechanisms of Evolution, Biodesign Institute	Tempe, AZ
2019–	*Campus Affiliate (Adjunct)* Tumamoc Lab, University of Arizona	Tucson, AZ
2019–	*Assistant Research Professor* Arizona State University, School of Life Sciences	Tempe, AZ
2016–2019	*Postdoctoral Research Associate* Arizona State University, School of Life Sciences **Advisor: Kenro Kusumi**	Tempe, AZ
2014–2015	*Instructor of Record* UCLA, Department of Ecology and Evolutionary Biology	Los Angeles, CA
2008–2015	*Teaching Fellow* UCLA, Department of Ecology and Evolutionary Biology	Los Angeles, CA

RESEARCH INTERESTS

I study how geological processes shape the formation of biodiversity. I use quantitative models to integrate how paleo-landscapes change over time along with genomic signatures that record how populations evolved with those landscapes. This marries both empirical and theoretical approaches.

Motivating questions

- *Which geo-climatic processes most generate biodiversity over recent and deep time?*
- *How do organisms vary in their response to shared geo-climatic forces?*
- *How can we apply new tools (e.g., information and causal theory) to formalize and quantify landscape change, genomic divergence, and the relationship between the two?*

HONORS & AWARDS

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)

$269,706 ($55k, ASU)	2022–2024	**ASU CoPI**	**Texas Southwest Gas** *Conservation genomics and disease ecology of the Texas tortoise,* Gopherus berlandieri (lead: Shawn McCracken, TAMU-CC)
$869,404	2021–2024	**CoPI**	**NSF IOS Integrative Ecological Physiology** ***IMAGiNE:*** *Understanding hierarchical controls on adaptation to aridity through physio-genomics* Award 2107975
$2,600,000 ($838k, ASU)	2019–2024	**ASU PI**	**NSF EAR Frontier Research in Earth Sci.** Collaborative Research: *Testing evolutionary pseudocongruence along the Baja California peninsula through integration of geologic and genomic data* Award 1925535

Pending/Near-term submissions ($13.09M; $2.2M to ASU)

$12,500,000 ($1.6M, ASU)		**ASU CoPI**	**NSF, Biology Integration Institute** *BII: REE-Thinking Biology* (lead: Colleen Doherty, NCSU)
$586,757		**PI**	**NSF DEB Evolutionary Processes (EP)** *Quantifying the information signature of speciation events*

Completed grants ($171,059)

$25,000	2019–2020	**PI**	**AZ Dept. of Game & Fish** *GIS resources for the Sonora mud turtle*
$52,458	2017–2020	**CoPI**	**AZ Dept. of Game & Fish Heritage Fund** *Characterizing the Sonoran Desert tortoise through genomic analyses of hybrids and speciation*
$8,000	2019–2020	**PI**	**Dovetail Genomics™ Tree of Life Award** *Structural variants across the hybrid zone of a desert tortoise speciation event*
100k CPU-hrs	2018–2019	**PI**	**XSEDE** Research Computing Allocation: *Characterizing the Sonoran Desert tortoise through genomic analyses of hybrids and speciation (TG-BIO180021)*
~1.2M CPU-hrs	2018–2019	**PI**	**Blue Waters, National Center for Supercomputing Applications (NCSA)** Broadening Participation Allocation: *Fine-scale geospatial interpolation of variants across hundreds of genomes to determine drivers of speciation*
$11,970	2017–2019	**PI**	**Desert Tortoise Council** Research Grant: *Genomic insights into extralimital populations and hybrids of a threatened species*
$33,375	2017–2018	**coPI**	**Dept. of Interior—U.S.G.S.** Cooperative agreement, Ecosystem Studies Unit: *Differential immune expression of tortoises raised on invasive versus native grasses*

