

CURRICULUM VITAE

HOWARD BRADLEY SHAFFER

Department of Ecology and Evolutionary Biology
621 Charles E. Young Drive South, Room LS5120
Box 951606
University of California
Los Angeles, CA 90095-1606 USA

310-825-3836 (voice)
530-902-3078 (cell)
brad.shaffer@ucla.edu (email)
<https://sites.lifesci.ucla.edu/eeb-shafferlab/>

Education:

University of Chicago Ph.D. in Evolutionary Biology December 1982
University of California, Berkeley B.A. in Biology June 1976

Current Position:

Distinguished Professor, Department of Ecology and Evolutionary Biology & Institute of Environment and Sustainability, UCLA
Director, UCLA/La Kretz Center for California Conservation Science
Director, Stunt Ranch Reserve, UC Natural Reserve System
Director and Principle Investigator, California Conservation Genomics Project, 2019-present

Major Grants and Awards (1990-present):

USFWS/SANDAG grant, “Conservation Genomics of the Quino Checkerspot”, \$47,526 (funding may change slightly), 1/2023- 12/2024 (approximate dates)
Yosemite Conservancy, “Genetic Analysis of Western Pond Turtles in Yosemite National Park”, \$23,375 12/2020-12/2025
Section 6 Recovery Challenge Grant, US Fish and Wildlife Service/CA Dept. of Fish and Wildlife, “Genetic Assessment and Recovery Action Recommendations for the California Tiger Salamander (*Ambystoma californiense*) in the Fort Ord Management Unit”, \$197,506, 01/01/2023 – 01/01/2026
Genetic and Landscape Improvement Recovery for the Endangered Santa Barbara Distinct Population Segment of the California Tiger Salamander”, US Fish and Wildlife Service, \$250,000, February 1, 2022 – January 31, 2027
Environment Canada, “Genetic Analysis of Tiger Salamander Tissue from Manitoba”, \$25,000, December 2021 – March 2022.
US Fish and Wildlife Service, “Historical and current trends in effective population size estimates in the Western spadefoot, *Spea hammondi*” Grant number # F21AC02546-00, 10/2021 – 3/2025, \$262,776
Florida Fish and Wildlife Commission, “Diamondback Terrapin Genetic Assessment”, \$72,233 FWC Agreement 20006, Oct. 2019 – Dec. 2022
US Fish and Wildlife Service, “High-Throughput Genomic Monitoring of Non-Native Genotypes from the Sonoma County Distinct Population Segment of the California Tiger Salamander, *Ambystoma californiense*”, 8/1/2020 – 7/31/2022, \$70,945

US Fish and Wildlife Service, “Research to Support Conservation and Recovery of Federally Listed and At-risk Reptiles and Amphibians” 7/15/2020 – 12/31/2021, \$75,924

State of California, “California Conservation Genomics Project”, 2019-2022, \$12,000,000 (UCLA led, Shaffer PI, with work distributed to other UC campuses, UC Award ID RSI-19-690224)

State of California, “A Synthetic Analysis of Reptiles and Amphibians to inform the CCGP”, 2019-2022, \$927,000 (Ian Wang, UC Berkeley, co-PI; approximately \$322,000 to the Wang lab at Berkeley, and \$605,000 to the Shaffer lab at UCLA)

State of California, California Conservation Genomics Project subawards for shoulderband snails (\$45,000), ruby spot damselfly (\$43,580), golden eagle (\$49,940); 5 butterfly species (\$147,234); total \$285,754

US Fish and Wildlife Service, “Investigating Recovery Needs and Population Dynamics of the Santa Barbara County Distinct Population Segment of the California Tiger Salamander”, 2019-2020, \$10,000

US Fish and Wildlife Service, “Risk Level Assessment Report for the Western Pond Turtle”, 2018-2020, \$15,000

Tim Gregory (gift) “Turtle and Tortoise Conservation Genomics” (support for postdoc Natalia Gallego-Garcia), \$75,000 (year 1), \$98,000 (year 2), \$89,225 (year 3) June 2019-2022, \$80,000 (year 4); \$342,225 total

Tim Gregory (gift), “Turtle Conservation Genomics”, \$21,399, January 2019

Natural Communities Coalition (formerly NROC), “Upland Habitat Restoration & Seasonal Pool Creation – Western Spadefoot (*Spea hammondi*)”, 2019-2021, \$91,585

California Department of Fish and Wildlife, M-SWG, “Advancing Western Pond Turtle Conservation in Washington, Oregon and California” 2018-2020, \$440,843 (UCLA portion, \$130,000)

Caltrans, “Landscape Genomics Study for California Tiger Salamander”, 2018-2020, \$199,985

UCLA Grand Challenge, “Conservation Genomics of Los Angeles Biodiversity”, 2018-2023, \$200,000

Sacramento Attorney General Office, Gift in support of research on California tiger salamander conservation, \$50,000 (awarded 2017)

US Department of Interior-CVPCP, “Rangewide and Landscape Genomics of the Central DPS of California Tiger Salamander”, \$350,865.00 (2017-2019) (Award number R17AC00063)

US Fish and Wildlife Service, “Species samples for landscape genomics” \$235,000, (2017-19) (Award number F16PX02290)

US Dept. of Interior/Fish and Wildlife Service: Genome-enabled Population Viability Analysis (Award number of the Mojave Desert Tortoise Award number F13AC00425, 2016-18, \$147,485 (supplemental funding)

Natural Communities Coalition (formerly NROC), “Population genomic assessment of habitat connectivity, effective population size, and the success of management activities for the western spadefoot (*Spea hammondi*) in central Orange County”, 2016-2018, \$150,000

UCLA Grand Challenge, “California Conservation Genomics Seed Grant: Modernizing Endangered and Threatened Species Management”, 2015-17, \$70,000

USFWS grant “Effective population size genetic analysis for the California tiger salamander in Santa Barbara County”, 2015-2018, \$71,675; supplement, “Terrestrial Habitat Use and Molecular Analysis of Hybridization in Endangered Santa Barbara County Tiger Salamanders”, \$83,150, 2016-2020; **total award \$154,825.**

Department of the Interior-National Park grant: Landscape genomics of the amphibians of the Santa Monica Mountains, \$126,422 (matching funds for Gary Bucciarelli)

NSF: SG Will phylogenomics resolve the most difficult parts of the tree of life: an empirical evaluation with the turtle genus *Pseudemys* \$150,000

National Park Service, 2016, “Field laboratory addition in the Santa Monica Mountains, \$75,000.

Los Angeles County Collaborative Grant, 2014-2017, “ A field laboratory in the Santa Monica Mountains”, \$500,000.

Natural Communities Coalition of Orange County, Wildlife Management and Monitoring Program, 2015, \$25,000

Los Angeles County Natural History Museum/UCLA La Kretz Center Collaborative Postdoctoral Funding Project, 2014-2016, \$50,000 (for Elizabeth Long)

Santa Monica Mountains National Park/UCLA La Kretz Center Collaborative Postdoctoral Funding Project, 2014-2016, \$50,000 (for John Benson)

Bureau of Land Management (with Mike Westphal), Population genomics of California tiger salamanders at Ft. Ord, 2013-2018, \$50,000

National Council for Scientific and Technological Development, Brazil, Special Visiting Researcher, 2014-2016, Ecology and Molecular Genetics of Small, Semi-Aquatic Brazilian Turtles in the Amazon Basin, \$126,027 (total award, collaborative with Richard Vogt)

NSF “Collaborative Research: Tracking genes in real time as they traverse a hybrid invasion landscape” 2013-2018, \$684,251.

US Dept. of Interior/Fish and Wildlife Service: Genome-enabled Population Viability Analysis of the Mojave Desert Tortoise. 2013-15, \$199,671.

California Department of Fish and Wildlife “Landscape genomic evaluation of habitat corridors for the Desert Tortoise” 2013-2014. \$155,000 (approximately)

Sabin Family Foundation: Conservation genomics of Long Island tiger salamanders. 2013-2017, \$49,256

Auburn University/Section 6 (USDI) “Genetic analysis of the Alabama red-bellied turtle (*Pseudemys alabamensis*): estimation of population subdivision, among population gene flow, and population decline.” 10/2011-9/2012, \$50,000 (direct cost; half to UCLA).

US Department of Interior “Adult movement behavior and long-term trends in the population dynamics of the central population of the California tiger salamander” 2010-2013, \$268,596.00

DoD “Conservation of California tiger salamanders (*Ambystoma californiense*) at Travis Air Force Base, Solano County, California. 2009-2010, \$95,000.

NSF “Turtles of the World: Global systematics for an imperiled clade” 2008-2014, \$577,294.

US Department of Interior “Conservation genetic of California tiger salamanders (*Ambystoma californiense*)” 2007 – 2010, \$237,840.

California Department of Fish and Game, Interagency Agreement “Collaborative research on management-relevant Threatened and Endangered Species” 2007 – 2013, \$1,686,377.00.

NSF DDIG Dissertation Research "Systematic of rapid radiations: New approaches in the post-genomic age" 7/1/07 - 6/30/09, \$12,000; collaborative with R. C. Thomson.

Caltrans “Terrestrial movements of the California tiger salamander (*Ambystoma californiense*)” 2007 – 2008, \$163,917.

Sacramento County “Amphibian survey and *Spea hammondi* upland habitat use at Mather Field vernal pools” 8/2006 – 12/2008, \$40,000.00; collaborative with A. T. Chang.

USDA Forest Service, Redwood Sciences Laboratory, “*Rana cascadae* Genetics Study” 6/25/07-5/31/08, \$15,000.

Solano County Water Agency, "Identification of critical habitat for California Tiger Salamanders (*Ambystoma californiense*) in Solano County" 4/1/07-6/30/10, \$35,123.

USFS "Long-toed Salamander Genetic Analyses" 2006, \$33,027.

Caltrans "Understanding terrestrial movement of the California tiger salamander, *Ambystoma californiense*" 1/2005-5/2006, \$250,000.

NSF "Collaborative Research: Gauging introgression: Variation across the genome in mode and tempo of natural selection in a tiger salamander hybrid zone" 2005-2009, \$400,353.00 (\$238,705 to UCD), plus 2 REU supplements (\$6,000.00, 2006)

NSF "Genetics, ethics, and systematics: A workshop for turtles" 2005-2007, \$51,283.00

UC Integrated Pest Management, Exotic/Invasive Pests and Diseases Research Program "Ecological influences on invasion success of introduced genes in California tiger salamanders" 2004-2006, \$118,200.00 (direct costs)

NSF grant "Reconstructing Pleistocene range shifts in North American ectothermic vertebrates" 2002-2007, \$308,756.00, plus 2 REU supplements (\$6,000.00, 2006).

CalFed grant "Genetic identification of watershed-dependent species of special concern in the Central Valley" 2002-2005, \$851,660.00 (co-PI with Tom Smith: UCD budget, \$397,130)

EPA "Hybridization between an invasive exotic and a declining native amphibian: Molecular characterization, ecological dynamics and genetic remediation" 2001-2004 \$433,708.00

USFWS "Microsatellite analysis and terrestrial habitat requirements of the California tiger salamander, *Ambystoma californiense*" 2001-2003, \$100,000.00

USFWS "Microgeographic analysis of genetic variation in the endangered Santa Barbara tiger salamander (\$45,000.00) and the Santa Cruz long-toed salamander (\$25,000.00)" 2001-2003. (two awards, \$70,000 total)

NSF grant "The genetic consequences of long generation times in turtles" 1998-2001, \$150,000.00 plus 1 REU supplement (\$5,000.00)

Australian Research Council grant " Genetic differentiation among populations of freshwater turtle in eastern Australia, and its relationship to the history of population contraction and expansion in response to recent glacial events 1998 (Arthur Georges, University of Canberra co-PI), \$29,775.

3 awards from California state and county agencies for population genetics work on hybridization and genetic identification of California tiger salamanders, 1998-1999 (approximately \$65,000.00 total)

NSF grant "The genetic and physiological basis of life cycle convergence among Mexican ambystomatids" 1995-1999, \$317,000.00 plus 3 REU supplement (\$15,000.00)

NSF grant "The Cladogenetic Record for Turtles: Paleontological Dates, DNA Sequences, and a Test of the Molecular Clock" 1993-1996, \$199,000.00 plus 2 REU supplements (\$10,000.00)

NSF grant (Dissertation Improvement Grant for David M. Parichy) "Developmental analysis of morphological evolution: Convergence, divergence, and the origin of novelties in salamander pigment patterns" 1995-1996 \$14,000.00

NSF grant (Dissertation Improvement Grant for Karen Marchetti)- "Significance of inter-specific variation in plumage patterns of birds" 1993-1994, \$11,900.00.

