

DAVID R. DAVERSA, PHD

La Kretz Center for California Conservation Science
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CAREER OBJECTIVES

I aim to advance scientific understanding and appreciation of ecology through academic research and teaching.

RESEARCH POSITIONS

LA KRETZ POSTDOCTORAL FELLOW, La Kretz Center for California Conservation Science, Institute for the Environment and Sustainability, University of California, Los Angeles, USA; 2021-Present

Research topic: Identifying and conserving wild animal populations threatened by disease, climate change, and human disturbance

POSTDOCTORAL RESEARCHER, National Great Rivers Research and Education Center (NGRREC), East Alton, Illinois, 62024, USA, 2016, 2020

Research topic: Intraspecific trait variation and trophic interactions in larval amphibian assemblages

POSTDOCTORAL RESEARCHER, Institute for Integrative Biology, University of Liverpool, Liverpool, United Kingdom, 2016-2019; joint position with the Institute of Zoology, Zoological Society of London (ZSL), London, United Kingdom

Research topic: The effects of host species composition and co-infection on multi-host parasite transmission

EDUCATION

PHD IN ZOOLOGY, Department of Zoology, University of Cambridge, Cambridge, United Kingdom, Oct. 2016; joint position with the Institute of Zoology, ZSL

Dissertation Title: Movement and parasitism in fragmented habitats.

BACHELOR OF SCIENCE IN FORESTRY, Summa Cum Laude with honors, May 2006

Virginia Polytechnic Institute and State University (Virginia Tech), Blacksburg, VA

GRANTS AND FELLOWSHIPS

WILD ANIMAL INITIATIVE RESEARCH FELLOWSHIP, 2023 (\$253,500)

MORRIS ANIMAL FOUNDATION TRAINING FELLOWSHIP, 2023 (\$135,000)

WILD ANIMAL INITIATIVE RESEARCH GRANT, 2023 (\$30,000)

LA KRETZ POSTDOCTORAL FELLOWSHIP, 2021 - 2023 (\$120,000 + research expenses)

RESEARCH COORDINATION NETWORK WORKSHOP SCHOLARSHIP, 2019 (\$1200)

UK NATURAL ENVIRONMENT RESEARCH COUNCIL STANDARD GRANT, 2016 (£635,949)

CAMBRIDGE TRUSTS PHD EXTENSION GRANT, 2014 (£12,000)

BALFOUR TRUST FUND AWARD (£9,270)

ST. JOHN'S COLLEGE RESEARCH AND LEARNING FUND, 2011 (£500)

CAMBRIDGE INTERNATIONAL SCHOLARSHIP, 2011 (£32,625 + tuition fees for 3 years)

US NATIONAL SCIENCE FOUNDATION GRADUATE RESEARCH FELLOWSHIP, 2011 (\$75,000 + 3-year tuition fees, declined)

FULBRIGHT SCHOLARSHIP, 2009 (\$14,000)

WILLIAM AUGUST STUERMAN SCHOLARSHIP, 2004 (\$12,000)

NATIONAL SCIENCE FOUNDATION RESEARCH EXPERIENCE FOR UNDERGRADUATES, 2005 (\$5,000)

HONORS

OUTSTANDING GLOBAL HEALTH MENTOR AWARD, School of Public Health, Washington University of St. Louis, 2020

DAVID W. SMITH AWARD FOR OUTSTANDING SERVICE, 2006, College of Natural Resources, Virginia Tech

GOLD KEY NATIONAL HONORS SOCIETY INDUCTEE, 2003

PUBLICATIONS

2023

DAVERSA, DR, J LLOYD-SMITH, G BUCCIARELLI, HB SHAFFER, DT BLUMSTEIN. 2023. The non-lethal effects of climate change and infectious disease and their demographic consequences. *Trends in Ecology and Evolution* (in submission)

GREEN, ET, AI DELL, J CRAWFORD, E BIRO, DR DAVERSA. 2023. Spatial context of trait variation: morphology of spotted salamanders (*Ambystoma maculatum*) varies more within ponds than between ponds. *bioRxiv*. DOI: <https://doi.org/10.1101/2020.06.15.153312>

2022

DAVERSA, DR, J BOSCH, AM MANICA, TWJ GARNER, A FENTON. 2022. Host identity matters – up to a point: the community context of *Batrachochytrium dendrobatidis* transmission. *The American Naturalist*. <https://doi.org/10.1086/720638>.

