

LAST UPDATED February 1, 2019

CONTACT INFORMATION	Department of Biology University of Hawaii 2538 McCarthy Mall, Edmondson Hall 216 Honolulu, HI 96822	thomsonr@hawaii.edu 808.956.6476 (phone) 808.956.9812 (fax) thomsonlab.org
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PROFESSIONAL APPOINTMENTS	<p>Associate Professor August 2017—Present Department of Biology, College of Natural Sciences University of Hawaii</p>
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<p>Graduate Faculty May 2012—Present Ecology, Evolution and Conservation Biology Graduate Program University of Hawaii</p>

<p>Assistant Professor January 2012—July 2017 Department of Biology, College of Natural Sciences University of Hawaii</p>
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<p>Postdoctoral Researcher October 2010—December 2011 Department of Evolution and Ecology University of California, Davis</p>
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EDUCATION	<p>Ph.D., Population Biology September 2010 University of California, Davis</p>
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<p>B.S. with High Honors, Biology May 2004 Rochester Institute of Technology</p>

PUBLICATIONS SUBMITTED OR IN PRESS	<p>42. Campillo LC, JD Manthey, RC Thomson, PA Hosner, RG Moyle. <i>in review</i>. Genomic differentiation in an endemic Philippine genus (Aves: <i>Sarcophanops</i>) due to geographic isolation on recently disassociated islands.</p> <p>41. Barley AJ, A Nieto-Montes de Oca, TW Reeder, NW Manríquez-Morán, JC Arenas Monroy, O Gallegos Hernández, RC Thomson. <i>in press</i>. Complex patterns of hybridization and introgression across evolutionary timescales in Mexican whiptail lizards. <i>Molecular Phylogenetics and Evolution</i>.</p> <p>40. Gray, LN, AJ Barley, S Poe, RC Thomson, A Nieto-Montes de Oca, IJ Wang. <i>in press</i>. Phylogeography of a widespread lizard complex reflects patterns of both geographic and ecological isolation. <i>Molecular Ecology</i>.</p>
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39. Riggs RA, AD Taylor, **RC Thomson**, RH Cowie. *in press*. Sexual Dimorphism and Seasonal Variability of Shield Size in the Endangered Hawaiian Coot, *Fulica alai*. *Waterbirds*.
- BOOKS
38. **Thomson RC**, AN Wright, HB Shaffer. 2016. California amphibian and reptile species of special concern. *University of California Press*. University of California Press. Oakland, CA. 390 p.
- PUBLICATIONS
37. Brown JM, **RC Thomson**. 2018. Evaluating Model Performance in Evolutionary Biology. *Annual Review of Ecology, Evolution, and Systematics*. 49: 95-114
36. Vinnikov KA, **RC Thomson**, TA Munroe. 2018. Revised classification of the Righteye Flounders (Teleostei: Pleuronectidae) based on multilocus phylogeny with complete taxon sampling. *Molecular Phylogenetics and Evolution*. 125: 147-162
35. Richards, EM, JM Brown, AJ Barley, RA Chong, **RC Thomson**. 2018. Unexpected variation across mitochondrial gene trees and evidence for systematic error: How much gene tree variation is biological? *Systematic Biology*. 67: 847-860
34. Höhna S, LM Coghill, GG Mount, **RC Thomson**, JM Brown. 2018. P³: Phylogenetic posterior prediction in RevBayes. *Molecular Biology and Evolution*. 35: 1028-1034
33. Brown JM, **RC Thomson**. 2018. The behavior of Metropolis-coupled Markov chains when sampling rugged (phylogenetic) distributions. *Systematic Biology*. 67: 729-734
32. Barley AJ, JM Brown, **RC Thomson**. 2018. Impact of model violations on the inference of species boundaries under the multispecies coalescent. *Systematic Biology*. 67: 269-284
31. **RC Thomson**, PQ Spinks, HB Shaffer. 2018. Molecular phylogeny and divergence of the Map Turtles (Emydidae: *Graptemys*). *Molecular Phylogenetics and Evolution*. 121: 61-70.
30. Brown JM, **RC Thomson**. 2017. Bayes factors unmask highly variable information content, bias, and extreme influence in phylogenomic analyses. *Systematic Biology*. 66: 517-530.
29. Nieto-Montes de Oca A, AJ Barley, RN Meza-Lázaro, UO García-Vázquez, JG Zamora-Abrego, **RC Thomson**, AD Leaché. 2017. Phylogenomics and species delimitation in the knob-scaled lizards of the genus *Xenosaurus* (Squamata: Xenosauridae) using ddRADseq data reveal a substantial under-estimation of diversity. *Molecular Phylogenetics and Evolution*. 106: 241-253