$5,400	2016–2017	**coPI**	**Dovetail Genomics** Matching Funds Award: *Improved scaffolding for the desert tortoise genome v2.0*
$7,496	2016–2017	**PI**	**ASU Fostering Postdoctoral Research in the Life Sciences** *Deciphering ecological drivers of speciation & local adaptation in the desert tortoise complex*
$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: *An interdisciplinary approach to testing intraspecific evolutionary processes*
$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 *(N=4)*
$51,984	2009–2011	awardee	**Dept. of Education GAANN Fellowship**
$5,000	2006	awardee	**NSF REU Fellowship** *Lamont Doherty Earth Observatory* (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)*

19. **Dolby GA***, Webster TH, McCartney-Melstad E, Shaffer HB, DeNardo D, Wilson MA, Kusumi K*****, Speciation by river vicariance and monsoon adaptation via low-coverage genome sequencing of desert tortoises. Target: *Molecular Ecology.*

18. McCoy BM^, Brassington L^, Jin K, **Dolby GA**, Shrager S, Collins D, Dunbar M, DAPC, Snyder-Mackler N, *Social determinants of health and disease in companion dogs*. Preprint: https://doi.org/10.1101/2022.04.08.487645

17. Moore DG, Morales M, Walker SI, **Dolby GA*** The information signature of diverging lineages. Target: *Molecular Biology and Evolution*. Preprint: https://doi.org/10.1101/2021.08.30.458276

Peer-reviewed publications

16. Webster TH, Vannan A, Pinto BJ, Denbrock G, Morales M^, **Dolby GA**, Fiddes IT, DeNArdo DF, Wilson MA (*submitted*) Complete dosage compensation without balance between the sexes in the ZZ/ZW Gila monster (*Heloderma suspectum*) revealed by *de novo* genome assembly. *Journal of Evolutionary Biology*.

15. Dawson MN, Ribas CC, **Dolby GA**, Fritz SC (*submitted*) Geogenomics: toward synthesis. *Journal of Biogeography.*

14. Araya-Donoso R^, Baty SM, Alonso-Alonso P, Sanín MJ, Wilder BT, Munguía-Vega A, **Dolby GA*** (*in revision*), The implications of barrier ephemerality and generation time in Geogenomic research. *Journal of Biogeography.*

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.*

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).* ***†Commissioned***

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

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

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

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

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

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

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

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

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

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, Huasback B, Wilder BT, Pecha M, Martínez-Gutierrez G, Harnández-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-Gutierrez G, Harnández-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-Gutierrez G, Harnández-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-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. *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-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. *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

2022 University of Alabama at Birmingham, Department of Biology Birmingham, AL
Faculty search—Assistant Professor, Biology
"External controls on biodiversity & species evolution"

2021	**ASU Beyond Center for Fundamental Concepts in Science**, @Emergence group, *"Information & Earth-life evolution"*	Tempe, AZ
2021	**ASU Biodesign's** Chalk Talk *"Geology, Genomics, and a hidden history"*	Tempe, AZ
2021	**ASU Biodesign's** Town Hall, 7 minutes of science *"Geology & the origins of new biodiversity"*	Tempe, AZ
2021	**Dovetail Genomics**, Genomes of Plants and Animals Conference *"Putting 'genomes' in the emerging field of 'geogenomics'"*	Scotts Valley, CA
2020	**Universidad San Francisco de Quito**, College of Bio. and Env. Sci. *"Where does biodiversity come from? Landscape change and the formation of new species"*	Quito, Ecuador
2020	**San Diego Museum of Natural History**, Binational Advisory Committee *"Baja GeoGenomics: Understanding Earth-life evolution on the Baja California peninsula"*	San Diego, CA
2019	**Arizona State University**, School of Life Sciences New faculty seminar, SoLS Cafe *"How Earth processes shape life & diversity"*	Tempe, AZ
2018	**Arizona State University**, School of Earth and Space Exploration Faculty search—Assistant Professor, Geobiology *"Geo-genomics & the coevolution of Earth and life"*	Tempe, AZ
2015	**Arizona State University**, School of Life Sciences	Tempe, AZ
2015	**Washington State University**, School of Biological Sciences	Pullman, WA