National Park Service Cooperative Agreement, "Cooperative Agreement on Amphibian Population Genetics" 1993-1997, approx. \$140,000.00

NSF grant "Speciation and Phylogenetic Diversification in a Polytypic Species" 1990-1993 \$121,877.00 plus 8 REU supplements (\$40,000.00) and 1 ROA supplement (\$12,800.00)

California State Fish and Game Research Contract "Distribution and Status of the Endemic California Tiger Salamander" 1990-1993 \$50,000 (approximate budget)

Elected and Appointed Positions:

American Academy of Arts and Sciences, 2022-present
External Expert Advisory Board (EEAB) of the Biodiversity Genomics Europe (BGE)
Project (<https://biodiversitygenomics.eu>), 2022-present
Board of Governors, American Society of Ichthyologists and Herpetologists (2021-2026)
Treasurer, American Genetic Association, 2018-2021, 2021-2024
NSF Panelist, Evolutionary and Ecological Genetics, Nov. 2017
SERDP (Strategic Environmental Research and Development Program) panelist, May 2017
Natural Communities Coalition (NCC) Science Advisory Panel, 8 November 2013-
President, American Society of Ichthyologists and Herpetologists (2014)
Treasurer, Society of Systematic Biologists, 2013-2015
Board of Governors, American Society of Ichthyologists and Herpetologists (2013-2018)
Advisory Board, the Turtle Conservancy (2013-present)
Member, NCEAS working group on UCNRS Strategic Planning
University-wide Natural Reserve System Advisory Committee, Spring 2012-present
External member, Vernal Pool Oversight Committee, UC Merced (2012- Natural Reserve System)
NSF panelist, Evolutionary Genetics Preliminary proposals, April 2012, 2013
Director, La Kretz Center for California Conservation Science, 2012-present
Executive Vice President, American Genetic Association (2012-2015)
Editorial Board, Journal of Heredity 2012-present
California Landscape Conservation Cooperative (LCC) Steering Committee, 2011-present
President, American Genetics Association (2009 President elect, 2010 President, 2011, past President)
Member, NIMBioS working group on Species Delimitation, 2010-2012
Member, Amphibian Specialist Group (ASG) IUCN/SSC 2007-
SERDP grant panelist (for the Department of Defense), 2010
NSF panelist, Evolutionary Genetics Panel, October 2006
Member, Steering Committee, IUCN/SSC Tortoise and Freshwater Turtle Specialist Group 2006-
Conservation Committee, American Society of Ichthyologists and Herpetologists 2005-
Fitch Committee, American Society of Ichthyologists and Herpetologists, 2005-08 (Chair, 2008)
Director, Center for Population Biology, UC Davis 2004-2009
Axolotl Stock Center Advisory Committee, 2004-present
IUCN/SSC Tortoise and Freshwater Turtle Specialist Group 2003-present
Council, American Genetics Association, 2003-2006
Council Member, Society of Systematic Biologists, 2002-2005
Board of Governors, American Society of Ichthyologists and Herpetologists 1984-89
Board of Governors, American Society of Ichthyologists and Herpetologists 1998-2003
Council Member, Society of Systematic Zoologists (class of 1990)
Associate Editor, Annual Reviews of Ecology and Systematics, 2001-2025
Associate Editor, Ecological Applications (1997-2000, 2000-2003)
Associate Editor, Zoological Journal of the Linnean Society, 1999-2005
Associate Editor, Molecular Systematics and Evolution, Herpetologica (1988-1995)
Associate Editor, Evolution Jan 1991-Dec 1993
Editorial Board Member, Annual Reviews of Ecology and Systematics, (1996-2001)
Editorial Board, Herpetological Conservation (appointed March, 1994-present)
California/Nevada Workgroup & National Workshop member, Declining Amphibian Task Force
NBS/BRD Workgroup to Develop a National Amphibian Monitoring System (1994-present)
North Cascades National Park Research Review Panel, June, 1993

National Science Foundation Panelist (NSF), Frontiers in Integrative Biological Research (FIBR)
December, 2003

NSF panelist, Population Biology Panel: April 1992, October 1993, April 1994, April 2000, April 2002

NSF Panelist, Dissertation Improvement Grants for Evolutionary and Ecological Physiology, April, 1995

NSF Panelist, Dissertation Improvement Grants for Systematic Biology, February, 1997

Special publications committee, American Assoc. of Ichthyologists and Herpetologists, (1999-present)

Program Officer, Bay Area Biosystematists (2000-01)

EPA Panelist, Terrestrial ecosystems (2001)

NEON workshop participant, NSF (2002)

IUCN working group on Asian Turtle Crisis, (2001-present)

E.O. Wilson Award Committee, ASN (2001)

Awards and Honors:

American Academy of Arts and Sciences, elected 2022

External Expert Advisory Board (EEAB) of the Biodiversity Genomics Europe (BGE)

Project (<https://biodiversitygenomics.eu>), 2022-present

Leadership team member, Earth Biogenome Project, 2020-present

Meritorious Teaching Award in Herpetology, 2015 (this is the highest honor for teaching herpetology
awarded by Herpetology Education Committee across the three primary international societies)

Advisory Board, the Turtle Conservancy (2013-present)

President, American Society of Ichthyologists and Herpetologists (2013 President elect, 2014 President,
2015-16 Past President)

Research Associate (Herpetology), Natural History Museum of LA County, 2013-present

Executive Vice President, American Genetic Association, 2012-2015

Hrdy Fellow in Conservation Biology, Harvard University 2009-10

President, American Genetic Association (2009 President elect, 2010 President, 2011 Past President)

Darwin Day Keynote Speaker, UC Merced (March 6, 2009)

External Examiner, Heather Alexander Ph.D. examination, Simon Fraser University, 2007

Distinguished Scholarly Public Service Award, UC Davis (awarded 2006)

Visiting Scholar, University of Canberra 2004

Editorial Board, Chelonian Conservation and Biology (2003-present)

Kyushu University, Japan 2003 (Distinguished Lecturer)

Teaching Excellence Award, Northern California chapter, Phi Beta Kappa, 2002

UC Davis Division of Biological Sciences Outstanding Teaching Award, 2002

Research Faculty Affiliate, Museum of Vertebrate Zoology, Berkeley 2002-present

Fellow, California Academy of Sciences (elected for life in 2001)

Vice-Chancellors Visiting Scholar, University of Canberra 1995-96

Positions Held:

Assistant, Associate and Full Professor, UC Davis, 1987-2012

Assistant Professor, Ecology and Evolutionary Biology, University of California, Irvine 1985-87

Visiting Scholar, University of Chicago 1984-85

Post-doctoral Research Fellow (with Dr. William Atchley) 1983-84

Post-doctoral Research Fellow (with Dr. Russell Lande) 1983

Research Associate, Field Museum of Natural History

Organized and Special Exhibits:

- California Conservation Genomics Project all-hands meeting, 105 UC and agency stakeholders to meet and develop best practices for landscape genomics, September 2022
- Best Practices in Teaching Herpetology, Joint Meetings of Ichthyology and Herpetology symposium organizer, 2022 annual meetings, Spokane
- California Conservation Genomics Project *ad hoc* advisory meeting, brought in 53 UC and agency stakeholders to develop initial plan for new 10M funding in conservation genomics, September 2019
- California Conservation Genomics Project All-PI meeting, July 13-14 2020.
- Herpfest 2019, co-organized with B. Espinoza, CSUN, May 2019
- NCC Day-long workshop on vernal pools, UCLA, April 2019
- Pseudemys* species delimitation workshop organized, Gainesville, 2019
- Emys (Actinemys) pallida* Working Group Meeting, Stunt Ranch Reserve, co-organized with USFWS, April 2018
- Conservation Genomics: A Workshop for Agency and NGO Partners, held at Stunt Ranch, organized by the La Kretz Center, 23 February 2018
- California Tiger Salamander Conservation Science Symposium, Ft Ord, co-organized with USFWS, September 2017
- Symposium: Invaders and Survivors: Reptiles and Amphibians in Urban Ecosystems, International Urban Wildlife Conference (sponsor and symposium organizer), June 2017
- ASIH at 100 Centennial Celebration, New Orleans 2016 (co-organizer)
- California Conservation Genomics Initiative, Sacramento, (organized by Shaffer, in collaboration with CDFW), 1-2 February 2016
- Painted Turtle Genome Consortium, St. Louis, 6 December 2010
- Conservation Genomics, American Genetics Association President's Symposium, Hilo, Hawaii 26-29 July 2010
- The role of fossils in dating molecular phylogenies (convened following the fossil turtle symposium, Royal Tyrrell Museum, Drumheller, Alberta 20-21 October 2009)
- Workshop on Relocation of Endangered California Tiger Salamanders (organized by Shaffer, in collaboration with USFWS & CDFG) 21 March 2008
- Genetics, ethics, and systematics: A workshop for turtles (NSF funded workshop held at the Museum of Comparative Zoology, Harvard University, 2005)
- Declining Amphibians in Western North America (symposium organized for the Western Society of Naturalists, 1998)
- Systematics of Model Organisms (symposium co-organizer for Society of Systematic Biologists, 1992).
- Molecular Biology of Axolotls and other Urodeles (Provocateur on urodele evolutionary biology, International Workshop, 1993).
- Pacific Grove Natural History Museum, special exhibit on Declining California Amphibians (1994)

Books

- Thomson, R. C., A. N. Wright and H. B. Shaffer. 2016. California Amphibian and Reptile Species of Special Concern (University of California Press 390 + xv pages)

Turtle Taxonomy Working Group [A.G.J. Rhodin, J.B. Iverson, R. Bour, U. Fritz, A. Georges, H.B. Shaffer, and P.P. van Dijk]. 2017. Turtles of the World: Annotated Checklist and Atlas of Taxonomy, Synonymy, Distribution, and Conservation Status (8th Ed.). In: Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Pritchard, P.C.H., and Mittermeier, R.A. (Eds.). Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs 7:1–292. doi: 10.3854/crm.7.checklist.atlas.v8.2017. (Also listed under publications)

Turtle Taxonomy Working Group [A.G.J. Rhodin, J.B. Iverson, R. Bour, U. Fritz, A. Georges, H.B. Shaffer, and P.P. van Dijk]. 2021. Turtles of the World: Annotated Checklist and Atlas of Taxonomy, Synonymy, Distribution, and Conservation Status (9th Ed.). In: Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Stanford, C.B., Goode, E.V., Buhlmann, K.A., and Mittermeier, R.A. (Eds.). Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs 8:1–472. doi: 10.3854/crm.8.checklist.atlas.v9.2021. (Also listed under publications)

Publications (Orchid ID: [0000-0002-5795-9242](https://orcid.org/0000-0002-5795-9242)):

206. Pepin, K. M., A. J. Davis, R. S. Epanchin-Niell, A. M. Gormley, J. L. Moore, T. J. Smyser, H. B. Shaffer, W. L. Kendall, K. Shea, M. C. Runge, and S. McKee. 2022. Optimizing management of invasions in an uncertain world using dynamic spatial models. *Ecological Applications*, 32(6):1-11, e2628. <https://doi.org/10.1002/eap.2628>

205. Beninde, J., E. M. Toffelmier, A. Andreas, C. Nishioka, M. Slay, A. Soto, J. P. Bueno, G. Gonzalez, H. V. Pham, M. Posta, J. L. Pace, and H. B. Shaffer. 2022. CaliPopGen: A genetic and life history database for the fauna and flora of California. *Scientific Data*, 9(1):1-12. <https://doi.org/10.1038/s41597-022-01479-z>

204. Bucciarelli, G. M., F. Alsalek, L. B. Kats, D. B. Green, and H. B. Shaffer. 2022. Toxic relationships and arms-race coevolution revisited. *Annual Reviews of Animal Biosciences*, 10:63-80. <https://doi.org/10.1146/annurev-animal-013120-024716>

203. Lewin, H. A. (plus 84 co-authors). The Earth BioGenome Project 2020: Starting the clock. 2022. *Proceedings of the National Academy of Sciences, USA*, 119 :1-7 (No. 4 e2115635118) <https://doi.org/10.1073/pnas.2115635118>

202. Huang, Y., M. Escalona, G. Morrison, M. P. A. Marimuthu, O. Nguyen, E. Toffelmier, H. B. Shaffer, and A. Litt. 2022. Reference genome assembly of the big berry Manzanita (*Arctostaphylos glauca*). *Journal of Heredity* 113:188-196. <https://doi.org/10.1093/jhered/esab071>

201. Ferrara, C., (43 additional co-authors), and H. B. Shaffer. 2021. Richard Carl Vogt (1949–2021) and His Contributions to the Behavioral Ecology of Freshwater Turtles. *Herpetological Review* 52:704-707.

200. Gallego-García, N. , S. Caballero, and H. B. Shaffer. 2021. Are genomic updates of well-studied species worth the investment for conservation? A case study of the Critically Endangered Magdalena River turtle. *Journal of Heredity*, 112:575-589.
199. Manzo, S., E. G. Nicholson, Z. Devereux, R. N. Fisher, C. W. Brown, P. A. Scott, and H. B. Shaffer. 2021. Conservation of northwestern and southwestern pond turtles: Threats, population size estimates, and population viability analysis. *Journal of Fish and Wildlife Management*, 12(2):485–501; e1944-687X. <https://doi.org/10.3996/JFWM-20-094>
198. Turtle Taxonomy Working Group [A.G.J. Rhodin, J.B. Iverson, R. Bour, U. Fritz, A. Georges, H.B. Shaffer, and P.P. van Dijk]. 2021. Turtles of the World: Annotated Checklist and Atlas of Taxonomy, Synonymy, Distribution, and Conservation Status (9th Ed.). In: Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Stanford, C.B., Goode, E.V., Buhlmann, K.A., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group. Chelonian Research Monographs* 8:1–472. doi: 10.3854/crm.8.checklist.atlas.v9.2021. (Also listed under books)
197. Palomar, G., K. Dudek, M. Migalska, J. W. Arntzen, G. F. Ficetola, D. Jelić, E. Jockusch, I. Martínez-Solano, M. Matsunami, M., H. B. Shaffer, J. Vörös, B. Waldman, B. Wielstra, and W. Babik. 2021. Coevolution between MHC class I and antigen-processing genes in salamanders. *Molecular Biology and Evolution*, doi:10.1093/molbev/msab237.
196. Bucciarelli, G. M., M. Lechner, A. Fontes, L. B. Kats, H. L. Eisthen, and H. B. Shaffer. 2021. From poison to promise: the evolution of tetrodotoxin and its potential as a therapeutic. *Toxins* 2021, 13, 517. DOI:10.3390/toxins13080517
195. Scott, P. A., L. J. Allison, K. J. Field, R. C. Averill-Murray, and H. B. Shaffer. 2021. Individual heterozygosity predicts translocation success in threatened desert tortoises. *Science* 10.1126/science.abg3199 (Note: this is a response to a comment on Scott et al. 2020 by P. W. Hedrick, 2021).
194. Scott, P. A., L. J. Allison, K. J. Field, R. C. Averill-Murray, and H. B. Shaffer. 2021. Response to Comment on “Individual heterozygosity predicts translocation success in threatened desert tortoises.” *Science* 10.1126/science.abh2633. (Note: this is a response to a comment on Scott et al. 2020 by B. Hansson et al., 2021).
193. Messerman, A. F., A. G. Clause, S. V. L. Catania, H. B. Shaffer, and C. A. Searcy. 2021. Coexistence within an endangered predator-prey community in California vernal pools. *Freshwater Biology* 66:1296-1310. DOI: 10.1111/fwb.13717
192. Lovich, J. E., G. Jefferson, R. Reynolds, P. A. Scott, H. B. Shaffer, S. Puffer, S. Greely, K. Cummings, R. N. Fisher, K. Meyer-Wilkins, D. Gomez, M. Ford, and C. D. Otahal. 2021. Western pond turtles in the Mojave Desert? A review of their past, present, and possible future. *Vertebrate Zoology* 71:317-334. <https://doi.org/10.3897/vz.71.e63987>

