

CURRICULUM VITAE

D. Christopher Rogers, Ph.D

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The Kansas Biological Survey
The University of Kansas

Title: Research Invertebrate Zoologist

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Education: Ph.D, *cum laude*, University of New England, Armidale, NSW, Australia

Research Interests:

Primary:

- Systematics, phylogeny, biogeography and ecology of the Anostraca, Notostraca, Spinicaudata, Cyclestherida and Laevicaudata (Crustacea: Branchiopoda)
- Systematics, phylogeny, biogeography and ecology of freshwater crabs, shrimp, crayfish, amphipods and isopods (Crustacea: Malacostraca)
- Ecology and conservation temporary aquatic habitats and associated fauna
- Development of biomonitoring tools for assessing wetlands
- Taxonomic data standardization for biomonitoring protocols

Secondary:

- Systematics and phylogeny of the Cladocera (Branchiopoda)
- Evolution and biogeography in the Branchiopoda
- Ecology of Crustacea in temporary aquatic habitats
- Taxonomy, ecology and conservation of freshwater and terrestrial Crustacea
- Ecology of tropical freshwater decapods

Current Research Themes:

- Systematics of the Branchiopoda
- Biogeography of the Branchiopoda

- Biodiversity of the freshwater and terrestrial decapods of the Marianas Islands
- Biogeography of the Branchiopoda
- Standardization methods for bioassessment taxonomy
- Bioassessment methods for temporary aquatic habitats
- Mosquito monitoring for the State of Kansas

Current Catalog Contributions:

- McLaughlin, P.A., D.K. Camp, M.V. Angel, E.L. Bousfield, P. Brunnel, R.C. Brusca, D. Cadien, A.C. Cohen, K. Conlan, L.G. Eldredge, D.L. Felder, J.W. Goy, T. Haney, B. Hann. R. W. Heard, E. A. Hendrycks, H. H. Hobbs III, J. R. Holsinger, B. Kensley, D. R. Laubitz, S.E. LeCroy, R. Lemaitre, R.F. Maddocks, J.W. Martin, P. Mikkelsen, E. Nelson, W.A. Newman, R.M. Overstreet, W.J. Poly, W.W. Price, J.W. Reid, A. Robertson, **D.C. Rogers**, A. Ross, M. Schotte, F.R. Schram, C.T. Shih, L. Watling, G.D.F. Wilson, & D.D. Turgeon. 2005. Common and scientific names of aquatic invertebrates from the United States and Canada: Crustaceans. American Fisheries Society, Special Publication 31, Bethesda, Maryland.
- Ah Yong, S.T., J.K. Lowry, M. Alonso, R.N. Bamber, G.A. Boxshall, P. Castro, S. Gerken, G. S. Karaman, J. W. Goy, D. S. Jones, K. Meland, **D.C. Rogers** & J. Svavarsson. 2011. Subphylum Crustacea Brünnich, 1772. In: Zhang, Z.-Q. (Ed.), Animal biodiversity: An outline of higher-level classification and survey of taxonomic richness. Zootaxa 3148: 1-237.

Teaching Experience:

Instructor

- *University of California, Davis (1999- 2010)*. Occasional guest lecturer for a variety of crustacean, entomology, and invertebrate ecology courses.
- *Instructor (1997-Present)*. Large branchiopod crustacean taxonomy and ecology in the western states. This workshop has been held once or twice per year since 1997, and has been taught in various places in California and Oregon.
- *Xerces Society (April 2004)*. Freshwater Crustaceans of Western North America held in Oregon in April 2004.
- *Southwest Association of Freshwater Invertebrate Taxonomists (2005- present)*. Instructor for a variety of crustacean and invertebrate ecology workshops.
- *Southern California Association of marine Invertebrate Taxonomists (June 2008)*. Instructor of a workshop on the estuarine crustaceans of the California coast.

Major Research Grants and Travel:

- 1990 Arizona and southern California; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1991 Arizona and Nevada; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1992 Northern California and southern Oregon; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1993 Nevada; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1994 Northern California; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1996 Southern California; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1997 Oregon and Washington; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1997-1998 The Nature Conservancy; effects of fire and grazing on Anostraca and Notostraca populations (\$6,000)
- 1998 Southern Texas; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 1999 Oregon and Nevada; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 2000 U.S. Fish & Wildlife Service; Biodiversity of Anostraca and Notostraca in northern California and Oregon (\$25,000)
- 2000-2001 T & E Associates; Biodiversity of Anostraca, Notostraca, Spinicaudata and Laevicaudata in New Mexico (\$5,000)
- 2001 Smithsonian; Examination of Branchiopod Crustacea collections (personal funds)
- 2001 New Mexico Department of Game & Fish; Biodiversity of Anostraca, Notostraca, Spinicaudata and Laevicaudata in New Mexico (\$5,000)
- 2001 Colorado; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 2001 Baja California Sur, México; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 2001 U.S. Fish & Wildlife Service; Distribution and habitat parameter studies for the Anostracan shrimp *Branchinecta mesovallensis* (\$20,000)
- 2001 Brazilian Ministry of Mines & Energy; Surveys for Anostraca and Spinicaudata in Minas Gerias State, Brazil (\$5,000)
- 2001-2002 U.S. Bureau of Land Management; Biodiversity of Anostraca, Notostraca, Spinicaudata and Laevicaudata in New Mexico (\$10,000)
- 2002 Western Switzerland and eastern France; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 2002 Idaho; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 2003 Southern Idaho, northern Utah and western Wyoming; biodiversity surveys of Branchiopod Crustacea (personal funds)
- 2003 Brazilian Ministry of Mines & Energy; Surveys for Anostraca and Spinicaudata in Minas Gerias State, Brazil (\$5,000)
- 2004 Brazilian Ministry of Mines & Energy; Surveys for Anostraca and Spinicaudata in Minas Gerias State, Brazil (\$5,000)
- 2004 Western Australia; biodiversity surveys of Branchiopod Crustacea (personal funds)