CONFERENCE PRESENTATIONS

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 fo 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–	Baja California, Mexico (multi-week trips)—ongoing integrated geology-biology fieldwork in the mid-peninsular region (organizer, permitee)
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

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)*

2017, 2018, 2021	3x	ASU, co-I	Molecular Genetics & Genomics *(G)* - 20 students
2013–2015	2x	UCLA	Introduction to Ecology and Behavior *(U)* - 30 students

Teaching Fellow

2015		UCLA	Introduction to GIS *(U)* - 60 students, average TA *mean rating per section:* ***8.8/9, 8.9/9, 8.8/9***
2015		UCLA	Conservation Biology *(U)* – 45 students
2009–2015	3x	UCLA	Evolution *(U)* – 40 students
2009–2014	4x	UCLA	Molecular Evolution *(U)* - 69 students, average TA *mean rating per section:* ***8.8/9, 8.5/9***
2011–2013	2x	UCLA	Life: concepts and issues (non-majors course) *(U)* - 75 students

Guest lecturer

2019–2021	3x	ASU	Graduate Evolutionary Biology *(G)*
2018		ASU	Molecular Cell Biology & Neuroscience *(G)*
2017–2018	2x	ASU	Environ. Life Sciences: Grand Challenges *(G)*
2017		ECSU	Organismal Bio., *Eastern Connecticut State U. (U)*
2015		UCLA	Evolution *(U)*
2013		UCLA	Molecular Evolution *(U)*

MENTORSHIP & ADVISING

Co-Chair/PhD Advisor

Sarah Baty	PhD	ASU	2020–	*Evolutionary Biology PhD Program*
Raul Araya-Donoso, MSc	PhD	ASU	2019–	*Evolutionary Biology PhD Program*

Graduate Committee Member

Jacqueline Tleimat	PhD	TAMUCC	2022–	*Biology PhD Program*
Derek Benson	PhD	ASU	2021–	*Biology PhD Program*
Lalitamba Alla	PhD	ASU	2021–	*Molecular & Cell. Bio PhD Program*
Brianah McCoy	PhD	ASU	2020–	*Molecular & Cell. Bio PhD Program*
Anthony Kalifeh	MSc	ASU	2019–	*Biology MSc Program*
Joey Orton	PhD	ASU	2018–	*Evolutionary Biology PhD Program*

Graduate Mentor

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

Undergraduate Mentor

Courtney Collins	BS	ASU	2021–	*Viromics & evolution* Honors thesis: RNA and DNA Viruses Present in South African Caracal Populations
Ciara Harding	BS	ASU	2021–	*Viromics & evolution* Honors thesis: DNA Viruses Present in Southern Arizona Bat Populations
Yash Sharma	BS	ASU	2020–	*Bioinformatics*
Dylan Wang	BS	ASU	2020–	*Bioinformatics*
Alexander Yu	BS	ASU	2020–	*Bioinformatics*