191. Everson, K. M., L. N. Gray, A. G. Jones, N. M. Lawrence, M. E. Foley, K. L. Sovacool, J. D. Kratovil, S. Hotaling, P. M. Hime, A. Storfer, G. Parra-Olea, R. Percino-Daniel, X. Aguilar-Miguel, E. M. O'Neill, L. Zambrano, H. B. Shaffer, and D. W. Weisrock. 2021. Geography is more important than life history in the recent diversification of the tiger salamander complex. *Proceedings of the National Academy of Sciences, USA*, 118: 1-10 (No. 17 e2014719118).
190. Phelan, R., B. Baumgartner, S. Brand, E. Brister, S. W. Burgiel, R. A. Charo, I. Coche, A. Cofrancesco, J. A. Delborne, O. Edwards, J. P. Fisher, M. Gaywood, D. R. Gordon, G. Howald, M. E. Hunter, P. Kareiva, A. Mankad, M. Marvier, K. Moseby, A. E. Newhouse, B. J. Novak, G. Ohrstrom, S. Olson, M. J. Palmer, S. Palumbi, N. Patterson, Jr., M. Pedrono, F. Pelegri, Y. Rohwer, O. A. Ryder, J. R. Saah, R. M. Scheller, P. J. Seddon, H. B. Shaffer, B. Shapiro, M. Sweeney, M. R. Tercek, D. Thizy, W. Tilt, M. Weber, R. D. Wegrzyn, B. Whitelaw, M. Winkler, J. Wodak, M. Zimring, and P. Robbins. 2021. Intended Consequences Statement. *Conservation Science and Practice*, 2021:e371. <https://doi.org/10.1111/csp2.371>
189. Ennen, J. R., M. Agha, S. C. Sweat, W. A. Matamoros, J. E. Lovich, J. B. Iverson, A. G. J. Rhodin, R. C. Thomson, H. B. Shaffer, and C. W. Hoagstrom. 2021. A watershed moment: Analysis of sub-basins refocus the geography of turtle conservation across the globe. *Biological Conservation* 253:108925. <https://doi.org/10.1016/j.biocon.2020.108925>
188. Olson, E. O., P. A. Scott, and H. B. Shaffer. 2021. Phylogeographic origin of California slender salamanders (*Batrachoseps attenuates*) in the Sutter Buttes. *Journal of Herpetology* 55:38-45.
187. Cooper, R. D. and H. B. Shaffer. 2021. Allele specific expression and gene regulation explain transgressive thermal tolerance in non-native hybrids of the endangered California tiger salamander (*Ambystoma californiense*). *Molecular Ecology* 30:987–1004. Also preprint posted at <http://dx.doi.org/10.1101/772020>
186. Thomson, R. C., P. Q. Spinks, and H. B. Shaffer. 2021. A global phylogeny of turtles reveals a burst of climate-associated diversification on continental margins. *Proceedings of the National Academy of Sciences, USA*, 118: 1-10 (No. 7 e2012215118)
185. Neal, K. M., R. N. Fisher, M. J. Mitrovich, and H. B. Shaffer. 2020. Conservation genomics of the threatened western spadefoot, *Spea hammondi*, in urbanized southern California. *Journal of Heredity* 111:6130627 <https://doi.org/10.1093/jhered/esaa049> (Note: Selected as Editor's Choice for the issue of release.)
184. Scott, P. A., L. J. Allison, K. J. Field, R. C. Averill-Murray, and H. B. Shaffer. 2020. Individual heterozygosity predicts translocation success in threatened desert tortoises. *Science* 370: 1086-1089.
183. Stanford, C. B. (with 51 total coauthors). 2020. Turtles and tortoises are in trouble. *Current Biology* 30: R721-735.

182. Nicholson, E. G., S. Manzo, Z. Devereux, T. P. Morgan, R. N. Fisher, C. Brown, R. Dagit, P. A. Scott, and H. B. Shaffer. 2020. Historical museum collections and contemporary population studies implicate roads and introduced predatory bullfrogs in the decline of western pond turtles. PeerJ8:e9248 DOI 10.7717/peerj.9248 (pages 1-23)
181. Bucciarelli, G. M., M. A. Clark, K. S. Delaney, S. P. D. Riley, H. B. Shaffer, R. N. Fisher, R. L. Honeycutt and L. B. Kats. 2020. Amphibian responses in the aftermath of extreme climate events. Scientific Reports 10:3409. doi.org/10.1038/s41598-020-60122-2
180. McCartney-Melstad, E., M. Gidiş, and H. B. Shaffer. 2019. An empirical pipeline for choosing the optimal clustering threshold in RADseq studies. Molecular Ecology Resources 19:1195-1204. DOI: 10.1111/1755-0998.13029
179. Lambert, M. R., J. M. McKenzie, R. M. Screen, A. G. Clause, B. J. Johnson, G. G. Mount, H. B. Shaffer, and G. B. Pauly. 2019. Experimental removal of introduced slider turtles offers new insight into competition with a native, threatened turtle. PeerJ 7:e7444, <http://doi.org/10.7717/peerj.7444>
178. Gallego-Garcia, N., G. Forero-Medina, M. Vargas-Ramirez, S. Caballero, and H. B. Shaffer. 2019. Landscape genomic signatures indicate reduced gene flow and forest-associated adaptive divergence in an endangered neotropical turtle. Molecular Ecology 28:2757–2771.
177. Wielstra, B., E. McCartney-Melstad, J. W. Arntzen, R. K. Butlin and H. B. Shaffer. 2019. Phylogenomics of the adaptive radiation of *Triturus* newts supports gradual ecological niche expansion towards an incrementally aquatic lifestyle. Molecular Phylogenetics and Evolution 133:120-127. (also preprint posted at <http://biorxiv.org/cgi/content/short/463752v1>)
176. Bucciarelli, G. M., D. Suh, A. D. Lamb, D. Roberts, D. Sharpton, H. B. Shaffer, R. N. Fisher and L. B. Kats. 2019. Assessing effects of non-native crayfish on mosquito survival. Conservation Biology 33:122-131.
175. Rhodin, A. G. J. and 55 co-authors. 2018. Global Conservation Status of Turtles and Tortoises (Order Testudines). Chelonian Conservation and Biology 17:135-161.
174. Shaffer, H. B. 2018. Urban biodiversity arks. Nature Sustainability 1: 725-727.
173. McCartney-Melstad, E., J. K. Vu, and H. B. Shaffer. 2018. Genomic data recover previously undetectable fragmentation effects in an endangered amphibian. Molecular Ecology 27:4430-4443. (also at <https://doi.org/10.1101/306340>)
172. Schlesinger, M. D., J. A. Feinberg, N. H. Nazdrowicz, J. D. Kleopfer, J. C. Beane, J. F. Bunnell, J. Burger, E. Corey, K. Gipe, J. W. Jaycox, E. Kiviat, J. Kubel, D. P. Quinn, C. Raithel, P. A. Scott, S. M. Wenner, E. L. White, B. Zarate, and H. B. Shaffer. 2018. Follow-up ecological studies for cryptic species discoveries: Decrypting the leopard frogs of the eastern U.S. PLoS ONE 13(11): e0205805.
171. Georges, A., B. Gruber, G. B. Pauly, D. White, M. J. Young, A. Kilian, X. Zhang, H. B.

- Shaffer, and P.J. Unmack. 2018. Genomewide SNP markers breathe new life into phylogeography and species delimitation for the problematic short-necked turtles (Chelidae: *Emydura*) of eastern Australia. *Molecular Ecology* 27:5195-5213.
170. Wielstra, B., J.W. Arntzen, R.K. Butlin, J.J.C.W. van Delft, K. Vrieling & H.B. Shaffer. 2018. Molecular toolkit and guidelines for the management of genetic pollution. Reptile, Amphibian and Fish Conservation Netherlands (RAVON), pages 1-25.
169. McCartney-Melstad, E., M. Gidiş, and H.B. Shaffer. 2018. Population genomic data reveal extreme geographic subdivision and novel conservation actions for the declining foothill yellow-legged frog. *Heredity* 121:112-125. Also available as an online preprint at <http://www.biorxiv.org/content/early/2017/09/10/186635>
168. Neal, K. M., B. B. Johnson, and H. B. Shaffer. 2018. Genetic structure and environmental niche modeling confirm two evolutionary and conservation units within the western spadefoot (*Spea hammondi*). *Conservation Genetics* 19:937-946.
167. Peralta-García, A., A. J. Adams, C. J. Briggs, P. Galina-Tessaro, J. H. Valdez-Villavicencio, B. D. Hollingsworth, H. B. Shaffer, and R. N. Fisher. 2018. Occurrence of *Batrachochytrium dendrobatidis* in anurans of the Mediterranean region of Baja California, México. *Diseases of Aquatic Organisms* 127:193-200.
166. Thomson, R.C., P. Q. Spinks, and H. B. Shaffer. 2018. Molecular phylogeny and divergence of the map turtles (Emydidae: *Graptemys*). *Molecular Phylogenetics and Evolution* 121: 61-70.
165. Bucciarelli, G. M., Shaffer, H. B., Green, D. B., and L. B. Kats. 2017. An amphibian chemical defense phenotype is inducible across life history stages. *Nature Scientific Reports* 7:8185.
164. Shaffer, H.B., McCartney-Melstad, E., Near, T., Mount, G. G., and P.Q. Spinks. 2017. Phylogenomic analyses of 539 highly informative loci dates a fully resolved time tree for the major clades of living turtles (Testudines). *Molecular Phylogenetics and Evolution*, 115: 7-15.
163. Turtle Taxonomy Working Group [A.G.J. Rhodin, J.B. Iverson, R. Bour, U. Fritz, A. Georges, H.B. Shaffer, and P.P. van Dijk]. 2017. Turtles of the World: Annotated Checklist and Atlas of Taxonomy, Synonymy, Distribution, and Conservation Status (8th Ed.). In: Rhodin, A.G.J., Iverson, J.B., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Pritchard, P.C.H., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. *Chelonian Research Monographs* 7:1–292. doi: 10.3854/crm.7.checklist.atlas.v8.2017.
162. Wang, I.J. and H.B. Shaffer. 2017. Population genetic and field-ecological analyses return similar estimates of dispersal over space and time in an endangered amphibian. *Evolutionary Applications* 10:630-639.
161. Hime, P. M., Hotaling, S., Grewelle, R. E., O’Neill, E. M., Voss, S. R., Shaffer, H. B., and D. W. Weisrock. 2016. The influence of locus number and information content on species delimitation: an empirical test case in an endangered Mexican salamander. *Molecular Ecology*

25:5959-5974.

160. Shaffer, H. B. 2016. Evolution and Conservation pp. 220-237 in *How Evolution Shapes our Lives*, Essays on Biology and Society, J. B. Losos and R. E. Lenski, editors. Princeton University Press.
159. Wielstra, B., Burke T., Butlin, R.K., Schaap, O., Shaffer, H. B., Vrieling, K., and J. W. Arntzen. 2016. Efficient screening for 'genetic pollution' in an anthropogenic crested newt hybrid zone. *Conservation Genetics Resources* 8:553-560.
158. Spinks, P.Q., R.C. Thomson, E. McCartney-Melstad, and H. B. Shaffer. 2016. Phylogeny and temporal diversification of the New World pond turtles (Emydidae). *Molecular Phylogenetics and Evolution* 103:85-97.
157. McCartney-Melstad, E., G. G. Mount, and H. B. Shaffer. 2016. Exon capture optimization in amphibians with large genomes. *Molecular Ecology Resources* 16:1084-1094.
156. Wayne, R. K. and H. B. Shaffer. 2016. Hybridization and endangered species protection in the molecular era. *Molecular Ecology* 25:280-289. **Note: Wayne/Shaffer co-first authors**
155. Bucciarelli, G. M., D. B. Green, H. B. Shaffer, and L. B. Kats. 2016. Individual fluctuations in toxin levels affect breeding site fidelity in a chemically defended amphibian. *Proceedings of the Royal Society B* 283:1-9.
154. Searcy, C. A., and H. B. Shaffer. 2016. Do ecological niche models accurately identify climatic determinants of species ranges? *American Naturalist* 187:423-435.
153. Wright, A. N., M. W. Schwartz, R. J. Hijmans, and H. Bradley Shaffer. 2016. Advances in climate models from CMIP3 to CMIP5 do not change predictions of future habitat suitability for California reptiles and amphibians. *Climatic Change* 134:579-591.
152. Searcy, C. A., H. B. Rollins and H. B. Shaffer. 2016. Ecological equivalency as a tool for endangered species management. *Ecological Applications* 26:94-103.
151. Turtle Extinctions Working Group [Rhodin, A.G.J., Thomson, S., Georgalis, G., Karl, H.-V., Danilov, I.G., Takahashi, A., De La Fuente, M.S., Bourque, J.R., Delfino M., Bour, R., Iverson, J.B, Shaffer, H. B., and Van Dijk, P.P.]. 2015. Turtles and tortoises of the world during the rise and global spread of humanity: first checklist and review of extinct Pleistocene and Holocene chelonians. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saurmure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs 5(8):000e.1-66.
150. McCartney-Melstad, E. and H. B. Shaffer. 2015. Amphibian molecular ecology and how it has informed conservation. *Molecular Ecology* 24:5084-5109.