28. Barley AJ, **RC Thomson**. 2016. Assessing the performance of DNA barcoding using posterior predictive simulations. *Molecular Ecology*. 25:1930-1943
 - profiled in *Molecular Ecology* News and Views (Zinger and Philippe 2016)
27. Spinks PQ, **RC Thomson**, E McCartney-Melstad, HB Shaffer. 2016. Phylogeny and temporal diversification of the New World pond turtles (Emydidae). *Molecular Phylogenetics and Evolution*. 103:85-97
26. Dong CM, TN Engstrom, **RC Thomson**. 2016. Origins of softshell turtles in Hawaii with considerations for conservation. *Conservation Genetics*. 17:207-220
25. Barley AJ, PJ Monnahan, **RC Thomson**, LL Grismer, RM Brown. 2015. Sun skink landscape genomics: assessing how microevolutionary processes shape genetic and morphological diversity across a heterogeneous and fragmented landscape. *Molecular Ecology*. 24:1696-1712
24. **Thomson RC**, DC Plachetzki, DL Mahler, BR Moore. 2014. A critical appraisal of the use of microRNA data in phylogenetics. *Proceedings of the National Academy of Sciences, USA*. 111:E3659-E3668
 - profiled in *Nature* News (Maxmen 28 July 2014) and *PNAS* Commentary (Dunn 2016)
23. Long EC, **RC Thomson**, AM Shapiro. 2014. A time-calibrated phylogeny of the butterfly tribe Melitaeini. *Molecular Phylogenetics and Evolution*. 79:69-81
22. Spinks PQ, **RC Thomson**, M Gidis, HB 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
21. Spinks PQ, **RC Thomson**, HB 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
20. Shaffer HB, P Minx, DE Warren, AM Shedlock, **RC Thomson**, N Valenzuela, J Abramyan, D Badenhorst, KK Biggar, GM Borchert, CW Botka, RM Bowden, EL Braun, AM Bronikowski, BG Bruneau, LT Buck, B Capel, TA Castoe, M Czerwinski, KD Delehaunty, SV Edwards, CC Fronick, MK Fujita, L Fulton, TA Graves, RE Green, W Haerty, R Hariharan, LW Hillier, AK Holloway, D Janes, FJ Janzen, C Kandoth, L Kong, APJ de Koning, Y Li, R Literman, SE McGaugh, L Mork, M OLaughlin, RT Paitz, DD Pollock, CP Ponting, S Radhakrishnan, BJ Raney, JM Richman, J St. John, T Schwartz, A Sethuraman, PQ Spinks, KB Storey, N Thane, T Vinar, LM Zimmerman, WC Warren, ER Mardis, and RK Wilson. 2013. The western painted turtle genome, a model for the evolution of extreme physiological adaptations in a slowly evolving lineage. *Genome Biology*. 14: R28