2021

DAVERSA, DR, R HECHINGER, A FENTON, E MADIN, J ROHR, A DELL, V RUDOLPH, K LAFFERTY. 2021. Broadening the ecology of fear: non-lethal effects arise from diverse responses to predation and parasitism. *Proceedings of the Royal Society: B* 288: 20202966. <http://doi.org/10.1098/rspb.2020.2966>

DAVERSA, DR, AM MANICA, H BINTANEL CENIS, P LOPEZ, TWJ GARNER, J BOSCH. 2021. Alpine newts (*Ichthyosaura alpestris*) avoid habitats previously used by parasite-exposed conspecifics. *Frontiers in Ecology and Evolution* 9: 636099. <http://doi.org/10.3389/fevo.2021.636099>

FARTHING, H, J JIANG, AJ HENWOOD, A FENTON, MC FISHER, DR DAVERSA, TWJ GARNER, DJS MONTAGNES. 2021. Microbial grazers may aid in controlling infections caused by aquatic zoospore fungi. *Frontiers in Microbiology* 11: 592286. <https://doi.org/10.1101/2020.02.03.931857>

2020

COOKE, J, Y ARAYA, K BACON, J BAGNIEWSKA, L BATTY, T BISHOP, M BURNS, C MOYA, M CHARALAMBOUS, DR DAVERSA, et al. 2020. Teaching and learning in ecology: a horizon scan of emerging challenges and solutions. *Oikos* 00:1–14. <https://doi.org/10.1111/oik.07847>

GREISCHAR, M, H ALEXANDER, F BASHEY, A BENTO, A BHATTACHARYA, M BUSHMAN, L CHILDS, DR DAVERSA, ...N MIDEO. 2020. Evolutionary consequences of feedbacks between within-host competition and disease control. *Evolution, Medicine, and Public Health* 10: 30–34. <https://doi.org/10.1093/emph/eaaa004>

2019

CANESSA, S, A. SPITZEN-VAN DER SLUIJS, T. STARK, P. BISHOP, M. BLETZ, C. BRIGGS, D.R. DAVERSA, M. GRAY, R.A. GRIFFITHS, R.N. HARRIS, X.A. HARRISON, J. T. HOVERMAN, P. JERVIS, E.L. MUTHS, D.H. OLSEN, C.L. RICHARDS-ZAWACK, J. ROBERT, G.M. ROSA, B.C. SCHEELE, B.R. SCHMIDT, T.W.J. GARNER. 2019. Conservation decisions under pressure: Lessons from an exercise in rapid response to wildlife disease. *Conservation Science and Practice*. 2019;e141. <https://doi.org/10.1111/csp2.141>

PAUWELS, O., P. CARLINO, L. CHIRIO, D.R. DAVERSA, J. LIPS, R. OSLISLY AND O. TESTA. 2019. Amphibians and reptiles found in caves in Gabon, western Equatorial Africa. *Cave and Karst Science* 46 (1): 3–12.

2018

DAVERSA, D.R., A. MANICA, J. BOSCH, T.W.J. GARNER. 2018. Routine habitat switching alters the likelihood and persistence of infection with a pathogenic parasite. *Functional Ecology*. 32:1262–1270. <https://doi.org/10.1111/1365-2435.13038>

DAVERSA, D.R., C. MONSALVE-CARCAÑO, LM CARRASCAL, J BOSCH. 2018. Seasonal migrations, body temperature fluctuations, and infection dynamics in adult amphibians. *PeerJ* 6:e4698; <https://doi.org/10.7717/peerj.4698>

2017

DAVERSA, D.R., A. FENTON, T.W.J. GARNER, A. DELL, A. MANICA. 2017. Infections on the move: How transient phases of host movement influence disease spread. *Proceedings of the Royal Society B* 284: 20171807. <https://doi.org/10.1098/rspb.2017.1807>

2011–2012

DAVERSA, DR, E MUTHS AND J BOSCH. 2012. Terrestrial movement patterns of the Common Toad (*Bufo bufo*) in Central Spain reveal habitat of conservation importance. *Journal of Herpetology* 46: 658–664.

DAVERSA, DR, J BOSCH AND K JEFFREY. 2011. First survey of the disease-causing fungus, *Batrachochytrium dendrobatidis*, in amphibian populations of Gabon, Africa. *Herpetology Review* 42 (1): 67–69.