149. Spinks, P. Q., A. Georges and H. B. Shaffer. 2015. Phylogenetic uncertainty and taxonomic re-revisions: an example from the Australian short-necked turtles (Testudines: Chelidae) *Copeia* 103:536-540.
148. Searcy, C. A., H. Snass, and H. B. Shaffer. 2015. Determinants of size at metamorphosis in an endangered amphibian and their projected effects on population stability. *Oikos* 124:724-731. doi: 10.1111/oik.01775
147. Rhodin, A. G. J. (and 69 coauthors). 2015. Comment on *Spracklandus* Hoser, 2009 (Reptilia, Serpentes, ELAPIDAE): request for confirmation of the availability of the generic name and for the nomenclatural validation of the journal in which it was published. *Bulletin of Zoological Nomenclature* 72:65-78.
146. Wright, A. N., R. J. Hijmans, M. W. Schwartz, and H. B. Shaffer. 2015. Multiple sources of uncertainty affect metrics for ranking conservation risk under climate change. *Diversity and Distributions* 21:111-122.
145. Shaffer, H. B., M. Gidiş E. McCartney-Melstad, K. M. Neal, H. M. Oyamaguchi, M. Tellez, and E. M. Toffelmier. 2015. Conservation genetics and genomics of amphibians and reptiles. *Annual Reviews of Animal Biosciences* 3:113-138.
144. Feinberg, J. A., C. E. Newman, G. J. Watkins-Colwell, M. D. Schlesinger, B. Zarate, B. R. Curry, H. B. Shaffer, and J. Burger. 2014. Cryptic diversity in metropolis: Confirmation of a new leopard frog species (Anura: Ranidae) from New York City and surrounding Atlantic Coast regions. *PLoS ONE* 9(10): e108213. doi 10.1371/journal.pone.0108213. *Two associated BBC interviews on 30 October, aired 31 October*
143. Searcy, C. A. and H. B. Shaffer. 2014. Field validation supports novel niche modeling strategies in a cryptic endangered amphibian. *Ecography* 37:983-992.
142. Shaffer, H. B. 2014. Field of genes. *BOOM: The journal of California* 4:133-138.
141. Spinks, P. Q., R. C. Thomson, M. Gidiş, and H. B. Shaffer. 2014. Multilocus phylogeny of the New-World mud turtles (Kinosternidae) supports the traditional classification of the group. *Molecular Phylogenetics and Evolution* 76:254-260.
140. Spinks, P. Q., R. C. Thomson, and H. B. Shaffer. 2014. The advantages of going large: genome-wide SNPs clarify the complex population history and systematics of the threatened western pond turtle. *Molecular Ecology* 23:2228-2241.
139. Turtle Taxonomy Working Group [P. P. van Dijk, J. B. Iverson, A. G. J. Rhodin, H. B. Shaffer, and R. Bour]. 2014. Turtles of the world, 7th edition: annotated checklist of taxonomy, synonymy, distribution with maps, and conservation status. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. *Chelonian Research Monographs* 5(7):000.329–479,doi:10.3854/crm.5.000.checklist.v7.2014.

138. Warren, D. L., A. N. Wright, S. N. Seifert, and H. B. Shaffer. 2014. Incorporating model complexity and spatial sampling bias into ecological niche models of climate change risks faced by 90 California vertebrate species of concern. *Diversity and Distributions* 20:334-343.
137. Searcy, C. A., L. N. Gray, P. C. Trenham and H. B. Shaffer. 2014. Delayed life history effects, multilevel selection, and evolutionary trade-offs in the California tiger salamander. *Ecology* 95:68-77.
136. Johnson, J. R., M. E. Ryan, S. J. Micheletti, and H. B. Shaffer. 2013. Short hydroperiod decreases fitness of nonnative salamanders in California. *Animal Conservation* 16:556-565.
135. Shaffer, H. B. and M. D. Purugganan. 2013. Genomics in ecology, evolution and systematics. *Annual Review of Ecology, Evolution and Systematics* 44:1-4.
134. Shaffer, H. B. 2013. Evolution and Conservation pp. 766-773 in *The Princeton Guide to Evolution*, J. Losos, Editor In Chief. Princeton University Press.
133. Polich, R. L, C. A. Searcy and H. B. Shaffer. 2013. Effects of tail-clipping on survivorship and growth of larval salamanders. *J. Wildlife Management* 77:1420-1425.
132. Lambert, M. R., S. N. Nielsen, A. N. Wright, R. C. Thomson, and H. B. Shaffer. 2013. Habitat features determine the basking distribution of introduced red-eared sliders and native western pond turtles. *Chelonian Conservation and Biology* 12:192-199.
131. Spinks, P. Q., R. C. Thomson, G. B. Pauly, C. E. Newman, G. Mount and H. B. Shaffer. 2013. Misleading phylogenetic inferences based on single-exemplar sampling in the turtle genus *Pseudemys*. *Molecular Phylogenetics and Evolution* 68:269-281.
130. Shaffer, H. B. (and 58 coauthors). 2013. The western painted turtle genome, a model for the evolution of extreme physiological adaptations in a slowly evolving lineage. *Genome Biology* 2013, 14:R28 doi:10.1186/gb-2013-14-3-r28.
129. Ryan, M. E., J. R. Johnson, B. M. Fitzpatrick, L. J. Lowenstine, A. M. Picco and H. B. Shaffer. 2013. Lethal effects of water quality on threatened California salamanders but not on co-occurring hybrid salamanders. *Conservation Biology* 27:95-102.
128. Shaffer, H. B. 2013. Neoteny. In Maloy, S. and Hughes, K. (eds.) *Brenner's Encyclopedia of Genetics*, vol. 5, pp. 26-27. Elsevier: New York
127. Searcy, C. A., Gabbai-Saldate, E., and H. B. Shaffer. 2013. Microhabitat use and migration distance of an endangered grassland amphibian. *Biological Conservation* 158:80-87.

126. O'Neil, E. M., R. Schwartz, C. T. Bullock, J. S. Williams, H. B. Shaffer, X. Aguilar-Miguel, G. Parra-Olea, and D. W. Weisrock. 2012. Parallel tagged amplicon sequencing reveals major lineages and phylogenetic structure in the North American tiger salamander (*Ambystoma tigrinum*) species complex. *Molecular Ecology* 22:111-129.
125. Turtle Taxonomy Working Group [P. P. van Dijk, J. B. Iverson, H. B. Shaffer, R. Bour and A. G. J. Rhodin]. 2012. Turtles of the world, 2012 update: annotated checklist of taxonomy, synonymy, distribution, and conservation status. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs No. 5, pp. 000.243–000.328, doi:10.3854/crm.5.000.checklist.v5.2012, www.iucn-tftsg.org/cbftt/.
124. Voss, S. R., K. D. Kump, J. A. Walker, H. B. Shaffer, and G. J. Voss. 2012. Thyroid hormone responsive QTL and evolution of paedomorphic salamanders. *Heredity* 109:293-298.
123. Spinks, P. Q., R. C. Thomson, Y. Zhang, J. Che, Y. Wu, and H. B. Shaffer. 2012. Species boundaries and phylogenetic relationships in the critically endangered Asian box turtle genus *Cuora*. *Molecular Phylogenetics and Evolution* 63:656-667 .
122. Spinks, P.Q., R. C. Thomson, B. Hughes, B. Moxley, R. Brown, A. Deismos, and H. B. Shaffer. 2012. Cryptic variation and the tragedy of unrecognized taxa: the case of international trade in the spiny turtle *Heosemys spinosa* (Testudines: Geoemydidae). *Zoological Journal of the Linnean Society* 164:811-824.
121. Newman, C. E., J. A. Feinberg, L. J. Rissler, J. Burger, and H. B. Shaffer. 2012. A new species of leopard frog (Anura: Ranidae) from the urban northeastern US. *Molecular Phylogenetics and Evolution* 63:445-455.
120. Pauly, G. B., S. H. Bennett, J. G. Palis and H. B. Shaffer. 2012. Conservation and genetics of the frosted flatwoods salamander (*Ambystoma cingulatum*) on the Atlantic Coastal Plain. *Conservation Genetics* 13:1-7.
119. Searcy, C. A. and H. B. Shaffer. 2011. Determining the migration distance of a vagile vernal pool specialist: How much land is required for conservation of California tiger salamanders? Pages 73-87 in D. G. Alexander and R. A. Schlising (Editors), *Research and recovery in vernal pool landscapes. Studies from the Herbarium, Number 16*. California State University, Chico, CA.
118. Turtle Taxonomy Working Group [P. P. van Dijk, J. B. Iverson, H. B. Shaffer, R. Bour and A. G. J. Rhodin]. 2011. Turtles of the world, 2011 update: annotated checklist of taxonomy, synonymy, distribution, and conservation status. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs No. 5, pp. 000.165–000.242, doi:10.3854/crm.5.000.checklist.v4.2011, <http://www.iucn-tftsg.org/cbftt/>.

117. Mautz, W. J. and H. B. Shaffer. 2011. Colonization of Hawaii Island by the Brown Anole (*Anolis sagrei*). *Herpetological Review* 42:508-509.
116. Caro, T., O. Evans, E. Fitzherbert, T. A. Gardner, K. Howell, R. Drewes and H. B. Shaffer. 2011. Reptiles of Katavi National Park, western Tanzania, are from different biomes. *African Journal of Ecology* 49:377-382.
115. Wang, I. J., J. R. Johnson, B. B. Johnson and H. B. Shaffer. 2011. Effective population size is strongly correlated with breeding pond size in the endangered California tiger salamander, *Ambystoma californiense*. *Conservation Genetics* 12:911-920.
114. Georges, A, R-J Spencer, M. Welsh, H. B. Shaffer, R. Walsh and X. Zhang. 2011. Application of the precautionary principle to taxa of uncertain status - the case of the Bellinger River Turtle. *Endangered Species Research* 14:127-134.
113. Gidis, M., P. Q. Spinks, E. Çevik, Y. Kaska, and H. B. Shaffer. 2011. Shallow genetic divergence indicates a Congo-Nile riverine connection for the softshell turtle *Trionyx triunguis*. *Conservation Genetics* 12:589-594.
112. Lind, A. J., P. Q. Spinks, G. M. Fellers and H. B. Shaffer. 2011. Rangewide phylogeography and landscape genetics of the western U. S. endemic frog *Rana boylei* (Ranidae): implications for the conservation of frogs and rivers. *Conservation Genetics* 12:269-284.
111. Johnson, J. R., R. C. Thomson, S. J. Micheletti and H. B. Shaffer. 2011. The origin of tiger salamander (*Ambystoma tigrinum*) populations in California, Oregon and Nevada: introductions or relicts? *Conservation Genetics* 12:255-370.
110. Spinks, P. Q., R. C. Thomson, A. J. Barley, C. E. Newman and H. B. Shaffer. 2010. Testing avian, squamate, and mammalian nuclear markers for cross amplification in turtles. *Conservation Genetics Resources* 2: 127-129.
109. Caro, T. M. and H. B. Shaffer. 2010. Chelonian antipredator strategies: preliminary and comparative data from Tanzanian *Pelusios*. *Chelonian Conservation and Biology* 9:302-305.
108. Thomson, R. C., P. Q. Spinks and H. B. Shaffer. 2010. Distribution and abundance of invasive red-eared sliders (*Trachemys scripta elegans*) in California's Sacramento River basin and possible impacts on native western pond turtles (*Emys marmorata*). *Chelonian Conservation and Biology* 9:297-302.
107. Turtle Taxonomy Working Group [Rhodin, A.G.J., P. P. van Dijk, J. B. Iverson, and H. B. Shaffer]. 2010. Turtles of the world, 2010 update: annotated checklist of taxonomy, synonymy, distribution, and conservation status. In: Rhodin, A.G.J., Pritchard, P.C.H., van Dijk, P.P., Saumure, R.A., Buhlmann, K.A., Iverson, J.B., and Mittermeier, R.A. (Eds.). *Conservation Biology of Freshwater Turtles and Tortoises: A Compilation Project of the IUCN/SSC Tortoise and Freshwater Turtle Specialist Group*. Chelonian Research Monographs No. 5, pp. 85–164

106. Johnson, J. R., B. B. Johnson and H. B. Shaffer. 2010. Genotype and temperature affect locomotor performance in a tiger salamander hybrid swarm. *Functional Ecology* 24:1073-1080.
105. Savage, W., A. Fremier, and H. B. Shaffer. 2010. Landscape genetics of alpine Sierra Nevada salamanders reveal extreme population subdivision in space and time. *Molecular Ecology* 19:3301-3314.
104. Johnson, J. R., B. M. Fitzpatrick and H. Bradley Shaffer. 2010. Retention of low-fitness genotypes over six decades of admixture between native and introduced tiger salamanders. *BMC Evolutionary Biology* 2010, 10:147.
103. Barley, A. J., P. Q. Spinks, R. C. Thomson and H. Bradley Shaffer. 2010. Fourteen nuclear genes provide phylogenetic resolution for difficult nodes in the turtle tree of life. *Molecular Phylogenetics and Evolution* 55:1189-1194.
102. Fitzpatrick, B. M., J. R. Johnson, D. K. Kump, J. J. Smith, S. R. Voss and H. B. Shaffer. 2010. Rapid spread of invasive genes into a threatened native species. *Proceedings of the National Academy of Sciences, USA*, 107:3606-3610.
101. Thomson, R. C. and H. B. Shaffer. 2010. Rapid progress on the vertebrate tree of life. *BMC Biology* 2010, 8:19.
100. Spinks, P. Q., R. C. Thomson, and H. B. Shaffer. 2010. Nuclear gene phylogeography reveals the historical legacy of an ancient inland sea on lineages of the western pond turtle, *Emys marmorata* in California. *Molecular Ecology* 19:542-556.
99. Thomson, R. C. and H. B. Shaffer. 2010. Sparse supermatrices for phylogenetic inference: Taxonomy, alignment, rogue taxa, and the phylogeny of living turtles. *Systematic Biology* 59:42-58 (**Cover Article**).
98. Genome 10K Community of Scientists (66 coauthors). 2009. Genome 10K: A proposal to obtain whole-genome sequence for 10,000 vertebrate species. *Journal of Heredity* 100:659-674.
97. Fitzpatrick, B. M., J. R. Johnson, D. K. Kump, H. B. Shaffer, J. J. Smith and S. R. Voss. 2009. Rapid fixation of non-native alleles revealed by genome-wide SNP analysis of hybrid tiger salamanders. *BMC Evolutionary Biology* 9:176.
96. Spinks, P. Q. and H. B. Shaffer. 2009. Conflicting mitochondrial and nuclear phylogenies for the widely disjunct *Emys* (Testudines: Emydidae) Species Complex, and what they tell us about biogeography and hybridization. *Systematic Biology* 58:1-20.
95. Spinks, P. Q., R. C. Thomson and H. B. Shaffer. 2009. A reassessment of *Cuora cyclornata* Blanck, McCord, and Le, 2006 (Testudines: Geoemydidae) and a plea for taxonomic stability. *Zootaxa* 2018:58-68.