19. Spinks PQ, **RC Thomson**, GB Pauly, CE Newman, G. Mount, HB Shaffer. 2013. Misleading phylogenetic inferences based on single-exemplar sampling in the turtle genus *Pseudemys*. *Molecular Phylogenetics and Evolution*. 68:269-281
18. Lambert MR, SN Nielsen, AN Wright, **RC Thomson**, HB Shaffer. 2013. Microhabitat characteristics favor introduced red-eared sliders over threatened western pond turtles in a human-dominated landscape. *Chelonian Conservation and Biology*. 12: 192-199
17. Spinks PQ, **RC Thomson**, Y Zhang, J Che, Y Wu, HB Shaffer. 2012. Species boundaries and phylogenetic relationships in the critically endangered Asian box turtle genus *Cuora*. *Molecular Phylogenetics and Evolution*. 63: 656-667
16. Spinks PQ, **RC Thomson**, B Hughes, B Moxley, RM Brown, A Deismos, HB 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
15. Holzman R, DC Collar, SA Price, CD Hulsey, **RC Thomson**, PC Wainwright. 2012. Biomechanical trade-offs bias rates of evolution in the feeding apparatus of fishes. *Proceedings of the Royal Society Series B*. 279: 1287-1292
14. Johnson JR, **RC Thomson**, SJ Micheletti, HB Shaffer. 2011. The origin of tiger salamander populations in California: Introductions or relicts? *Conservation Genetics*. 12: 355-370
13. **Thomson RC**, PQ Spinks HB Shaffer. 2010. Distribution and abundance of exotic 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
12. **Thomson RC**, HB Shaffer. 2010. Rapid progress on the vertebrate tree of life. *BMC Biology*. 8: 19
11. **Thomson RC**, IJ Wang, JR Johnson. 2010. *Invited Review*: Genome-enabled development of molecular markers for ecology, evolution, and conservation. *Molecular Ecology*. 19: 2184-2195
10. Spinks PQ, **RC Thomson**, AJ Barley, HB Shaffer. 2010. Testing avian, squamate, and mammalian nuclear markers for cross amplification in turtles. *Conservation Genetics Resources*. 2:127129
9. Barley AJ, PQ Spinks, **RC Thomson**, HB Shaffer. 2010. Fourteen nuclear genes provide phylogenetic resolution for difficult nodes in the turtle tree of life. *Molecular Phylogenetics and Evolution*. 55: 1189-1194
8. **Thomson RC**, HB Shaffer. 2010. Sparse Supermatrices for Phylogenetic Inference: Taxonomy, Alignment, Rogue Taxa, and the Phylogeny of Living Turtles. *Systematic Biology*. 59: 42-58

7. Spinks PQ, **RC Thomson**, HB 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
6. **Thomson RC**. 2009. PhyLIS: a simple Gnu/Linux distribution for phylogenetics and phyloinformatics. *Evolutionary Bioinformatics*. 5: 91-95
5. Spinks PQ, **RC Thomson**, GA Lovely and HB Shaffer. 2009. Assessing what is needed to resolve a molecular phylogeny: simulations and empirical data from emydid turtles. *BMC Evolutionary Biology*. 9: 56
4. Spinks PQ, **RC Thomson**, HB Shaffer. 2009. A reassessment of *Cuora cyclornata* Blanck, McCord and Le, 2006 (Testudines, Geoemydidae) and a plea for taxonomic stability. *Zootaxa*. 2018: 58-68
3. **Thomson RC**, AM Shedlock, SV Edwards, HB Shaffer. 2008. Developing markers for multilocus phylogenetics in non-model organisms: a test case with turtles. *Molecular Phylogenetics and Evolution*. 49: 514-525
2. Iverson JB, RM Brown, TS Akre, TJ Near, M Le, **RC Thomson**, DE Starkey. 2007. In search of the tree of life for turtles. in *Defining Turtle Diversity: Proceedings of a workshop on genetics, ethics, and taxonomy for tortoises and freshwater turtles*. HB Shaffer, NN Fitzsimmons, A Georges, AGJ Rhodin, Eds. *Chelonian Research Monographs* 4: 85-106
1. Shaffer HB and **RC Thomson**. 2007. Delimiting species in recent radiations. *Systematic Biology* 56: 896-906

