AUSTIN H. PATTON

March, 2022

Museum of Vertebrate Zoology &
Department of Integrative Biology
University of California, Berkeley
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austinhpatton@berkeley.edu

EDUCATION

Washington State University, Pullman, Washington
Ph.D., Biology – Defended 4/9/2020
GPA 4.00/4.00

Warren Wilson College, Asheville, North Carolina
B.S., Biology & Environmental Studies, concentration in Conservation Biology
GPA 3.59/4.00

PROFESSIONAL EXPERIENCE

Undergraduate: †

POST-DOCTORAL POSITIONS

2021- **NSF Postdoctoral Fellow, Christopher Martin's Lab – University of California, Berkeley**
2020-2021 **Postdoctoral scholar, Christopher Martin's Lab – University of California, Berkeley**

TEACHING

2017-2018 **Teaching assistant, Biology for Non-majors – Washington State University**
2016-2017 **Teaching assistant, Biology for Non-majors – Washington State University**
2015-2016 **Teaching assistant, Ecology – Washington State University**
2014-2015 **Teaching assistant, Biology for Non-majors – Washington State University**
2014 † **Teaching assistant, Conservation Genetics – Highlands Biological Station**
2013-2014 † **Teaching assistant, Conservation Genetics – Warren Wilson College**
2012 † **Teaching assistant, Field ornithology – Warren Wilson College**

GENERAL

2013-2014 † **Genetics lab manager, Warren Wilson College**
2013 † **National Science Foundation Research Experience for Undergraduates Samford University**
2012 † **Rotating field intern, Project Puffin, Audubon Society**

AWARDS & GRANTS

Undergraduate: †

2021 ***Postdoctoral Research Fellowship in Biology* – National Science Foundation** ($138,000)

2020 ***Doctoral Student Achievement Award: Sciences – Washington State University College of Arts and Sciences***

2019 ***Brislawn Graduate Fellowship in Biological Sciences – Washington State University Graduate Program committee*** ($3000)

2018 ***King Graduate Scholarship – Washington State University Graduate Program committee*** ($2000)

2015-2019 ***Elling Foundation Award for Off-Campus Training and Research – Washington State University*** ($3221, $4677, $1190, $2000, $218, Co-PI A. Storfer)

2013 ***Research Experience for Undergraduates*† – *National Science Foundation*** ($4200)

2013 ***Yarborough Grant*† – *North Carolina Academy of Sciences*** ($567)

2012, 2013 ***Pugh Endowed Fund for Undergraduate Research in the Division of Natural Science & Math*† – *Warren Wilson College*** ($854, $2000, Co-PI J.J. Apodaca)

PUBLICATIONS

Undergraduate: †

PUBLISHED

Tejero-Cicuéndez H., **Patton, A.H.**, Caetano, D.S., Šmíd, J., Harmon, L.J., Carranza, S., 2022. Reconstructing squamate biogeography in Afro-Arabia reveals the influence of a complex and dynamic geologic past. *Systematic Biology, 71(2)*, pp. 261-272.

Patton, A.H., Harmon, L.J., del Rosario Castañeda, M., Frank, H.K., Donihue, C.M., Herrel, A., Losos, J.B., 2021. When adaptive radiations collide: different evolutionary trajectories between and within island and mainland lizard clades. *Proceedings of the National Academy of Sciences, 118 (42)*, e2024451118.

Kozakiewicz, C.P., Fraik, A.K., **Patton, A.H.**, Ruiz-Aravena, M., Hamilton, D.G., Hamede, R., McCallum, H., Hohenlohe, P.A., Margres, M.J., Jones, M.E., Storfer, A., 2021. Spatial variation in gene expression of Tasmanian devil facial tumors despite minimal host transcriptomic response to infection. *BMC Genomics, 22(1)*, pp. 1-19.

Stahlke, A., Epstein, B., Barbosa, S., **Patton, A.H.**, Hendricks, S., Veillet, A., Fraik, A., Schönfeld, B., McCallum, H., Hamede, R., Jones, M., Storfer, A., Hohenlohe, P., 2021. Contemporary and historical selection in Tasmanian devils (Sarcophilus harrisii) support

novel, polygenic response to transmissible cancer. *Proceedings of the Royal Society B, 288(1951)*, 20210577.