94. Spinks, P. Q., R. C. Thomson, G. A. Lovely and H. B. Shaffer. 2009. Assessing what is needed to resolve a molecular phylogeny: simulations and empirical data from emydid turtles. *BMC Evolutionary Biology* 2009 9:56 (pages 1-17).
93. Shaffer, H. B. Turtles (Testudines). 2009. In *The Timetree of Life*. S. B. Hedges and S. Kumar, Eds. (Oxford University Press, New York), pp. 398-401.
92. Wang, I. J., W. K. Savage and H. B. Shaffer. 2009. Landscape genetics and least cost path analysis reveal unexpected dispersal routes in the California tiger salamander (*Ambystoma californiense*). *Molecular Ecology* 18:1365-1374.
91. Shaffer, H. B. 2009. **Modern Reptiles**. in M. Ruse and J Travis, eds., *Evolution: The first four billion years*. Pps 739-742. Harvard University Press, Cambridge.
90. Wang, I. J. and H. B. Shaffer. 2008. Coloration is a highly labile trait in an aposematic species: A phylogenetic analysis of color evolution in the strikingly polymorphic strawberry poison-dart frog. *Evolution* 62:2742-2759.
89. Thomson, R. C., A. M. Shedlock, S. V. Edwards, and H. B. Shaffer. 2008. Developing markers for multilocus phylogenetics in non-model organisms: A test case with turtles. *Molecular Phylogenetics and Evolution* 49:514-525.
88. Searcy, C. A. and H. B. Shaffer. 2008. Calculating biologically accurate mitigation credits: insights from the California tiger salamander. *Conservation Biology* 22:997-1005.
87. Gamble, T., P. B. Berendzen, H. B. Shaffer, D. E. Starkey, and A. M. Simons. 2008. Species limits and phylogeography of North American cricket frogs (*Acris*: Hylidae). *Molecular Phylogenetics and Evolution* 48:112-125.
86. Ives, I., P. Q. Spinks, and H. B. Shaffer. 2008. Morphological and Genetic Variation in the endangered Sulawesi tortoise *Indotestudo forstenii*: Evidence of Distinct Lineages? *Conservation Genetics* 9:709-713.
85. Shaffer, H.B., D.E. Starkey, and M.K. Fujita. 2008. Molecular insights into the systematics of the snapping turtles (Chelydridae). In R.J. Brooks, A.C. Steyermark, and M.S. Finkler, eds., *Biology of the Snapping Turtle (Chelydra serpentina)*. pp. 44-49. Johns Hopkins Univ. Press, Baltimore.
84. Near, T. J., P. A. Meylan, and H. B. Shaffer. 2008. Caveats on the use of fossil calibrations for molecular dating: A reply to Parham and Irmis. *American Naturalist* 171:137-140.
83. Shaffer, H.B., FitzSimmons, N.N., Georges, A., and Rhodin, A.G.J. (Eds.) 2007. *Defining Turtle Diversity: Proceedings of a Workshop on Genetics, Ethics, and Taxonomy of Freshwater Turtles and Tortoises*. Chelonian Research Monographs No. 4, 200 pp.
82. Turtle Taxonomy Working Group [Bickham, J.W., Parham, J.W., Philippen, H.D., Rhodin, A.G.J., Shaffer, H.B., Spinks, P.Q., and van Dijk, P.P.; **H.B. Shaffer, lead author**]. 2007.

Turtle taxonomy: methodology, recommendations, and guidelines. In: Shaffer, H.B., FitzSimmons, N.N., Georges, A., and Rhodin, A.G.J. (Eds.) *Defining Turtle Diversity: Proceedings of a Workshop on Genetics, Ethics, and Taxonomy of Freshwater Turtles and Tortoises*. Chelonian Research Monographs No. 4, pp. 73-84.

81. Turtle Taxonomy Working Group [Bickham, J.W., Iverson, J.B., Parham, J.W., Philippen, H.D., Rhodin, A.G.J., Shaffer, H.B., Spinks, P.Q., and van Dijk, P.P.; **J. W. Parham, lead author**]. 2007. An annotated list of modern turtle terminal taxa, with comments on areas of taxonomic instability and recent change. In: Shaffer, H.B., FitzSimmons, N.N., Georges, A., and Rhodin, A.G.J. (Eds.) *Defining Turtle Diversity: Proceedings of a Workshop on Genetics, Ethics, and Taxonomy of Freshwater Turtles and Tortoises*. Chelonian Research Monographs No. 4, pp. 173-199.
80. Shaffer, H.B. and R.C. Thomson. 2007. Delimiting species in recent radiations. *Systematic Biology* 56:896-906.
79. Fitzpatrick, B. M. and H.B. Shaffer. 2007. Hybrid vigor between native and introduced salamanders raises new challenges for conservation. *Proceedings of the National Academy of Sciences, USA* 104:15793-15798.
78. Spinks, P.Q. and H. B. Shaffer. 2007. Conservation phylogenetics of the Asian box turtles (Geoemydidae, *Cuora*): mitochondrial introgression, numts, and inferences from multiple nuclear loci. *Conservation Genetics* 8:641-657.
77. Fitzpatrick, B.M. and H.B. Shaffer. 2007. Introduction history and habitat variation explain the landscape genetics of hybrid tiger salamanders. *Ecological Applications* 17(2):598-608.
76. Davidson, C., Benard, M. F., Shaffer, H. B., Parker, J. M., O'Leary, C., Conlon, J. M., and Rollins-Smith, L. A. 2007. Effects of chytrid and carbaryl exposure on survival, growth and skin peptide defenses in foothill yellow-legged frogs. *Environmental Science and Technology* 41:1771-1776.
75. Pauly, G. B., O. Piskurek, and H. B. Shaffer. 2007. Phylogeographic concordance in the southeastern United States: the flatwoods salamander, *Ambystoma cingulatum*, as a test case. *Molecular Ecology* 16:415-429.
74. Weisrock, D. W., H. B. Shaffer, B. L. Storz, S. R. Storz, and S. R. Voss. 2006. Multiple nuclear gene sequences identify phylogenetic species boundaries in the rapidly radiating clade of Mexican ambystomatid salamanders. *Molecular Ecology* 15(9):2489-2503.
73. Krenz, J. G., G.J.P. Naylor, H. B. Shaffer and F. J. Janzen. 2005. Molecular phylogenetics and evolution of turtles. *Molecular Phylogenetics and Evolution* 37:178-191.
72. Trenham, P.C. and H. B. Shaffer. 2005. Amphibian upland habitat use and its consequences for population viability. *Ecological Applications* 15:1158-1168.

71. Spinks, P. Q. and H. B. Shaffer. 2005. Range-wide molecular analysis of the western pond turtle (*Emys marmorata*): cryptic variation, isolation by distance, and their conservation implications. *Molecular Ecology* 14:2047-2064.
70. Shaffer, H. B. 2005. *Ambystoma gracile* (Baird, 1859) Northwestern salamander. Pp. 609-611 *In* Lannoo, M.J. (Ed.), *Amphibian declines. The conservation status of United States species*. University of California Press, Berkeley, California.
69. Shaffer, H. B. and P. C. Trenham. 2005. *Ambystoma californiense* (Gray, 1853) California tiger salamander. Pp. 605-608 *In* Lannoo, M.J. (Ed.), *Amphibian declines. The conservation status of United States species*. University of California Press, Berkeley, California.
68. Near, T. J., P. A. Meylan and H. B. Shaffer. 2005. Assessing concordance of fossil calibration points in molecular clock studies: an example using turtles. *American Naturalist* 165:137-146.
67. Engstrom, T.N., H. B. Shaffer and W. P. McCord. 2004. Multiple data sets, high homoplasy, and the phylogeny of softshell turtles (*Testudines: Trionychidae*). *Systematic Biology* 53:693-710.
66. Shaffer, H. B., G. B. Pauly, J. C. Oliver and P. C. Trenham. 2004. The molecular phylogenetics of endangerment: cryptic variation and historical phylogeography of the California tiger salamander, *Ambystoma californiense*. *Molecular Ecology* 13:3033-3049.
65. Shaffer, H. B., G. M. Fellers, S. R. Voss, J. C. Oliver and G. B. Pauly. 2004. Species boundaries, phylogeography, and conservation genetics of the red-legged frog (*Rana aurora/draytonii*) complex. *Molecular Ecology* 13:2667-2677.
64. Fitzpatrick, B. J. and H. B. Shaffer. 2004. Environment-dependent admixture dynamics in a tiger salamander hybrid zone. *Evolution* 58(6):1282-1293.
63. Spinks, P. Q., H. B. Shaffer, J. B. Iverson and W. P. McCord. 2004. Phylogenetic hypotheses for the turtle family Geoemydidae. *Molecular Phylogenetics and Evolution* 32:164-182.
62. Fujita, M.K., T.N. Engstrom, D.E. Starkey and H.B. Shaffer. 2004. Turtle phylogeny: Insights from a novel nuclear intron. *Molecular Phylogenetics and Evolution* 31:1031-1040.
61. Riley, S.P.D., H.B. Shaffer, S.R. Voss, and B.M. Fitzpatrick. 2003. Hybridization between a rare, native tiger salamander (*Ambystoma californiense*) and its introduced congener. *Ecological Applications* 13(5):1263-1275.
60. Shaffer, H. B. 2003. Mole salamanders (Ambystomatidae). Pp. 355-361 *In* Hutchins, M., Duellman, W. E., and Schlager, N. (Editors) *Grzimek's Animal Life Encyclopedia*. Second edition. Volume 6, *Amphibians*, Gale Group, Farmington Hills, MI.
59. Spinks, P.Q., G.B. Pauly, J.J. Crayon and H.B. Shaffer. 2003. Survival of the western pond turtle (*Emys marmorata*) in an urban environment. *Biological Conservation* 113(2):257-267.

58. Voss, S. R., K. Prudic, J. Oliver, and H.B. Shaffer. 2003. Candidate gene analysis of metamorphic timing in ambystomatid salamanders. *Molecular Ecology* 12:1217-1223.
57. Starkey, D.E., H.B. Shaffer, R. R. Burke, M.R.J. Forstner, J. B. Iverson, F. J. Janzen, A. G.J. Rhodin, and G. R. Ultsch. 2003. Molecular Systematics, Phylogeography, and the Effects of Pleistocene Glaciation in the Painted Turtle (*Chrysemys picta*) Complex. *Evolution* 57(1):119-128.
56. Davidson, C., H. B. Shaffer and M. R. Jennings. 2002. Spatial tests of the pesticide drift, habitat destruction, UV-B and climate change hypotheses for California amphibian declines. *Conservation Biology* 16(6):1588-1601.
55. Sanderson, M.J. and H.B. Shaffer. 2002. Troubleshooting molecular phylogenetic analyses. *Annual Reviews of Ecology and Systematics* 33:49-72
54. Engstrom, T.N., H.B Shaffer, and W.P. McCord. 2002. Phylogenetic diversity of endangered and critically endangered southeast Asian softshell turtles (Trionychidae: *Chitra*). *Biological Conservation* 104:173-179.
53. Iverson, J. B., P. Q. Spinks, H. B. Shaffer, W. P. McCord and I. Das. 2001. Phylogenetic relationships among the Asian tortoises of the genus *Indotestudo* (Reptilia: Testudines: Testudinidae). *Hamadryad* 26:271-274.
52. Trenham, P.C., W. D. Koenig and H. B. Shaffer. 2001. Spatially autocorrelated demography and interpond dispersal in the salamander *Ambystoma californiense*. *Ecology* 82:3519-3530.
51. Davidson, C., H. B. Shaffer and M. R. Jennings. 2001. Declines of the California red-legged frog: climate, UV-B, habitat, and pesticides hypotheses. *Ecological Applications* 11:464-479.
50. Shaffer, H.B. 2001. Neoteny. Pps. 1304-1305 *In: Encyclopedia of Genetics*. London: Academic Press.
49. Voss, S. R. and H. B. Shaffer. 2000. Evolutionary Genetics of Metamorphic Failure Using Wild-Caught vs. Laboratory Axolotls (*Ambystoma mexicanum*). *Molecular Ecology* 9:1401-1407.
48. Voss, S. R., H. B. Shaffer, J. Taylor, R. Safi, and V. Laudet. 2000. Candidate gene analysis of thyroid hormone receptors in metamorphosing vs. non-metamorphosing salamanders. *Heredity* 85:107-114.
47. Trenham, P. C., H. B. Shaffer, W. D. Koenig and M. R. Stromberg. 2000. Life history and demographic variation in the California Tiger Salamander (*Ambystoma californiense*). *Copeia* 2000:365-377.

46. Shaffer, H. B., G. M. Fellers, A. Magee and S. R. Voss. 2000. The genetics of amphibian declines: population substructure and molecular differentiation in the Yosemite Toad, *Bufo canorus* (Anura, Bufonidae) based on single-strand conformation polymorphism analysis(SSCP) and mitochondrial DNA sequence data. *Molecular Ecology* 9:245-257.
45. McCord, W. P., J. B. Iverson, P. Q. Spinks, and H. B. Shaffer. 2000. A new genus of geoemydid turtle from Asia. *Hamadryad* 25:20-24.
44. Trenham, P. C., H. B. Shaffer and P. B. Moyle. 1998. Biochemical identification and assessment of population structure of morphologically similar native and invading smelt species (*Hypomesus*) in the Sacramento-San Joaquin Estuary, California. *Transactions of the American Fisheries Society* 127:417-424.
43. Shaffer, H. B., R. N. Fisher and C. Davidson. 1998. The role of natural history collections in documenting species declines. *Trends in Ecology and Evolution* 13:27-30.
42. McKnight, M. L. and H. B. Shaffer. 1997. Large, rapidly evolving intergenic spacers in the mitochondrial DNA of the salamander family Ambystomatidae (Amphibia: Caudata). *Molecular Biology and Evolution*, 14:1167-1176.
41. Voss, S. R. and H. B. Shaffer. 1997. Adaptive evolution via a major gene effect: Paedomorphosis in the Mexican axolotl. *Proceedings of the National Academy of Sciences, USA*. 94:14185-14189.
40. Shaffer, H. B. P. Meylan and M. L. McKnight. 1997. Tests of turtle phylogeny: molecular, morphological and paleontological approaches. *Systematic Biology* 46:235-268.
39. Irschick, D. J. and H. B. Shaffer. 1997. The polytypic species revisited: Morphological differentiation among tiger salamanders (*Ambystoma tigrinum*) (Amphibia: Caudata). *Herpetologica*, 53:30-49.
38. Janzen, F. J., S. L. Hoover and H. B. Shaffer. 1997. Molecular phylogeography of the western pond turtle (*Clemmys marmorata*): Preliminary results. *Chelonian Conservation and Biology* 2:623-626.
37. Voss, S. R. and H. B. Shaffer. 1996. What insights into the developmental traits of urodeles does the study of interspecific hybrids provide? *International Journal of Developmental Biology*, 40: 885-893.
36. Fisher, R. N. and H. B. Shaffer. 1996. The decline of amphibians in California's Great Central Valley *Conservation Biology*, 10:1387-1397.
35. Shaffer, H.B. and M. L. McKnight. 1996. The polytypic species revisited: genetic differentiation and molecular phylogenetics of the tiger salamander (*Ambystoma tigrinum*) (Amphibia: Caudata) complex. *Evolution*, 50:417-433.
34. Shaffer, H. B. and S. R. Voss. 1996. Phylogenetic and mechanistic analysis of a developmentally integrated character complex: Alternate life history modes in ambystomatid salamanders. *American Zoologist*, 36(1):24-35.