OTHER
PUBLICATIONS

Thomson RC. Here be (Gila) monsters. Desert Oracle. Spring 2016: 17-19

- GRANTS 2018-2021 NSF DEB Collaborative Research: Species delimitation, hybridization and the origin of parthenogenesis in Whiptail lizards (*Aspidooscelis*) (PI: Robert Thomson, Co-PI: Tod Reeder). \$752,179
- 2015-2018 Arnold and Mabel Beckman Foundation Postdoctoral Fellowship (Postdoctoral Fellow: Anthony Barley, Mentor: Robert Thomson) \$184,172
- 2014-2017 NSF DBI Collaborative Research: ABI Innovation: A Bayesian Evolutionary Tree Analysis Database (PIs: Brian Moore, Robert Thomson). \$549,728
- 2014-2017 NSF DEB Collaborative Research: Bayesian model checking for phylogenetics in the post-genomic era (PI: Jeremy Brown, Co-PI: Robert Thomson). \$600,208
- 2008 California Department of Fish and Game "Determining Management Units for the Western Pond Turtle (*Emys marmorata*)" \$118,575 (Senior Investigator with HB Shaffer and PQ Spinks)

- 2008 California Department of Fish and Game “Amphibian and Reptile Species of Special Concern in California” \$96,297
(Senior Investigator with HB Shaffer)
- 2008 UC Davis graduate student award in engineering and computer science \$8,106
- 2008 UC Davis Biological invasions NSF IGERT research award “The impact of exotic turtles on an endangered native: Melding research and education” \$500
- 2007 Society of Systematic Biologists Graduate Student Award “Genomic perspective on systematics of the map turtles (*Graptemys*)” \$1,650
- 2007 NSF DEB Doctoral Dissertation Improvement Grant: Systematics of rapid radiations: New approaches in the post-genomic age. \$12,000
- 2005-2007 UC Davis competitive grants in support of research and travel, 6 awards \$5,025 total
- 2003 Rochester Academy of Science undergraduate research grant \$500
- AWARDS & HONORS
- 2015 University of Hawaii Regent’s Medal For Excellence in Research (Assistant Professor Level)
- 2010 UC Davis Merton Love Award for outstanding dissertation in evolution and ecology
- 2004 Rochester Institute of Technology Baldwin Award for outstanding undergraduate in the life sciences
- INVITED SEMINARS & SYMPOSIA
- Evolution Conference June 2017
- Society of Systematic Biology Spotlight “Uncertainty in the face of strong support: new approaches and examples in the identification of signal, noise, and conflict in phylogenetic datasets”
- Hawaii Institute of Marine Biology February 2017
- Symposium on Conservation Genetics
- Louisiana State University Museum of Natural Science September 2016
- Society for Study of Amphibians and Reptiles July 2015
- Symposium “Frontiers in Integrative Organismal Biology: Herpetological Horizons”
- Hawaii Institute of Marine Biology October 2012
- University of Hawaii. Department of Biology March 2011
- University of New Mexico. Department of Biology October 2010

Merton Love Award Seminar. UC Davis June 2010

Evolution Conference June 2009
 Symposium “Ernst Mayr Student Research Symposium”

CSU, Chico. Department of Biological Sciences October 2008

Society for Integrative and Comparative Biology January 2008
 Symposium: “Reptile genomics and evolutionary genetics”

Powdermill freshwater turtle conference August 2006

Evolution Conference June 2006
 Symposium: “Species delimitation: new approaches for discovering diversity”

Museum of Comparative Zoology, Harvard University August 2005
 Symposium: “Defining Turtle Diversity”

CONTRIBUTED
 PRESENTATIONS
 & POSTERS
 (LAST 5 YEARS
 ONLY)

Shaffer HB, **RC Thomson**, J Vu. A global phylogeny of turtles and how it informs conservation planning. 2017 Evolution

Campillo LC, AJ Barley, **RC Thomson**. Using a classic speciation data set to test coalescent methods for species delimitation. 2017 Evolution

Coghill L, A Schoonmaker, L Rodriguez, **RC Thomson**, JM Brown. The effect of heterotachy on phylogenomics. 2017 Evolution