PREPRINTS

GREEN, ET, AI DELL, J CRAWFORD, E BIRO, DR DAVERSA. 2020. Habitat patchiness drives spatial structure in morphological trait variation and co-variation in spotted salamanders (*Ambystoma maculatum*). bioRxiv. <https://doi.org/10.1101/2020.06.15.153312> (in submission at PeerJ)

DISTINGUISHED SCIENCE ESSAYS

I strive to communicate science to more general audiences. The following essays were written for non-experts, were published, and received distinctions for their quality.

DAVERSA, D.R. 2013. How heels help people walk. *Access to Understanding*. Europe Pubmed Central.
http://europepmc.org/docs/A2U_programme_web_2013.pdf (essay competition finalist)

DAVERSA, D.R. 2012. The future of science. *In NextGen voices. Science* 335 (6064): 36 – 38. (Top 10 essay)

DAVERSA, D.R. 2012. The definition of a successful scientist. *In NextGen voices. Science* 336 (6077): 32-34.
<http://www.sciencemag.org/content/336/6077/32/suppl/DC1> (Top 50 essay)

TEACHING AND MENTORING

Teaching

2023 – Instructor of record, Marine Biology Lab (EEB109L), Department of Ecology and Evolutionary Biology, UCLA
Organizer, Wildlife Health Seminar, Institute of the Environment and Sustainability, UCLA

2022 – Instructor of record, Ecology (EEB 122, 120 students), Department of Ecology and Evolutionary Biology, UCLA
Advisor, Senior Practicum in Environmental Science, UCLA

Guest Lecturer, Disease Ecology undergraduate/graduate Seminar, UCLA

Volunteer, R programming bootcamp, UCLA

2021 – Guest Lecturer, Introduction to Disease Models, University of Bristol Veterinary School, Bristol, UK

2015 – Behavioral Ecology upper division undergraduate course, University of Cambridge

Ecology undergraduate course, University of Cambridge

2014 – Animal Behavior undergraduate course, University of Cambridge

Population Biology upper division undergraduate course, University of Cambridge

2008 – Excel for Beginners training course, 2008, National Federal Emergency Management Agency

Mentoring

2023 - Supervisor, undergraduate student research, Department of Ecology and Evolutionary Biology, UCLA

2021 – Supervisor, summer undergraduate intern, US National Park Service

Research topic: Threats of disease in endangered Yosemite toads (*Anaxyrus canorus*)

2020 – Global Health PhD and postdoc mentor (4 mentees), Washington University of St. Louis School of Public Health
(recipient of the Outstanding Global Health Mentor award)

2017 – 2019 –

Co-supervisor, PhD student, University of Liverpool

Research topic: within-host infection dynamics for co-infecting pathogens

Co-supervisor, Master's and undergraduate research, University of Liverpool

Research topic: Thermal performance of infective stages of fungal parasites

Co-supervisor, Wild animal Biology Master's student, Institute of Zoology, Zoological Society of London

Research topic: the effects of tagging methods on amphibian behaviour and welfare

Invited participant, working group on teaching in ecology, British Ecological Society

2016 – Primary supervisor, summer undergraduate intern, National Great Rivers Research and Education Center

Research topic: Morphological and behavioural variation in spotted salamanders (*Ambystoma maculatum*)

(intern is now a Ecology PhD candidate at the University of North Carolina, Chapel Hill)

OTHER PROFESSIONAL POSITIONS

These professional experiences instilled research and leadership skills, expanded my appreciation of cultural diversity, and equipped me to coordinate large projects that integrate science, conservation, and public policy.

RESEARCH ASSOCIATE, UNIVERSITY OF CALIFORNIA, BERKELEY, JUNE –2007, 2010

Topics: Field tests of probiotic treatments of diseased amphibians in Sequoia-Kings Canyon National Park

RESEARCH ASSOCIATE, STATION D'ETUDES DES GORILLES ET CHIMPANZÉS/WILDERNESS CONSERVATION SOCIETY, GABON, 2008

Topics: Primate monitoring and conservation in Lope National Park; Disease surveillance in amphibians of Gabon

GIS SPECIALIST, UNITED STATES FEDERAL EMERGENCY MANAGEMENT AGENCY, 2006 –2011

Topic: Using geospatial analyses to measure the economic and environmental impacts of natural disasters

PROJECT MANAGER, PEACEWORK, 2006 –2011

Topic: Service-based partnerships between US institutions and communities in Central America and Africa

SERVICE

CO-ORGANIZER, Thematic Session at 2021 British Ecological Society Annual Meeting, Liverpool, UK

Session title: What determines host species roles in multi-host disease dynamics?