33. Stanley, S., P. B. Moyle and H. B. Shaffer. 1995. Allozyme analysis of Delta Smelt, *Hypomesus transpacificus* and Longfin Smelt, *Spirinchus thaleichthys* in the Sacramento-San Joaquin estuary, California. *Copeia*, 1995:390-396.
32. Wade, M. J., M. L. McKnight and H. Bradley Shaffer. 1994. The effects of kin-structured colonization and stepping-stone range expansion on nuclear and cytoplasmic gene diversity. *Evolution*, 48:1114-1120.
31. Barry, S. J. and H. B. Shaffer. 1994. The status of the California Tiger Salamander (*Ambystoma californiense*) at Lagunita: A fifty-year update. *Journal of Herpetology* 28:159-164.
30. Zhao, E.-M., R. F. Inger, G.-F. Wu, and H. B. Shaffer. 1994. Morphological variation and ecological distribution of co-occurring larval forms of *Oreolalax* (Anura: Pelobatidae). *Amphibia-Reptilia*, 15:109-121.
29. Shaffer, H.B., R.A. Alford, B.D. Woodward, S.J. Richards, R. G. Altig and C. Gascon. 1994. Quantitative sampling of amphibian larvae. Pps 130-141 in W.R. Heyer et al., editors, *Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians*. Smithsonian Institution Press, Washington, D.C.
28. Shaffer, H.B. and E. Juterbock. 1994. Night driving. Pps. 163-166 in W.R. Heyer et al., editors, *Measuring and Monitoring Biological Diversity: Standard Methods for Amphibians*. Smithsonian Institution Press, Washington, D.C.
27. Shaffer, H. B. 1993. Phylogenetics of model organisms: The laboratory axolotl, *Ambystoma mexicanum*. *Systematic Biology* 42:508-522.
26. Kellogg, E. A. and H. B. Shaffer. 1993. Model organisms in evolutionary studies. *Systematic Biology* 42:409-414.
25. Wu, Guan-Fu, Zhao, Er-Mi, Inger, R. F. and H. B. Shaffer. 1993. A new frog of the genus *Oreolalax* (Pelobatidae) from Sichuan, China. *J. Herpetology*, 27:410-413.
24. Lauder, G.V. and H.B. Shaffer. 1993. Design of feeding systems in aquatic vertebrates: Major patterns and their evolutionary interpretations. pps 113-149 in J. Hanken and B.K. Hall, eds. *The Skull*, vol 3. University of Chicago Press.
23. Austin, C.C. and H.B. Shaffer. 1992. Short, medium, and long term repeatability of locomotor performance in the tiger salamander *Ambystoma californiense*. *Functional Ecology* 6:145-153.
22. Shaffer, H.B., J.M. Clark, and F. Kraus. 1991. When molecules and morphology clash: A phylogenetic analysis of the North American ambystomatid (Caudata: Ambystomatidae) salamanders. *Systematic Zoology* 40(3): 284-303.
21. Shaffer, H.B., C.C. Austin, and R.B. Huey. 1991. The consequences of metamorphosis on salamander (*Ambystoma*) locomotor performance. *Physiological Zoology* 64(1): 212-231.

20. Inger, R.F., E. Zhao, H. Bradley Shaffer, and G. Wu. 1990. Report on a collection of amphibians and reptiles from Sichuan, China. *Fieldiana Zoology*, #58.
19. Shaffer, H.B. and F. Breden. 1989. The relationship between allozyme variation and life history: Non-transforming salamanders are less variable. *Copeia* 1989(4):1016-1023.
18. Shaffer, H.B. 1989. Natural history, ecology, and evolution of the Mexican "Axolotls". *Axolotl Newsletter* #18:5-12.
17. Shaffer, H.B. 1988. Size and scaling in the indian frogs *Nyctibatrachus* and *Nannobatrachus* (Ranidae). *Fieldiana Zoology*, #46.
16. Shaffer, H.B. and G.V. Lauder. 1988. The ontogeny of functional design: Metamorphosis of feeding behavior in the Tiger Salamander (*Ambystoma tigrinum*). *Journal of Zoology*, London 216:437-454.
15. Lauder, G.V. and H.B. Shaffer. 1988. The ontogeny of functional design: Are motor patterns conserved during major morphological transformations? *Journal of Morphology* 197:249-268.
14. Inger, R.F., H.B. Shaffer, M. Koshy and R. Bakde. 1987. Ecological structure of a herpetological assemblage in South India. *Amphibia-Reptilia* 8: 189-202.
13. Shaffer, H.B. 1986. The utility of quantitative genetic parameter estimates in character weighting. *Systematic Zoology* 35(1): 124-134.
12. Lauder, G.V. and H.B. Shaffer. 1986. Functional design of the feeding mechanism in lower vertebrates: Unidirectional and bidirectional flow systems. *Zool J. Linn Soc.* 88: 277-290.
11. Shaffer, H.B. and G.V. Lauder. 1985. Aquatic prey capture in ambystomatid salamanders: Patterns of variation in muscle activity. *Journal of Morphology* 183: 273-284.
10. Shaffer, H.B. and G.V. Lauder. 1985. Patterns of variation in aquatic ambystomatid salamanders: Kinematics of the feeding mechanism. *Evolution* 39: 83-92.
9. Shaffer, H.B. and G.V. Lauder. 1985. Functional morphology of the feeding mechanism in aquatic ambystomatid salamanders. *Journal of Morphology* 185: 297-326.
8. Shaffer, H.B. 1984a. Evolution in a paedomorphic lineage. I. An electrophoretic analysis of the Mexican ambystomatid salamanders. *Evolution* 38: 1194-1206.
7. Shaffer, H.B. 1984b. Evolution in a paedomorphic lineage. II. Allometry and form in the Mexican ambystomatid salamanders. *Evolution* 38: 1207-1218.
6. Inger, R.F., H.B. Shaffer, M. Koshy and R. Bakde. 1984a. A report on a collection of amphibians and reptiles from the Ponnudi, Kerala, South India. Part 1. *Journal of Bombay Natural History Society* 81(2): 406-427.

5. Inger, R.F., H.B. Shaffer, M. Koshy and R. Bakde. 1984b. A report on a collection of amphibians and reptiles from the Ponmudi, Kerala, South India. Part 2. *Journal of Bombay Natural History Society* 81(3): 551-570.
4. Shaffer, H.B. 1983. Biosystematics of *Ambystoma rosaceum* and *A. tigrinum* in northwestern Mexico. *Copeia* 1983: 67-78.
3. Feder, M.E., J.F. Lynch, H.B. Shaffer and D.B. Wake. 1982. Field body temperatures of tropical and temperate zone salamanders. *Smithsonian Herpetological Information Services* #52.
2. Kiestler, A.R., T. Nagylaki and B. Shaffer. 1981. Population dynamics of species with gynogenetic sibling species. *Theoretical Population Biology* 19(3): 358-369.
1. Shaffer, H.B. 1978. Relative predation pressure on salamanders (Caudata, Plethodontidae) along an altitudinal transect in Guatemala. *Copeia* 1978: 268-272.

Manuscripts in Press/Available Early Online:

Messerman, A. F., A. G. Clause, L. N. Gray, M. Krkosek, H. B. Rollins, P. C. Trenham, H. B. Shaffer* and C. A. Searcy*. Applying stochastic and Bayesian integral projection modeling to amphibian population viability analysis. *Ecological Applications* (17 October 2022). * = co-senior authors

Grismer, J. L., M. Escalona, C. Miller, E. Beraut, C. W. Fairbairn, M. P. A. Marimuthu, O. Nguyen, E. Toffelmier, I. J. Wang, and H. B. Shaffer. Reference genome of the Rubber Boa, *Charina bottae* (Serpentes: Boidae). *Journal of Heredity* (3 September 2022).

Anghel, I., S. J. Jacobs, M. Escalona, M. P. A. Marimuthu, C. W. Fairbairn, E. Beraut, O. Nguyen, E. Toffelmier, H. B. Shaffer, and F. Zapata. Reference genome of the color polymorphic desert annual plant *Linanthus parryae*. *Journal of Heredity* (8 September 2022).

Beninde, J.*, E. Toffelmier*, and H. B. Shaffer. 2022. A brief history of population genetic research in California and an evaluation of its utility for conservation decision-making. *Journal of Heredity* 113:xx – xx (1 September 2022). * = co-first authors

Bernardi, G., J. A. Toy, M. Escalona, M. P. A. Marimuthu, R. Sahasrabudhe, O. Nguyen, S. Sacco, E. Beraut, E., Toffelmier, E., C. Miller and H. B. Shaffer. 2022. Reference genome of the Black Surfperch, *Embiotoca jacksoni* (Embiotocidae, Perciformes), a California kelp forest fish that lacks a pelagic larval stage. *Journal of Heredity* (7 July 2022).

Fiedler, P. L., B. Erickson, M. Esgro, M. Gold, J. M. Hull, J. Norris, B. Shapiro, M. Westphal, E. Toffelmier, and H. B. Shaffer. Seizing the Moment: The opportunity and relevance of the California Conservation Genomics Project to state and federal conservation policy. *Journal of Heredity* 113:xx – xx (16 August 2022).

- Toffelmier, E., J. Beninde, and H. B. Shaffer. 2022. The phylogeny of California, and how it informs setting multi-species conservation priorities. *Journal of Heredity* 113:xx – xx (16 August 2022).
- Wood, D. A., J. Q. Richmond, M. Escalona, M. P. A. Marimuthu, O. Nguyen, S. Sacco, E. Beraut, M. Westphal, R. N. Fisher, A. G. Vandergast, E. Toffelmier, I. J. Wang, and H. B. Shaffer. Reference genome of the California glossy snake, *Arizona elegans occidentalis*, a declining California Species of Special Concern. *Journal of Heredity* (3 August 2022).
- Bernardi, G., M. DeBiase, M. Escalona, M. P. A. Marimuthu, O. Nguyen, S. Sacco, E. Beraut, C. Miller, E. Toffelmier, and H. B. Shaffer. Reference genome of the California Sheephead, *Semicossyphus pulcher* (Labridae, Perciformes), a keystone fish predator in kelp forest ecosystems. *Journal of Heredity* (23 June 2022).
- Grismer, J., P. Scott, E. Toffelmier, B. Hinds, R. Toshima, G. Stewart, V. White, J. Oaks, and H. B. Shaffer. Genomic data reveal local endemism in Southern California Rubber Boas (Serpentes: Boidae, *Charina*) and the critical need for enhanced conservation actions. *Molecular Phylogenetics and Evolution* (31 May 2022).
- Shaffer, H. B., E. Toffelmier, R. B. Corbett-Detig, M. Escalona, B. Erickson, P. Fiedler, M. Gold, R. J. Harrigan, S. Hodges, T. K. Luckau, C. Miller, D. R. Oliveira, K. E. Shaffer, B. Shapiro, V. L. Sork, and I. J. Wang. 2022. Landscape genomics to enable conservation actions: The California Conservation Genomics Project. *Journal of Heredity* 113:xx – xx; esac020 (3 April 2022 DOI: [10.1093/jhered/esac020](https://doi.org/10.1093/jhered/esac020) (Note: Selected as Editor's Choice, including cover image; based on this article, the Editor in Chief decided to dedicate an entire issue, #6, to the CCGP.)
- Todd, B. D., Jenkinson, T. S., Escalona, M., Beraut, E., Nguyen, O., Sahasrabudhe, R., Scott, P. A., Toffelmier, E., Wang, I. J., and H. B. Shaffer. 2022. Reference genome of the northwestern pond turtle, *Actinemys marmorata*. *Journal of Heredity* 113:xx – xx (7 April 2022)
- MacDonald, Z.G., Shaffer, H. B., Sperling, F.A.H. (In Press) Impacts of land use and climate change on natural populations: the butterfly perspective. Chapter 8 In: Cork, S., Whiteside, D. (eds.) *Case Studies in Eco Health*. 5m Publishing, Sheffield, U.K. (10 January 2022)

Submitted Manuscripts/Available Online:

- Grether, G. F., M. Escalona, R. Sahasrabudhe, E. Beraut, N. Chumchim, E. Toffelmier, C. Miller, Z. G. MacDonald, and H. B. Shaffer. Reference genome for the American rubyspot damselfly, *Hetaerina americana*. *Journal of Heredity* (submitted 5 October 2022, minor revisions requested 8 November 2022).
- Beninde, J., G. Gonzalez, T. W. Delaney, and H. B. Shaffer. Harnessing iNaturalist to quantify and manage urban biodiversity: the Los Angeles case study. *Frontiers in Ecology and Evolution* (30 May 2022, revisions requested and in progress).

van Riemsdijk, I., J. W. Arntzen, G. Bucchiarelli, E. McCartney-Melstad, M. Rafajlovic, P. A. Scott, E. Toffelmier, H. B. Shaffer, and B. Wielstra. Multiple transects reveal remarkable variation in gene flow across a European toad hybrid zone. *Heredity*, (8 June 2022). preprint at <https://www.biorxiv.org/content/10.1101/746073v2>).