Barley AJ, A Nieto-Montes de Oca, **RC Thomson**. Elucidating the evolutionary history of Mexican whiptail lizards. 2017 Evolution

Kliman RM, LS Maroja, SA Price, JJ Smith, **RC Thomson**. EvoED Digital Library: SSE’s education resource. Poster. 2016 Evolution

Brown JM, **RC Thomson**. Climbing peaks and crossing valleys: Metropolis coupling and rugged phylogenetic distributions. 2016 Evolution

Hime P, +21 co-authors. Phylogenomics of Amphibia and the Nature of Support and Signal in Big Data Sets. 2016 Evolution

Coghill LM, Brown JM, **RC Thomson**. Big data and outlier loci: A cautionary tale with genome-scale phylogenetic data. 2016 Evolution

Barley AJ, **RC Thomson**. Species delimitation’s new conceptual roots. 2016 Evolution

Richards EJ, AJ Barley, JM Brown, RA Chong, **RC Thomson**. An empirical assessment of model performance tests in phylogenetics. 2016 Evolution

Thomson RC, PQ Spinks, HB Shaffer, AJ Barley. Phylogeny of the Map Turtles (*Graptemys*). 2016 Joint Meeting of Ichthyologists and Herpetologists

Wishingrad V, AJ Barley, **RC Thomson**, AN Wright. Evidence-based threat assessment: lessons from California herpetofauna. Poster. 2016 Joint Meeting of Ichthyologists and Herpetologists

Nieto-Montes de Oca, A, AJ Barley, RN Meza-Lázaro, UO García-Vázquez, JG Zamora-Abrego, **RC Thomson**, AD Leaché. Phylogenomics of the knob-scaled lizards (*Xenosaurus*). 2016 Joint Meeting of Ichthyologists and Herpetologists

AN Wright, GB Pauly, AJ Barley, **RC Thomson**. Historical Resurveys of Lizard Communities in the Mojave Desert. 2016 Joint Meeting of Ichthyologists and Herpetologists

Dong CM, T Engstrom, **RC Thomson**. Origins of softshell turtles in Hawaii with considerations for conservation. 2015 Society for Study of Amphibians and Reptiles

Brown JM, **RC Thomson**. Comparing the amount and quality of information from different phylogenomic sequencing strategies: a case study with amniotes. 2015 Evolution

Barley AJ, **RC Thomson**. Substitution models and genetic distances: posterior predictive assessments of model adequacy in DNA barcoding. 2015 Evolution

Spinks PQ, **RC Thomson**, HB Shaffer. Turtles of the World: Global Systematics for an Imperiled Clade. 2013 Turtle Survival Alliance

Thomson RC, DC Plachetzki, DL Mahler, BR Moore. Estimating phylogeny from microRNA data: a critical appraisal. 2013 Evolution

Shaffer HB, J Abramyan, P Minx, **RC Thomson**. The first turtle genome. 2013 JMIH

Brown JM, **RC Thomson**. Genomic data reveal widespread uncertainty and variation in the phylogenetic placement of turtles. Poster. 2013 Society for Molecular Biology and Evolution

TEACHING

Instructor

ZOOL171 Fall 2018
Introductory Biology

ZOOL780 & ZOOL781 alternate years, Spring 2015—Present
Foundations of Evolution and Ecology

ZOOL719 alternate years, Spring 2014—Present
Scientific Teaching Tools for Active Learning

ZOOL480 Spring 2012—Present
Evolutionary Biology

ZOOL691B Seminar Fall 2017, Fall 2018
Phylogenetics and Speciation

ZOOL691B Seminar Fall 2015
Bioinformatics Data Skills

ZOOL691B Seminar Spring 2013
Statistical Phylogenetics: Problems, Prospects and Practice

Workshop Instruction

Phylogenomics Workshop 2019
Transmitting Science workshop in Valencia, Spain (*upcoming*)

Workshop in Applied Phylogenetics 2007—Present
Held annually at Bodega Marine Lab, Bodega Bay, CA

