

W. Brian Simison

Associate Curator & Director Center for Comparative Genomics
California Academy of Sciences
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Education:

University of California, Berkeley, California, Ph.D. in Integrative Biology (2000).

University of California, San Diego, California, B.A. in Animal Physiology (1985).

Research & Professional Experience:

Asst. Curator and Director of the Center for Comparative Genomics, California Academy of Sciences. San Francisco, California (2007-current).

Research Professor, San Francisco State University (2008-current).

Postdoctoral Studies –

Visiting Postdoctoral Researcher, UC Berkeley and Joint Genome Institute, Walnut Creek, CA (June 2001-2005). Gastropod Mitochondrial Genome Project. Mitochondrial genome sequencing of exemplar taxa of the major clades of gastropods using long PCR, rolling circle amplification, and shotgun sequencing.

Post Doctoral Fellow, Australian Museum, Sydney Australia (2001). Investigation of the phylogenetic content of molecular morphology (2° and 3° structure of ribosomes).

Other –

System Administrator, database development and implementation, Webdesign (HTML, Javascript, Perl, “HEITML”), UC Museum of Paleontology (1993-2000).

Graduate Student, UC Berkeley. DNA extraction, amplification, and sequencing.

Investigation of phylogenetic methods for molecular data sets. Development of new methods for the analysis of phylogeography (1993-2000).

Production Manager, HTI Bio-products, Ramona California, Optimization of specific polyclonal antibody production and optimization of antigen and antibody detection (1990-1992).

Immunochemist, Calbiochem, La Jolla, California, Polyclonal antibody production and purification (1987-1990).

Awards:

Best Student Presentation, *Molecular Phylogeography of the Eastern Pacific and Caribbean Patellogastropoda*, 65th Annual Meeting of the American Malacological Society Pittsburgh, Pennsylvania, U.S.A. (4-9 July 1999).

UC Museum of Paleontology D.K. Palmer Prize (1999).

Funding:

CDFW – SWG: Conservation assessment of four newly discovered endemic species of California legless lizard (*Anniella* sp.). **\$125,137**. Tennant, E, Parham JF, **Simison, WB**, Papenfuss, T. (2015-1017).

NSF-MRI: Acquisition of a Next-Generation Sequencer for a Shared Genomics Core Facility at San Francisco State University and the California Academy of Sciences. **\$514,263**. De la Torre, JR., **Simison, WB**, Swei, A., Kapan, DD., Stillman, J. (2014-2020).

California State University Program for Education and Research in Biotechnology (CSUPERB): Sequencing and bioinformatics of slider turtle genomes: A system for evolutionary studies, conservation, and student opportunity. **\$14,704.84**. Parham JF., **Simison, WB**. (2014-2017).

NSF - CSBR: Natural History Collections: Liquid Nitrogen Facilities for Biological Specimen Curation and Research at the California Academy of Sciences, **\$178,937**. **Simison, WB.**, Dumbacher, J. & Vindum, J. (2012-2015).

California Academy of Sciences, various “In-House” awards (2009-2014).

UC Museum of Paleontology Graduate Student Research Awards, \$20,000 (1995-1998).

Integrative Biology Summer Research Award, \$5,000 (1997).

Hawaiian Malacological Society Scholarship Grant, \$2,500 (July 1995).

Graduate Opportunity Fellow, University of California, Berkeley, ~\$48,000 (1993-1995).

Private funding:

\$120,000 (2015) from Jim Henderson for the Illumina MiSeq DNA sequencer. Worked with Doria Leong in Development to foster a working relationship with Jim.

\$5,000 (2015) from Jim Henderson to help fund the “Angelfish Genome Project”

\$30,000 (2015) from Jim Henderson to purchase the DNA Shearing M220 Covaris Focused-ultrasonicator™.

Publications:

2016

Joshua Hallas, **W. Brian Simison** and Terrence M Gosliner (2016). Dating and biogeographical patterns in the sea slug genus *Acanthodoris* Gray, 1850 (Mollusca, Gastropoda, Nudibranchia). *Molecular Phylogenetics and Evolution* 97, 19-31.

Peter W. Fritsch, Boni C. Cruz, **W. Brian Simison**, Alexandra J. Campbell, and Jennifer K. Harris (2016). Early Phylogenetic Divergence of Gynodioecious Species Warrants the Recognition of Subseries in *Styrax* Series *Valvatae*. *Systematic Botany* 40(4):1081-1092. 2015 doi: <http://dx.doi.org/10.1600/036364415X690120>

2015

Peter W. Fritsch, Boni C. Cruz, **W. Brian Simison**, Alexandra J. Campbell and Jennifer K. Harris (2015). Early Phylogenetic Divergence of Gynodioecious Species Warrants the Recognition of Subseries in *Styrax* Series *Valvatae*. *Systematic Botany* 40 (4).