WILEY SCIENCE ADVISOR, 2012 – 2015

Served on panels and working groups for publishing ethics, policy, and development

SCIENCE EDUCATION ASSISTANT, SEEDS, BLACKSBURG, VA, 2004 - 2006

Taught grade school students field biology principles with the non-profit Seek Education Explore DiDiscover (SEEDS)

PEER REVIEW

Proceedings of the Royal Society B, Functional Ecology, Biological Reviews, Ecological Applications, Journal of Animal Ecology, Biology Letters, Scientific Reports, Parasitological Research, Diseases of Aquatic Organisms

Reviewed for a chapter of the 2019 book *Wildlife Disease Ecology: Linking Theory to Data and Applications*

INVITED PRESENTATIONS

UNDERSTANDING ORGANISMAL BIOLOGY TO MANAGE THREATS TO BIODIVERSITY. California Institute of Technology, Pasadena, California, USA, May 2023.

DISEASE AND STRESS ECOLOGY THROUGH THE LENS OF ORGANISMAL BIOLOGY. Williams College, Williamstown, Massachusetts, USA, March 2023.

DOWN WITH DISEASE: MANAGING PATHOGEN THREATS IN YOSEMITE TOAD (*ANAXYRUS CANORUS*) POPULATIONS. Sierra Nevada Aquatic Research Laboratory, Mammoth Lakes, California, USA. May 2022. (virtual) YouTube link: https://www.youtube.com/watch?v=FBYnV_o3xZU

MOVEMENT ECOLOGY CAN IMPROVE ANIMAL HEALTH, WELFARE, AND CONSERVATION, Bristol Veterinary School, University of Bristol, United Kingdom, September 2021 (virtual)

MOVEMENT ECOLOGY PROVIDES SOLUTIONS FOR MITIGATING DISEASE SPREAD. La Kretz Center Seminar, Institute of the Environment and Sustainability, University of California, Los Angeles, March 2020.

HOW MOVEMENT ECOLOGY CAN IMPROVE PREDICTIONS FOR DISEASE SPREAD. Disease Ecology Seminar, Department of Zoology, University of Oxford, October 2019.

FACTORING AMPHIBIAN BEHAVIOUR INTO CHYTRID MITIGATION STRATEGIES. Amphibian and Reptile Conservation Scientific Meeting 2018, Bournemouth, United Kingdom, December 2018.

MOVING FORWARD WITH SPATIAL DISEASE MODELS. CEID seminar, University of Georgia, August 2018.

THE NON-LETHAL CONSEQUENCES OF PARASITISM VERSUS PREDATION. Ecological Society of America Annual Meeting, New Orleans, LA, August 2018.

MOVEMENT AND PARASITISM IN FRAGMENTED HABITATS. Ecology and Evolution Seminar, Department of Biology, Pennsylvania State University, USA, March 2016.

CONTRIBUTED PRESENTATIONS AND POSTERS

BATRACHOCHYTRIUM DENDROBATIDIS RISK IN YOSEMITE TOADS (*ANAXYRUS CANORUS*) VARIES ACROSS SEASONS AND LIFE STAGES. California/Nevada Amphibian Populations Task Force annual meeting. Sebastapol, California. 12 January 2023. (presentation)

SPECIES CONTRIBUTIONS TO TRANSMISSION IN MULTI-HOST COMMUNITIES. Jacques Monod Conference: *Open Questions in Disease Ecology and Evolution: from Basic Research to Evolutionary Medicine*. Roscoff, France. October 2017. (poster)

THE ROLE OF HABITAT HETEROGENEITY AND HOST BEHAVIOUR IN INFECTION DYNAMICS. Ecology and Evolution of Infectious Diseases, Santa Barbara, California, June 2017. (presentation)

HIGH THROUGHPUT AUTOMATED IMAGING SYSTEM FOR QUANTIFYING BEHAVIOUR AND TROPHIC INTERACTIONS. Gordon Research Conference: Predator-Prey Interactions, Ventura California, January 2017. (poster)

EXPOSURE FREQUENCY AND HABITAT ALTER INFECTION DYNAMICS. British Ecological Society Joint Meeting, Lille France. Dec. 2014. (presentation)

DISEASE SPREAD IN AMPHIBIAN METACOMMUNITIES. Student Research Conference, Zoological Society of London, February 2014. (*Runner-up for best talk*)