Phylogenomics workshop for Edwin W. Pauley Program 2013
Held at Hawaii Institute for Marine Biology, Kaneohe, HI

Workshop in High Performance Computing for Phylogenetics 2010
Held at NIMBioS, Knoxville, TN

SERVICE

Committees

SSB, Nominations Committee 2015—2018
NSF Review Panels 2015 (two)
UH Biology, Dept. Executive Personnel Committee, elected 2018—2019
UH Biology, Chair's Advisory Comm., elected Assoc. Prof. 2017—2018
UH Biology, Chair's Advisory Comm., elected Assis. Prof. 2015—2016
UH Cyberinfrastructure Advisory Committee 2014—Present
Painted Turtle Genome Steering Committee 2010—2013

Editing and reviews

Associate Editor, Systematic Biology 2017—Present
Editorial Board, SSE EvoEd Digital Library 2016—Present

Reviewer for Journals

Aquatic Invasions, Asian Herpetological Research, Biological Conservation, Biology Letters, BMC Bioinformatics, Briefings in Bioinformatics, Chelonian Conservation & Biology, Conservation Biology, Conservation Genetics, Conservation Genetics Resources, Diversity and Distributions, Ecology, Endangered Species Research, Herpetologica, Journal of Evolutionary Biology, Journal of Herpetology, Molecular Ecology, Molecular Ecology Resources, Molecular Phylogenetics & Evolution, Organisms: Diversity & Evolution, Phyllomedusa, PLoS One, Proceedings of the Royal Society B, Systematic Biology, Zoology

Reviewer for Agencies

California Department of Fish & Wildlife, National Science Foundation,
US Fish & Wildlife Service

Symposia and Event Organization

New Measures of Phylogenetic Support for the Genomic Era 2019
SSB symposium at Evolution Conference in Providence, RI (*upcoming*)

Comparing phylogenetic trees: Why and How? 2018
Symposium at Evolution Conference in Montpellier, France

Tester Symposium, UHM Biology 2013—2015

Other

Editor, TreeThinkers blog 2013—2018

Event Coordinator, California State Science Olympiad 2009

Web Admin, Bodega Bay Phylogenetics Wiki 2008—2013

Protocol Author, RIT Center for Bioscience Edu. and Tech. 2004

Team Leader, Great Lakes Marsh Monitoring Program 2001—2004

PROFESSIONAL SOCIETIES

Society of Systematic Biologists

Society for the Study of Evolution

Society for the Study of Amphibians and Reptiles

IUCN Species Survival Commission—Tortoise and Freshwater Turtle Specialist
Group

Partnership for Undergraduate Life Science Education

ADVISING

Postdoctoral

Anthony Barley (current), Sean Harrington (current)

Graduate Students

Valentina Alvarez (MS current); Luke Campillo (PhD current); Caroline
Dong (MS 2015); Emilie Richards (MS 2016); Van Wishingrad (PhD
current)

Graduate Student Committees

Jacob Buehler (MS 2016), Jared Bernard (MS current); Sean Canfield
(PhD current), Richard Coleman (PhD current); Mike Henley (PhD
current); Derek Kraft (PhD current); Aki Laruson (PhD 2018); Claire
Lewis (PhD Current); Jessica Maxfield (PhD current); Randi Riggs (MS
2016); Julio Rivera (PhD 2017); Michael San Jose (PhD 2018); Robyn
Screen (PhD current); Kaho Tisthammer (PhD 2017); Kirill Vinnikov
(PhD current); Ellen Waldrop (MS 2013); Christie Wilcox (PhD 2014);
Melissa Van Kleek (PhD 2015)

Undergraduate Students

Hana Blatter (UH 2014); Sam Fisher (UH 2015); Max Lambert (UCD 2010); Ann Marsolais (UH 2015); Sharell Nielsen (UCD 2010); Evan Padro (UH 2015); Riley Parks (UH current); Melissa Seymour (UH 2018); Maya Shaulsky (UH 2018); Preston Varley (UH 2017); Ian Wright (UCD 2007)