Beninde, J., J. E. Vendetti, and H. B. Shaffer. Biodiversity in a box: Non-native invertebrates preferentially find refugia in green space management infrastructure across urban Los Angeles. *Biological Invasions* (submitted 22 April 2022, accepted pending minor revisions 17 October 2022)

Cooper, R. D. and H. B. Shaffer. Manipulating landscapes to reduce invasive hybrid advantage. *Conservation Biology* (~ 16 November 2022)

Bentley, B. B., and 44 additional coauthors. Divergent sensory and immune gene evolution in sea turtles with contrasting demographic and life histories. *Proceedings of the National Academy of Sciences, USA* (21 January 2022; revisions in progress)

Ashander, J., P Ralph, E. McCartney-Melstad and H. B. Shaffer. Demographic inference in a spatially-explicit ecological model from genomic data: a proof of concept for the Mojave desert tortoise. (<http://biorxiv.org/cgi/content/short/354530v1>).

Technical Reports:

Schlesinger, M.D., J.A. Feinberg, N.H. Nazdrowicz, J.D. Kleopfer, J. Beane, J.F. Bunnell, J. Burger, E. Corey, K. Gipe, J.W. Jaycox, E. Kiviat, J. Kubel, D. Quinn, C. Raitel, S. Wenner, E.L. White, B. Zarate, and H.B. Shaffer. 2017. Distribution, identification, landscape setting, and conservation of *Rana kauffeldi* in the northeastern U.S. Report to the Wildlife Management Institute for Regional Conservation Needs grant RCN 2013-03. Available from New York Natural Heritage Program, Albany, NY.

Pauly, G. B. and H. B. Shaffer. 2010. Are flatwoods salamanders from South Carolina genetically distinct from their southern conspecifics? Final Report, USFWS.

Shaffer, H. B. 2008. Final Report: California Tiger Salamander Mitigation Study. Final Report, Caltrans.

Shaffer, H. B., D. Cook, B. Fitzpatrick, K. Leyse, A. Picco and P. Trenham. 2008. Guidelines for the relocation of California Tiger Salamanders (*Ambystoma californiense*). Final Report, U. S. Fish and Wildlife Service.

Pauly, G. B. and H. B. Shaffer. 2005. Phylogenetic variation in mitochondrial DNA of the flatwoods salamander, *Ambystoma cingulatum*. Final Report, U.S. Fish and Wildlife Service.

Atkinson, A. J., B. S. Yang, R. N. Fisher, E. Ervin, T. J. Case, N. Scott and H. B. Shaffer. 2002. Recommendations for MCB Camp Pendleton Arroyo Toad Monitoring Protocol. Final report, USGS.

- Shaffer, H. B., R. N. Fisher and S. E. Stanley. 1993. Status Report: The California tiger salamander *Ambystoma californiense*. Final Report, California Dept. of Fish and Game.
- Bishop, C., Bradford, D., Casper, G., Corn, S., Droege, S., Fellers, G., Geissler, P., Green, D., Heyer, R., Lannoo, M., Larson, D., Johnson, D., McDiarmid, R., Sauer, J., Shaffer, H.B., Whiteman, H., Wilbur, H. 1994. A Proposed North American Amphibian Monitoring.
- Rodriguez, L. O., J. Perez Z. and H. B. Shaffer. 2001. Anfibios y Reptiles/Amphibians and Reptiles. pp. 69-74 & 141-146 in Alverson, W.S., L.O. Rodriguez and D.K. Moskovits (eds.). Perú: Biabo Cordillera Azul. Rapid Biological Inventories Report 2. Chicago, Il.: The Field Museum.
- Atkinson, A. J., B. S. Yang, R. N. Fisher, E. Ervin, T. J. Case, N. Scott and H. B. Shaffer. 2003. MCB Camp Pendleton Arroyo Toad monitoring protocol. Sacramento, CA. 41 pages.
- Shaffer, H. B. and P. C. Trenham. 2002. Distinct population segments of the California tiger salamander, *Ambystoma californiense*. Report to the USFWS.
- Shaffer, H. B., Zhang, Y, and Wang, T. 2003. Amphibians and Reptiles. Pp. 73-75, 99-100, plates 5,6 in Stotz, D. F., E. J. Harris, D. K. Moskovits, K. Hao, S. Yi and G. W. Adelman (eds.). China: Yunnan, southern Gaoligongshan. Rapid Biological Inventories 04. Chicago, Il.: The Field Museum.

Book Reviews:

- Shaffer, H. B. 2022. Review of *Turtles of the World: A Guide to Every Family*, by J. E. Lovich and W. Gibbons. *Ichthyology and Herpetology*, 110 (3): 634 –636 (note, this PDF from the journal includes several book reviews including mine)
- Shaffer, H. B. 2022. Review of *Conservation genetics in mammals. Integrative Research Using Novel Approaches*, edited by Jorge Ortega and Jesus E. Maldonado. *Quarterly Review of Biology* 97:168-169.
- Shaffer, H.B. 2016. Review of *Biology & Conservation of North American Tortoises* edited by D.C. Rostal, E.D. McCoy and H.R. Mushinsky, 2014, John's Hopkins Press. 190 pp. and *The Texas Tortoise. A Natural History* by F. L. Rose and F. W. Judd, 2014, University of Oklahoma Press, 188 pp. *Quarterly Review of Biology* 91:526-527.
- Shaffer, H. B. 2014. Review of *The Turtles of Mexico: Land and Freshwater Forms*, by J. M. Legler and R. C. Vogt. *Copeia* 2014:187-189. DOI is 10.1643/OT-13-124.
- Shaffer, H.B. 2012. Review of *Biology of Turtles: From Structures to Strategies of Life*. J. Wyneken, M. H. Godfrey and V. Bels, eds. *Copeia* 2012:771-773.
- Shaffer, H. B. 2004. Amphibians, reptiles and a whole lot more. Review of "The Amphibians and Reptiles of Costa Rica. A Herpetofauna Between Two Continents, Between Two Seas." by Jay M. Savage. *Conservation Biology* 18(5):1440-1441.

Shaffer, H. B. 1998. Review of "Herpetology" by F Harvey Pough et al. Systematic Biology, 47(4):763-764.

Parichy, D. M., H. B. Shaffer and M. Mangel. 1992. Heterochrony as a unifying theme in evolution and development. Review of "Heterochrony: The evolution of ontogeny" by M. L. McKinney and K. J. McNamara. Evolution 46(4):1252-1254.

Griesemer, J. R. and H. B. Shaffer. 1992. Review of "Reconstructing the past: Parsimony, evolution and inference" by Elliot Sober. The Philosophical Review 101:725-729.

Shaffer, H.B. 1990. Review of Speciation and its consequences (Otte and Endler, eds.) Evolution 44(6):1711-1712.

Shaffer, H.B., and R.K. Grosberg. 1989. Review of Matsuda, R. Animal evolution in changing environments with special reference to abnormal metamorphosis. Copeia 1989(4):1121-1122.

Shaffer, H.B. 1983. Review of Metamorphosis: A problem in developmental biology. (Gilbert and Frieden, eds.) Herpetologica 39(3): 311-313.

Invited Seminars/Symposia (2000-present):

USFWS presentation to the Western Pond Turtle Range-wide Conservation Coalition (RCC), November 2022 (virtual)

ARMI (Amphibian Research and Monitoring Initiative) workshop leader on genomics in amphibian research, Long Beach, November 2022

NSF Office of Polar Programs workshop "Mapping the Future Applications of 'Omics in Antarctic Research. October 2022 (virtual)

Keynote, 4th Genomes of Animals & Plants Virtual Conference (GAP22.2), October 2022 (virtual)

USFWS Western Pond Turtle Coordination Team meeting, September 2022 (virtual)

17th International Conference on Genetics (ICG), Beijing, China (virtual)

Joint Meetings of Ichthyologists and Herpetologists, Biogeography of California and the Pacific Northwest **Keynote speaker**, Spokane, WA, August 2022

Joint Meetings of Ichthyologists and Herpetologists, Exemplary Teaching in Herpetology, Spokane, WA, August 2022

UC Cooperative Extension workshop on post-fire recovery, February 2022 (virtual)

USFWS/CDFW joint presentation, Santa Barbara CTS recovery options, January 2022 (virtual)

Plant and Animal Genome Conference XXIX (PAG), January 2022 (lead talk in workshop on Population and Conservation genomics; virtual)

UNLV Guest lecturer, Cons. Genetics course, November 2021 (virtual)

California Conservation Genomics Project, November 2021 (virtual)

University of South Florida, November 2021 (virtual)

American Genetics Association President's symposium, Snowbird, UT October 2021

Western Pond Turtle Range-wide Conservation Coalition, Genomics update, April 2021; virtual

Northern California Science Writers Association (virtual talk) April, 2021; virtual

US Fish and Wildlife Service seminar, Ventura office, March 2021; virtual

Santa Ynez Valley Natural History Society, February 2021; virtual

UCLA, “Our Home, How California's Landscape is Evolving” panel seminar, February 2021
City of Los Angeles Biodiversity symposium, November 2020; virtual
Museum of Vertebrate Zoology, UC Berkeley, November 2020; virtual
Wellcome Trust Biodiversity Genomics (plenary in Conservation session), October 2020; virtual
California Department of Fish and Wildlife Conservation Lecture, October 2020; virtual
San Diego State University, March 2020
Princeton University, Princeton NJ December 2019
Temple University, Philadelphia, Departmental Seminar, November 2019
Michigan State University, East Lansing, Departmental Seminar, October 2019
San Diego Natural History Museum Baja California WPT genomics, August 2019
LSTS Conservation program, invited symposium talk, San Diego Zoo, April 2019
Exploring the Wildland-Urban Interface, symposium, Riverside, April 2019
University of Florida Department Seminar, April 2019
Sustainable LA Symposium, Natural and Urban Ecosystems of LA County, Los Angeles, February 2019
University of Nevada Las Vegas, Las Vegas, February 2019
Keynote speaker, California-Nevada Amphibian Populations Task Force, Arcata, January 2019
California-Nevada Amphibian Populations Task Force (2nd talk), Arcata, January 2019
The Wildlife Society Invasives Symposium at 25th Annual Conference, Cleveland, October 2018
LA City Biodiversity Expert Council Workshop, Play del Rey, September 2018
Emys (Actinemys) marmorata Working Group Meeting, McClellan Sacramento, September 2018
Turtle Survival Alliance, *Graptemys* symposium, Dallas, August 2018
Emys (Actinemys) pallida Working Group Meeting, Stunt Ranch, April 2018
NHM Los Angeles, research symposium series, April 2018
UC Merced Vernal Pool Symposium, keynote lecture, March 2018
UCLA Grand Challenge Sustainable LA Energy Research Symposium, March 2018
USFWS Webinar, Santa Barbara CTS Advisory Committee, March 2018
Santa Barbara Tiger Salamander Collaborative Meeting, Santa Maria, November 2017
California Tiger Salamander Conservation Science Symposium, Ft Ord, CA 2017
University of California Conservation Genomics Consortium, Blue Oak Reserve, August 2017
International Urban Wildlife Conference, San Diego, June 2017
University of Texas, Austin, May 2017
Genetics training grant annual speaker, Yale University, New Haven, May 2017
Southwestern Herpetologists Society, Pasadena, March 2017
USFWS Webinar, CTS Science Advisory Committee, December 2016
Luskin Innovators Speaker Series Discussant: Citizen Scientists, UCLA, November 2016
Mountain Yellow-legged Frogs in the Sierra Nevada Interagency Conservation Strategy Meeting, 2016
UCLA Luskin Endowment Inaugural Symposium “Earth Now: Earth 2050”, Los Angeles, 2016
La Kretz Public Discussion, LA River biodiversity, LA Natural History Museum, 2016
MapNet Genomics Workshop, Keynote, Nelson, New Zealand 2016
American Society of Ichthyologists and Herpetologists Centennial Symposium, New Orleans, 2016
Museum of Vertebrate Zoology, UC Berkeley, 2016
Purdue University, West Lafayette, 2016
California Conservation Genomics, Sacramento 2016
American Society of Ichthyologists and Herpetologists, Presidential Address, Reno, 2015
University of Kansas (Distinguished Biodiversity Speaker), 2015
Genome 10K, Santa Cruz CA 2015
Desert Tortoise Council 40th Annual Symposium, Las Vegas, 2015

Iowa State University, Keynote Speaker, EEB Spring Symposium, Ames IA 2015
Muir Centennial Symposium, UCLA (2014)
USFWS Partners for Wildlife Amphibian Summit, Elkhorn Slough, CA 2014
University of Montana (graduate student Super Speaker), 2014
Peking University/UCLA joint conference, 2014
LA County Museum of Natural History First Friday Speaker, 2014
USGS Workshop on Genetics for Monitoring and Management, San Diego 2013
LA County Museum of Natural History, RAAD Keynote Speaker 2013
University of California, Riverside, 2013
Louisiana State University, 2013
IoES Board Meeting, UCLA 2013
Luskin Center, UCLA 2013
LA County Museum of Natural History, 2012
Pepperdine University, 2012
CSU Northridge, 2012
University of Southern California, 2012
Keynote Speaker, Las Virgenes Federation, 2012
Keynote speaker, UC Natural Reserve System, Oakland 2012
7th World Congress of Herpetology, Vancouver 2012 (2 symposium talks)
University of California, San Diego 2012
University of Nevada, Reno 2012
Case Western University, 2012
Genome 10K, Santa Cruz, 2011
California Academy of Sciences, San Francisco, 2011
UCLA Ecology and Evolution Department Seminar, 2011
CDFG CTS hybrid workshop, 2011
The Wildlife Society, Sacramento, 2010
NIMBioS Working Group on Species Delimitation, 2010-2012
Bay Area Biosystematists 2010
UC Davis Evolution and Ecology seminar, 2010
Vernal Pool Workshop, CSU Chico, 2010
American Genetics Association, Hilo 2010
USFWS special workshop on hybrid salamander management, Sacramento 2010
University of Tennessee, Knoxville 2010
University of Massachusetts, Amherst 2010
Concord Academy/Public seminar, Concord 2010
Boston University 2010
Royal Tyrrell Museum, Drumheller, Alberta 2009 (Fossil turtle symposium)
Harvard University 2009 (Hrdy Lecture in Conservation Biology)
USFWS, Sacramento Field Office 2009
Darwin Day Keynote Speaker, UC Merced 2009
Declining Amphibian Population Task Force, Bodega Bay, 2009 (3 talks)
Turtle Survival Alliance, Tucson 2008
Yale University, 2008 (2 lectures)
University of California, Berkeley MVZ Centennial lecture 2008
Bay Area Biosystematists, Sonoma State University 2008
Jepson Prairie Docent's Seminar, California Tiger Salamander Biology, Davis 2008