Michael F Palopoli, Daniel J Fergus, Samuel Minot, Dorothy T. Pei, **W. Brian Simison**, Iria Fernandez-Silva, Megan S Thoemmes, Robert R. Dunn, Michelle Trautwein (2015). Global divergence of the human follicle mite *Demodex folliculorum*: Persistent associations between host ancestry and mite lineages, *Proceedings of the National Academy of Sciences* 112 (52), 15958-15963.

James F. Parham, Theodore J. Papenfuss, James R. Buskirk, Gabriela Parra-Olea, Jei-Ying Chen, and **W. Brian Simison** (2015). *Trachemys ornata* or not ornata: Reassessment of a Taxonomic Revision for Mexican *Trachemys*. *Proceedings of the California Academy of Sciences*. Series 4, Volume 62, Part 2, No. 12, pp. 359–367.

Nicholas G Crawford, James F Parham, Anna B Sellas, Brant C Faircloth, Travis C Glenn, Theodore J Papenfuss, James B Henderson, Madison H Hansen, **W Brian Simison** (2015). A phylogenomic analysis of turtles. *Molecular phylogenetics and evolution* 83, 250-257. doi:10.1016/j.ympev.2014.10.021.

Michelle R. Gaither, Moisés A. Bernal, Richard R. Coleman, Brian W. Bowen, Shelley A. Jones, **W. Brian Simison**, Luiz A. Rocha. (2015). Genomic signatures of geographic isolation and natural selection in coral reef fishes. *Molecular Ecology*. DOI: 10.1111/mec.13129.

Ricardo Faustino de Lima, **W. Brian Simison**, Eden Maloney, Robert Drewes (2015). Reassessing the conservation status of *Crocidura thomensis*, endemic to São Tomé Island. *Oryx*. 1-4. DOI: <http://dx.doi.org/10.1017/S003060531400091X>

2014

Luiz Rocha, ..., **W. Brian Simison**, et al. (2014) Specimen collection: an essential tool. *Science* 344 (6186), 814.

2013

James F Parham, Theodore J Papenfuss, Peter Paul van Dijk, Byron S Wilson, Cristian Marte, Lourdes R Schettino, **W Brian Simison** (2013). Genetic introgression and hybridization in Antillean freshwater turtles *Trachemys* revealed by coalescent analyses of mitochondrial and cloned nuclear markers. *Mol Phylogenet Evol.* Jan 23;67(1):176-187. doi: 10.1016/j.ympev.2013.01.004.

W Brian Simison, Anna B Sellas, Kevin A Feldheim, James F Parham (2013). Isolation and characterization of microsatellite markers for identifying hybridization and genetic pollution associated with red-eared slider turtles (*Trachemys scripta elegans*). *Conservation Genetics Resources*, 1-2.

Dana Carrison-Stone, Robert Van Syoc, Gary Williams, **W. Brian Simison** (2013). Two new species of the gorgonian inhabiting barnacle, *Conopea* (Crustacea, Cirripedia, Thoracica), from the Gulf of Guinea. *ZooKeys* 270: 1–20, doi: 10.3897/zookeys.270.3736