Patton, A.H., Lawrance, M., Margres, M.J., Kozakiewicz, C.P., Hamede, R., Ruiz-Aravena, M., Hamilton, D.G., Comte, S., Ricci, L., Taylor, R., Stadler, T., Leaché, A., McCallum, H., Jones, M., Hohenlohe, P.A., Storfer, A., 2020. A transmissible cancer shifts from emergence to endemism in Tasmanian devils. *Science, 370(6522)*, eabb9772.

Rogers, J., **Patton, A.H.**, Harmon, L., Lex, A., Meyer, M., 2020. Insights from experiments with rigor in an EvoBio design study. *IEEE Transactions on Visualization and Computer Graphics, 27(2)*, pp.1106-1116.

Smith, L., Jones M.E., Hamede, R., Risques, R., **Patton, A.H.**, Carter P.A., Storfer, A., 2020. Telomere length is a susceptibility marker for Tasmanian devil facial tumor disease. *EcoHealth, 17(3)*, pp.280-291.

Kozakiewicz, C.*, Ricci, L.*, **Patton, A.H.**, Hendricks, S., Brunner, J., Goldberg, C., Ruiz- Aravena, M., McCallum, H., Hamede, R.K., Jones, M.E., Hohenlohe, P.A., Storfer, A., 2020. Comparative landscape genetics of Tasmanian devils and devil facial tumor disease. *Molecular Ecology, 29(17)*, pp.3217-3233.
*****Authors contributed equally

Margres, M.J., Ruiz-Aravena, M., Hamede R.K., Kusum C., **Patton, A.H.**, Lawrance, M.F., Fraik, A.K., Stahlke, A.R., Davis, B.W., Ostrander, E.A., Jones, M.E., McCallum, H., Paddison, P.J., Hohenlohe, P.A., Hockenbery, D. Storfer, A., 2020. Spontaneous tumor regression in Tasmanian Devils associated with RASL11A activation. *Genetics, 215*(4), pp.1143-1152.

Patton, A.H., Margres, M.J., Epstein, B., Eastman, J., Harmon, L.J., Storfer, A., 2020. Hybridizing salamanders experience accelerated diversification. *Scientific Reports, 10*(6566).

Gillespie, R.G., Bennett, G.M., De Meester, L., Fleischer, R.C., Harmon, L.J., Hendry, A., Knope, M.L., Mallet, J., Martin, C., Parent, C.E., **Patton, A.H.**, Pfennig, K.S., Rubinoff, D., Schluter, D., Seehausen, O., Shaw, K., Stacy, E., Stervander, M., Stroud, J.T., Wagner, C., Wogan, G.O.U., 2020. Comparing adaptive radiations across space, time, and taxa. *Journal of Heredity, 111*(1), pp.1-20.

Bakkegard, K.A., **Patton, A.H.**†, Ray, C.H., 2019. Chigger Mites (*Hannemania CF. dunni*) infect Northern Slimy Salamanders (*Plethodon glutinosus*) in Alabama. *Herpetological Conservation and Biology, 14*(3), pp.578-586.

Patton, A.H.*†, Apodaca, J.J.*****, Corser, J., Wilson, C., Williams, L.A., Wake, D.B., 2019. A new green salamander in the southern Appalachians: evolutionary history of *Aneides aeneus* and implications for management and conservation with the description of a cryptic microendemic species. *Copeia, 107*(4), pp.748-763.
*****Authors contributed equally

Patton, A.H., Margres, M.J., Hendricks, S., Stahlke, A.R., Lewallen, K., Hamede, R.K., Ruiz-Aravena, M., Ryder, O., McCallum, H.I., Jones, M.E., Hohenlohe, P.A., and Storfer, A. 2019. Contemporary demographic reconstruction methods are robust to genome assembly

quality: A case study in Tasmanian Devils. *Molecular Biology and Evolution, 36*(12), pp.2906-2921.

Margres, M.J., **Patton, A.H.**, Wray, K.P., Hassinger, A.T., Ward, M.J., Lemmon, E.M., Lemmon, A.R. and Rokyta, D.R., 2018. Tipping the scales: The migration–selection balance leans toward selection in snake venoms. *Molecular Biology and Evolution*, *36*(2), pp.271-282.