Anthony Khalifeh	BS	ASU	2020	*Biology* Honors thesis: Towards understanding ssDNA viral dynamics in *Marmota flaviventris* (yellow-bellied marmots)
Matheo Morales	BS	ASU	2016–2020	*Computer science, Bioinformatics* Honors thesis: Genome-wide mining and comparative analyses of the Toll-like Receptor 7 and 11 gene subfamilies in reptiles. Current position: NSF GRFP & Yale Gruber fellowship recipient; PhD student at Yale University
Arturo Bedolla	BS	ASU	2017–2019	*GIS (geographical information sys.)* Current position: clerk at private law firm
Shruthi Seetharaman	BS	ASU	2019	*Bioinformatics*
Ray Elementi		ASU	2019	*Art-science*
Jake Staut	BS	ASU	2018	*GIS (geographical information sys.)* Current position: serving in the US Army
Vivek Mahendra	BS	ASU	2018	*Computer science, biology*
Sandilya Babbepalli	BS	ASU	2018	*Computer science, biology*
Clemente Francisco	BS	ASU	2018	*Art-science*
Gaspar Manuel	BS	ASU	2018	*Computer science, GIS*
Pat Pataranutaporn	BS	ASU	2017	*Art-science* Current position: PhD student, MIT Media Lab
Rena Emond	BS	UCLA	2014	*Biology* Current position: PhD Student at City of Hope
Shirin Mostofi	BS	UCLA	2013–2014	*Biology* Current position: PhD student at Loma Linda University
Hannah Barroga	BS	UCLA	2012–2014	*Biology* Current position: Resident, Kaiser Permanente; MD, Western University of Health Sciences
Kelly Riestenberg	BS	UCLA	2012–2014	*Biology*
Clive Long Fung Lau	BS	UCLA	2009–2013	*Biology* Current position: PhD student at UCLA
Faiz Tousif, MD	BS	UCLA	2010–2012	*Biology* Current position: Resident Physician, University of Toledo; MD & MSc, University of Toledo
Kate Rose	BS	UCLA	2010–2011	*Biology*
Jessica Dea	BS	UCLA	2009–2010	*Biology* Current position: Pharmacy Supervisor, Kaiser Permanente; Pharm.D., University of Southern California
Boyang Zhang	BS	UCLA	2009–2010	*Biology*

OUTREACH

2016, 2019, 2021	International Science and Engineering Fair (ISEF) Grand Award Judge: Computational Biology & Bioinformatics
2018–2019	Arizona PBS TV show, "Catalyst"—interviewee, field contributor (30-min episode, reptiles of the southwest)
2017–	CompuGirls: coordinate and lead student outreach panels for underserved and underrepresented adolescent girls

2017 Turtle-trapping at the Phoenix Zoo—checked tortoise traps for nonnative species and processed turtles, interacted with volunteers (one day)

2011–2013 Apprenticeship teacher at SPARK: a program to keep at-risk middle school youths in school

PROFESSIONAL SERVICE

2021 **Session Organizer/Chair**, American Geophysical Union annual conference, *"New Developments and Integrated Approaches in the Earth-Life Sciences"*

2021 **Species Status Assessment (SSA) Reviewer** for the U.S. Fish and Wildlife Service, Sonoran Desert tortoise.

2021 **NSF Panelist,** three days, *Understanding the Rules of Life.*

2020- **Guest Editor**, *Journal of Biogeography* special Issue: "Integrating geology, geography and genomics to study the coupled evolution of life and Earth".

2019– **Co-Founder, Executive Committee Member**, Baja GeoGenomics (BGG) consortium *[funded by NSF EAR 1925535]*— www.BajaGeoGenomics.org

- *First-of-its-kind staged and fully cross-referenced repository for all project data products*
- *Educational animations, interactive maps, K-12 interactive exercises*

2018–2019 **Co-Chair**, Student Activities Sub-committee—*Geological Society of America National Annual Meeting*, 2019.

2017– **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– **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* (32 reviews, 17 journals; 95th percentile on Publons, link):

Molecular Ecology
Molecular Biol. and Evol.
Journal of Biogeography
BMC Genomics
Ecology & Evolution
Zoologica Scripta
Journal of Heredity
Annals of Botany
Biol. J. Linnean Soc.
Journal of Molecular Evolution
Frontiers in Biogeography
Journal of Mammalogy
PeerJ
Marine Environmental Research
Chelonian Conservation and Biology
Journal of Fish Biology
Journal of Natural History

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– Desert Tortoise Council (DTC)
2014–2015 Coastal and Estuarine Research Federation (CERF)
2012– Next Generation Sonoran Desert Researchers (NGEN)

2010–2016	American Geophysical Union (AGU)
2009–	Society for the Study of Evolution (SSE)
2006–	Geological Society of America (GSA)