- Simison, W.B.** and Boore, J. (2010). Molluscan Evolutionary Genomics. In Phylogeny and Evolution of the Mollusca. (W. F. Ponder & D. R. Lindberg, eds.), University of California Press, Berkeley, CA.
- Huffard, C.L., Saarman, N., Hamilton, H., **Simison, W.B.** (2010). The evolution of conspicuous facultative mimicry in octopus (*Thaumoctopus mimicus* Norman & Hochberg, 2005): an example of secondary adaptation? *Biological Journal of the Linnean Society*, 101:68-77.
- Bethany K Kimokeo, Zoltan Szabo, Norah P Saarman, **W Brian Simison**, Keith Martin-Smith, Abby Barrows, Mark Baine, Sara Lourie, Robert J Toonen, Healy Hamilton (2009). Taxonomy and Phylogeography of *Hippocampus kuda* in Hawaii. *Integrative and Comparative Biology*, 49, E254-E254.
- Simison, W.B.** Lindberg, D. R. and Boore, J. (2007). Rolling circle amplification of metazoan mitochondrial genomes. *Molecular Phylogenetics and Evolution*, 39:562-567.
- Simison, W.B.** (2006). Patterns of endemism for nearshore gastropod molluscs: A new view of the Gulf of California. *Journal of Molluscan Studies*, 72: 53-63.
- Shi, H., Parham, J.F., **Simison, W.B.** J. Wang, J., Gong, S. and Fu, B. (2005). A report on the wild hybridization between two species of threatened Asian box turtles (Testudines: *Cuora*) on Hainan Island, China. *Amphibia-Reptilia. Amphibia-Reptilia* 26(3):377-381
- Espez, C, Lindberg, D. R., Castilla, J. C., and **Simison, W. B.** (2004). Intertidal limpets of Chile and Peru. *Revista Chilena de Historia Natural*. 77(2):257-283.
- Simison, W. B.** Lindberg, David R. (2003). On the identity of *Lottia strigatella* (Carpenter, 1864) (Patellogastropoda:Lottidae). *The Veliger*, 46:1-19.
- Simison, W. B.** (2002). Plate Tectonics. *Encyclopedia of Global Environmental Change. The Earth System: Physical & Chemical Dimensions of Global Environmental Change*. 1:605-606.
- Parham, J. F., **Simison, W. B.**, Kozak, K. H. Feldman, C. R., (2001). New Chinese turtles: Endangered or invalid? A reassessment of two species using mitochondrial DNA, allozyme electrophoresis and known-locality specimens. *Animal Conservation*, 4:357-457.
- JF Parham, **WB Simison**, KH Kozak, CR Feldman (2000). A reassessment of some recently described Chinese turtles. *American Zoologist* 40 (6), 1163-1163
- Simison, W. B.** Lindberg, D. R. (1999). Morphological and molecular resolution of a putative cryptic species complex: A case study of *Notoacmea fascicularis* (Menke, 1851) (Gastropoda: Patellogastropoda). *Journal of Molluscan Studies*, 65:99-109.

Broader impacts:

2015 Invited presentations:

December 3, 2014, 8:00 AM – CAS all staff meeting “introduction to the Center for Comparative genomics” - W. Brian Simison

December 3, 2014, 4:00 PM – CAS all staff meeting “introduction to the Center for Comparative genomics” - W. Brian Simison

March 25, 2015 – UC Berkeley – Careers for Life Sciences - W. Brian Simison

April 7, 2015 – Sonoma State University, SSU Biology Colloquium Series– “A Phylogenomic analysis of turtles” - W. Brian Simison

April 14, 2015 – Stanford Genomics Lab - Porter Drive Seminar Series – “Whole genome population genomics for non-model organisms” - W. Brian Simison

June 10, 2015 – CAS CiS Interns presentation - W. Brian Simison

2015 Conference Presentations

June 29, 2015 – Evolution Conference Garuja Brazil. – “Asymmetrical introgression in Trachemys turtles” - W. Brian Simison

Teaching Experience-

Instructor,

Biology 862 (Current Topics in Evolution), SFSU (Fall 2009, Fall 2010)

Biology 11 (General Biology), UC Berkeley (Spring 2006).

Graduate Student Instructor,

IB 200 (Phylogenetics), UC Berkeley, Spring (1998).

Biology 1B (General Biology), UC Berkeley (1993- 1996).

Graduate Student Mentor, Molecular Phylogenetics Laboratory. UC Museum of Paleontology. (1995-2000).

Mentoring-

- My one-on-one mentoring of grad students and postdocs has been very rewarding and beneficial to IBSS PIs. The following list is just a few of the more recent students that are still around and available for endorsement statements (Liz, Moises and Shayle have all agreed to write letters on my behalf):
 - Marcel Talla Kouete – Cameroon Masters student SFSU
 - Kyle Sirovy – CS Fullerton undergrad
 - Joshua Rodriguez – CS Fullerton undergrad
 - Liz Carlen - lcarlen@gmail.com

- Moises Bernal - bernal.moises@gmail.com
- Shayle Matsuda - shaylematsuda@gmail.com
- Josh Hallas - joshua.hallas@gmail.com
- Dana Carrison - DCarrison-Stone@calacademy.org
- Cerise Chen - cerisechen@gmail.com
- Noel Graham - synapsida@gmail.com
- Eva Salas - salas.e@gmail.com
- Norah Saarman - nosaarman@gmail.com
- Michelle Gaither (postdoc) - michellergaither@gmail.com
- Darin Penneys (postdoc) - dpenneys@yahoo.com
- Gilberto Ocampo (postdoc) - gocampo@calacademy.org
- Madison Hansen (SSI) - madhayhansen@gmail.com
- Leila Carmona Barnosi - laviejasirena_nur@hotmail.com
- Yolanda Camacho - ycamachogarcia@gmail.com