Purdue University, 2007
University of Chicago, 2007
Vernal pool workshop, UC Davis, 2007
Jepson Prairie Docent's Seminar, California Tiger Salamander Biology, Davis 2007
Bay Area Biosystematists, 2006
UC Exotics/Pest symposium, Riverside 2006
Powdermill Symposium on Freshwater Turtles, Portal AZ 2006 (3 talks)
University of Kentucky, Lexington 2006
Society of Systematic Biologists, Stony Brook 2006
Okazaki Conference: Biology of Extinction, Okazaki, Japan 2006
Jepson Prairie Docent's Seminar, California Tiger Salamander Biology, Davis 2006
Simon Fraser University, Vancouver, Canada 2005
University of Nevada, Reno, 2005
The Wildlife Society, Santa Rosa, 2005
CSIRO, Canberra, Australia, 2004
University of Canberra, Australia 2004
First Okazaki Biology Conference: Biology of Extinction, Okazaki, Japan 2004
Wildlife Society, Santa Rosa, CA 2003 (2 lectures)
American Society of Ichthyologists and Herpetologists, Manaus 2003 (2 symposia)
University of Michigan, Ann Arbor 2003
Kyushu University, Japan 2003 (Distinguished Lecturer invitation)
University of Texas, Austin, 2003
Sacramento Zoological Society, Sacramento, 2002
Joint Meetings, ASIH, SSAR, and HL, Kansas City, MO 2002
Society for Conservation Biology, UC Davis chapter, 2002
Chico State University, Chico, CA 2002
Dartmouth College, Hanover, N.H. 2001
California Academy of Sciences "BioForum" speaker, 2001
Florida State University (elected yearly speaker by FSU graduate students), 2001
Wildlife Society, Declining CA amphibian symposium, Sacramento, 2001 (4 presentations)
San Benito Co. Habitat Conservation Plan Workshop, Hollister, 2000
Santa Ynez Natural History Society, Inaugural presentation, Santa Barbara, 2000
American Association of Ichthyologists and Herpetologists, La Paz, 2000
Field Museum of Natural History, Chicago, 2000

Presented Papers (2000-present):

Turtle Survival Alliance, virtual meeting, 2020
California-Nevada Amphibian Populations Task Force, San Diego, 2020
The Wildlife Society, Sacramento (Eric Olson, presenting), 2020
Herpfest, CSUN, Northridge, 2019 (2 talks)
American Society of Ichthyologists and Herpetologists, Rochester NY 2018 (4 talks, 1 presentation)
American Society of Ichthyologists and Herpetologists, Austin TX 2017 (3 talks, 1 presentation)
Evolution/SSE/SSB, Portland, Oregon (3 talks, 1 presentation)
Herpfest, UC Riverside, Riverside, 2017
California-Nevada Amphibian Populations Task Force, Santa Barbara, 2017 (4 presentations)
American Society of Ichthyologists and Herpetologists New Orleans 2016 (5 presentations)

Turtle Survival Alliance, Tucson, 2015
California-Nevada Amphibian Populations Task Force, Malibu, 2015 (1 presentation, 4 coauthored)
Turtle Survival Alliance, St. Louis 2013
American Society of Ichthyologists and Herpetologists Albuquerque 2013 (5 presentations)
California-Nevada Amphibian Populations Task Force, Arcata, 2013 (3 presentations)
California-Nevada Amphibian Populations Task Force, Placerville, 2012
American Society of Ichthyologists and Herpetologists Minneapolis 2011 (2 presentations)
Ecological Society of America, Austin 2011
Tropical Conservation Biology and Environmental Science, UH Hilo, 2011
Turtle Survival Alliance, Orlando 2010
Ecological Society of America, Pittsburg 2010 (coauthor on 2 talks)
Ecological Society of America, Albuquerque NM 2009
American Society of Ichthyologists and Herpetologists Portland OR 2009 (coauthor on 3 presentations)
Society for the Study of Evolution, Idaho 2009 (coauthor on 2 presentations)
American Society of Ichthyologists and Herpetologists Montreal 2008 (2 presentations)
Society for the Study of Evolution, Minneapolis 2008 (coauthor on 3 presentations)
Southeastern Ecology, Evolution, and Population Genetics, Tennessee 2007
American Society of Ichthyologists and Herpetologists St. Louis, MO 2007 (2 presentations)
American Society of Ichthyologists and Herpetologists New Orleans, LA 2006 (3 presentations)
American Society of Ichthyologists and Herpetologists Tampa, FL 2005 (4 presentations)
Ecological Society of America, Montreal 2004
Society for the Study of Evolution, Chico, CA 2003

Conservation and Outreach Activities

All-hands meeting, CCGP, UCLA, September 2022
A Conversation on Los Angeles Wildlife Corridors, Invited Panelist (21 September 2021)
Western Pond Turtle Rangewide Conservation Coalition, Founding Member
USFWS Species Survival Analysis technical team for Western Pond turtle, March 2021-present
USFWS seminar, March 2021, on SB CTS
UCLA, "Our Home, How California's Landscape is Evolving" panel seminar, February 2021
NASA Biodiversity Conservation Roundtable participant, 15 January & 11 February 2021
Scientific peer review, USFWS Species Status Assessment (Western spadefoot), 27 April 2020-present
USFWS expert meeting, Western spadefoot, presenter/participant, 8-9 July 2020
San Diego Natural History Museum Baja California research symposium August 2019
Santa Cruz Long-toed salamander working group, Elkhorn Slough, August 2019
NCC Day-long workshop on vernal pools, UCLA, April 2019
LSTS Conservation program, invited symposium talk, San Diego Zoo, April 2019
Exploring the Wildland-Urban Interface, symposium, Riverside, April 2019
Lecture for University of Florida Herpetology Course, declining amphibians, April 2019
Sustainable LA Symposium, Natural and Urban Ecosystems of LA County, Los Angeles, February 2019
Santa Barbara Tiger Salamander Collaborative presentation, Santa Maria, May, 2018
UCLA Grand Challenge Sustainable LA Energy Research Symposium, March 2018
Atlantic Coast Leopard Frog recovery team (2016- present)
Santa Barbara Tiger Salamander Collaborative presentation, Santa Maria, November 2017
California Tiger Salamander Conservation Science Symposium (2017, cosponsor)
Biodiversity Expert Council, City of Los Angeles (2017-present)

University of California Conservation Genomics Consortium, 2017
Herpetological Education Committee, ASIH (2016-2019)
Spiritus Award Committee (Chair), ASIH, 2017
Urban Wildlife Working Group Symposium Coordination Committee, San Diego, 2017
La Kretz Public Discussion, LA River biodiversity, LA Natural History Museum, 2016
MapNet workshop, Keynote on Conservation Genomics, Nelson New Zealand, 2016
Workshop on grant writing, ASIH centennial meeting, New Orleans, 2016
California tiger salamander Science Advisory Committee workshop, Sacramento, 2016
Presentation to Carlsbad office of USFWS on California Conservation Genomics Initiative, 2016
Presentation to Sacramento office of USFWS on California Conservation Genomics Initiative, 2016
Presentation to Ventura office of USFWS on California Conservation Genomics Initiative, 2016
Natural Communities Coalition, Orange County, leadership team and full day workshop, 2016
California Conservation Genomics Workshop, Sacramento, February 2016
California tiger salamander Science Advisory Committee appointment by USFWS, January 2016
Presentation leader to California Fish and Game Commission, 7-8 October 2015, Los Angeles
Sustainable LA Biodiversity Committee and Leadership Team, UCLA Grand Challenge, 2014-present
Animals in 3-D, panel discussion on animals in science and culture, UCLA, September 2014
USFWS Partners for Wildlife Amphibian Summit speaker, Elkhorn Slough, CA 2014
First Friday Keynote, 7 March 2014, LA County Museum of Natural History
Genetics for Monitoring and Management Workshop, (Genomics presenter) November 2013
Science Panel Member (invited), Nature Reserve of Orange County, November 2013
Advisory Board, The Turtle Conservancy (2013-present)
Hosted California Fish and Game Commission, 22-23 May 2013, UCLA campus
Presentation leader to California Fish and Game Commission, 22-23 May 2013, Los Angeles
Cabrillo National Monument Reptile and Amphibian Monitoring Advisory Committee, 2013
California Tiger Salamander Recovery Planning working group, 2013-present
UC Merced Vernal Pool Reserve Advisory Committee, 2012-present
Keynote Speaker, Las Virgenes Federation, April 2012
La Kretz Center for California Conservation Science, Director, 2012-present
California Landscape Conservation Cooperative (LCC) Steering Committee, 2011-present
Advisory Board, Turtle Conservation and Research Programme, India (April 2011-present)
Jepson Prairie Docent's Seminar, California Tiger Salamander Biology, Davis 2011
Lead scientist/speaker, CDFG workshop on hybrid CA tiger salamander management, 2011
Speaker & Discussion leader, USFWS special meeting on management of hybrid CTS, 2010
Grant evaluator for the Department of Defense SERDP program, 2010
Evaluator for the National Research Council report, *Sea Turtle Status and Trends: Integrating Demography and Abundance*, March 2010
Invited speaker, annual public seminar on conservation biology, Concord Academy, 2010
Invited scientific commentator/evaluator on the Proposed Rule to list the California Tiger Salamander as endangered in California, CDFG, 2009.
Pro bono consultant, California tiger salamander conservation, Travis Air Force Base, 2009
Presentation to USFWS updating on California Tiger Salamander conservation, 2009
Amphibian and Reptile Species of Special Concern document for the state of California, 2008-09
Peer reviewer, Recovery Plan for the Mojave Desert Tortoise, USFWS November 2008
Turtle Survival Alliance, Participant in the Top 40 endangered species program
Member, Rush Ranch Science and Technical Advisory Team (August 2008-present)

Workshop on Relocation of Endangered California Tiger Salamanders (organized by Shaffer, in collaboration with USFWS & CDFG) 21 March 2008

Workshop on Conservation and Management of Western Pond Turtles, Redding 6 Feb. 2008

Jepson Prairie Docent's Seminar, California Tiger Salamander Biology, Davis 2007

Potrero Hills Scientific Review Team, May-September 2006/7 (CTS evaluation)

Jepson Prairie Docent's Seminar, California Tiger Salamander Biology, Davis 2006

Invited participant, "Evolutionary hotspots" workshop (California State Parks) November, 2005

Scientific advisor, Caltrans working group on mitigation standards for California tiger salamanders, October 2005

Invited speaker, Wildlife Society workshop on the Western Pond Turtle, Sonoma State University, 16-17 April 2005

Invited speaker, California State Parks symposium on Genetic Monitoring. UC Davis, 16 February, 2005

ASIH Conservation Committee, 2005-present

CSIRO Researching with Scientists Scheme (2004): (for four Australian high-school students)

Reviewer for 2004 IUCN amphibians of the world project (Mexican ambystomatid salamanders)

"Conservation of the California Tiger Salamander"- Published interview **Environmental Review** 2004, 11(10): 1-8.

Invited speaker for the Yolo Basin Foundation's Flyway Nights Lecture Series, 2003

Invited scientific commentor/evaluator on the Proposed Rule to list the Central California population segment of *Ambystoma californiense*, USFWS, 2003.

Invited speaker, Wildlife Society workshop on the California Tiger Salamander, Sonoma State University, 4-5 October, 2003

Member, Science Advisory team, Arroyo toad monitoring and survey study, Camp Pendleton, CA 2002

Member, Science Advisory Group for the Merced County NCCP/HCP 2002

Speaker on Amphibian Declines, Sacramento Zoological Society, Sacramento, 2002

Participant, Rapid Biological Inventory. China: Gaoligong Shan, Yunnan Prov. Field Museum of Natural History, 2002

Invited Participant, Wildlife Society/USFWS/SDFG workshop on the California Red-legged frog, Pt. Reyes, 8-9 April, 2002

Participant, California Academy of Sciences "Bioforum" program, 2001

Member, USFWS Santa Barbara tiger salamander recovery team, 2001-present

Member, Santa Cruz long-toed salamander recovery team, 2001-present

Participant, Rapid Biological Inventory. Perú: Biabo Cordillera Azul. Field Museum of Natural History, 2001

IUCN workshop on Asian Turtle Crisis (facilitator for systematic biology). Dallas January, 2001.

San Benito Co. Habitat Conservation Plan (HCP) Workshop, expert on the California Tiger Salamander. September, 2000

Santa Barbara Co. Emergency listing team for the USFWS on the Santa Barbara Tiger Salamander. Spring, 2000.

UC Davis Arboretum Speaker. Spring, 2000.

Member, Jepson Prairie Advisory Committee, ~1995-present

Ph. D. Students Mentored (bold are current):

Mike Benard
Gideon Bradburd

Gary Bucciarelli
Ann Chang
Robert Cooper
Joseph Curti
Carlos Davidson
Tag Engstrom
Robert Fisher
Ben Fitzpatrick
Natalia Gallego Garcia
Lara Hansen
Karen Leyse
Amy Lind
Karen Marchetti
Evan McCartney-Melstad
Kevin Neal
Dave Parichy
Nathan Rank
Maureen Ryan
Wes Savage
Chris Searcy
Phil Spinks
Bob Thomson
Erin Toffelmier
Pete Trenham
Ian Wang

Postdoctorals Mentored (**bold are current**):

Jamie Ashander
Joscha Beninde
Gary Bucciarelli
Jim Clark
Adam Clause
Robert Cooper
David Daversa
Ben Fitzpatrick
Natalia Gallego Garcia
Muge Gidis
Rich Glor
Jesse Grismer
Mike Hickerson
Fred Janzen
Jarrett Johnson
Elizabeth Long
Zachary MacDonald
Evan McCartney-Melstad
Mark McKnight
Emily Moriarty Lemmon

Tom Near
Greg Pauly
Seth Riley
Peter Scott
Chris Searcy
Phil Spinks
Dave Starkey
Erin Toffelmier
Pete Trenham
Randal Voss
Ben Wielstra
Amber Wright
Yonghua Wu