Margres, M.J., Ruiz-Aravena, M., Hamede, R., Jones, M.E., Lawrance, M.F., Hendricks, S.A., **Patton, A.H.**, Davis, B.W., Ostrander, E.A., McCallum, H. and Hohenlohe, P.A., 2018. The genomic basis of tumor regression in Tasmanian devils (*Sarcophilus harrisii*). *Genome Biology and Evolution*, *10*(11), pp.3012-3025.

Storfer, A., **Patton, A.H.**, & Fraik, A. K. 2018. Navigating the interface between landscape genetics and landscape genomics. *Frontiers in Genetics*, *9*, 68.

Storfer, A., Hohenlohe, P.A., Margres, M.J., **Patton, A.H.**, Fraik, A.K., Lawrance, M., Ricci, L.E., Stahlke, A.R., McCallum, H.I. and Jones, M.E., 2018. The devil is in the details: genomics of transmissible cancers in Tasmanian devils. *PLoS pathogens*, *14*(8), p.e1007098.

Marsh, D.M., Cosentino, B.J., Jones, K.S., Apodaca, J.J., … **Patton, A.H.**†, … Vonesh, J.R. 2017. Effects of roads and land use on frog distributions across spatial scales and regions in the Eastern and Central United States. *Diversity and Distributions*, *23*(2), pp.158-170.

IN REVIEW

Patton, A.H., Richards, E.J., Gould, K.J., Buie, L.K., Martin, C.H. Hybridization alters the shape of the genotypic fitness landscape, increasing access to novel fitness peaks during adaptive radiation. In review, *eLife*.

PRESENTATIONS

Undergraduate: †

2021 **University of California, Berkeley, Museum of Vertebrate Zoology Lunch Seminar: Talk.** *Navigating the micro- to macroevolutionary divide in radiations large and small.*

2020 **Washington State University: Talk.** *Applications of phylogenetic methods to the study of micro- and macroevolutionary diversification.*

2019 **Center for Theoretical Evolutionary Genetics at University of California, Berkeley: Invited Talk.** *Historical contingency in the evolution of a transmissible cancer.*

2019 **Evolution, Providence, Rhode Island: Poster.** *Contemporary demographic reconstruction methods are robust to genome assembly quality: A case study in Tasmanian Devils.*

2018 **American Genetics Association Symposium on the Origins of Adaptive Radiation, Waimea, Hawaii: Poster.** *Explosive early diversification of mainland anoles.*

2018 **Fred Hutch Cancer Research Center: Invited Talk.** *Phylodynamics of a transmissible cancer in Tasmanian devils.*

2017 **Evolution, Portland, Oregon: Talk.** *Hybridization accelerates speciation in salamanders.*

2016 **Special Highlands Conference on Plethodontid Salamander Biology, Highlands, North Carolina: Talk.** *Assessing the role of lineage hybridizability on diversification dynamics in salamander.*

2015 **6TH Conference on the Biology of Plethodontid Salamanders, Tulsa Oklahoma: Talk.** *Delimiting cryptic species in the Green salamander, Aneides aeneus, using ecological niche models, population genetics and phylogenetic reconstruction.*

2014 **Southeast Partners in Amphibian and Reptile Conservation (SEPARC), Jamestown, Kentucky: Poster.†** *Delimiting cryptic species in the Green salamander, Aneides aeneus, using ecological niche models, population genetics and phylogenetic reconstruction.*

2014 **North Carolina Academy of Sciences (NCAS), Raleigh, North Carolina: Talk.†** *Conservation genetics of the Green salamander (Aneides aeneus) in Western North Carolina.*

2013 **Samford University REU Final Symposium, Birmingham, Alabama: Talk.†** *Using geometric morphometric analyses to distinguish between two Slimy salamander species in Central Alabama.*

2012 **Gulf of Maine Seabird Working Group, Bremen, Maine: Talk.†** *Potential of landscape carpets for the enhancement of Tern nesting habitat.*

SERVICE/OUTREACH

2022 **Be A Scientist, Community Resources for Science – Willard Middle School, Berkeley, CA.** Mentored five 7th graders over the course of six weeks in conducting scientific experiments, from hypothesis development to experimental design, implementation, analysis and presentation.

2020-Present **Mentorship Working Group – Museum of Vertebrate Zoology, University of California, Berkeley.** Led efforts to better understand and provide resources to improve graduate student and postdoctoral mentorship culture within the Museum of Vertebrate Zoology.