2006	Southern Alaska; biodiversity surveys of Branchiopod Crustacea (personal funds)
2006	NSF grant partnership with the University of Akron, Ohio; Taxonomy of the spinicaudatan clam shrimp (\$6,000)
2007	Chile; biodiversity surveys of Branchiopod Crustacea (personal funds)
2008	U.S. Fish & Wildlife Service; reference collections of the large branchiopod Crustaceans on the western United States (\$10,000)
2010	US Air Force; comparison of impacted and natural vernal pools at Beale Air Force Base (\$35,000)
2011-2012	National Park Service; Freshwater crustacean and mollusk surveys of the Marianas Islands (\$130,000)
2011-2014	EPA Region 8; Macroinvertebrate community structure in playa wetlands (\$84,000)
2012	Taipei National University; Ecology of Taiwanese Branchiopoda (\$3,000)
2012-2014	Australia; Biogeography of the Anostraca (\$100,000)
2012	Maha Sarakham University; Diversity of large Branchiopod Crustacea of Southeast Asia (\$3,000)
2013- present	Center for Disease Control (partnered with KDHE) Mosquito borne disease surveillance for the state of Kansas (\$37,477)
2013	National Park Service; Freshwater crustacean and mollusk surveys of the Marianas Islands (\$14,000)
2013-2014	EPA Region 7; Comparison of playa sampling techniques (egg banks vs. wet sampling) (\$211,383)
2014	Center for Disease Control (partnered with KDHE) Mosquito borne disease surveillance for the state of Kansas (\$40,000)
2014	US Navy; Culturing federally endangered crustacean species (\$5,500)

Volunteer Service:

- *International Union for Conservation and Nature (IUCN), Species Survival Commission (2001- 2007)*. Member of the Invertebrate Conservation Steering Committee, and member of the Inland Water Crustacean Specialist Group. I attend one or two meetings per year, each meeting being four days to a week in length. Meetings can be held anywhere in the world.
- *Southwest Association of Freshwater Invertebrate Taxonomists (1997 – Present)*. Vice president since 2006. Instructor of several workshops, including: Freshwater Crustacea; Estuarine Crustacea (joint workshop with the Southern California Association of Marine Invertebrate Taxonomists), and; Aquatic Coleoptera.
- *California Academy of Sciences, San Francisco (1997- Present)*. Identifications of large branchiopod crustaceans. I spend a few weeks per year identifying material as needed.
- *Bohart Museum of Entomology, University of California, Davis (1995- Present)*. Identifications of large branchiopod crustaceans, isopods, amphipods, cumaceans,

tanaiidaceans, decapods and some beetle groups. I spend a few weeks each year identifying material as needed.

- *U.S. Fish and Wildlife Services (1997- Present)*. Developed and assembled reference fairy shrimp and tadpole shrimp collections. Consult on conservation issues concerning the federally listed fairy shrimp and tadpole shrimp species in California and Oregon.
- *NABS (North American Benthological Society) Taxonomy Fair (2004 – Present)*. Provide identifications of crustaceans from around the world.

Editorships:

- *Guest Editor, Hydrobiologia Volume 486*. Hydrobiologia/Developments in Hydrobiology “Studies on Large Branchiopod Biology IV”, proceedings of the fourth international large branchiopod symposium. Editors: A. Maeda-Martinez, B. Timms, D.C. Rogers, A. Abreu-Grobois, and G. Murugan, 2002.
- *Coeditor, Anostracan News (2001- Present)*. Quarterly newsletter of the International Large Branchiopod Society, Volume 10 to present.
- *Associate Editor, Journal of Crustacean Biology (2005- Present)*. Editor concerning submitted manuscripts pertaining to the Branchiopoda.
- *Coordinating Editor, International Large Branchiopod Society (ILBS) (2005- Present)*. Coordinating and lead English speaking editor for the symposium proceedings of the ILBS.
- *Editor, SAFIT Newsletter (2008 – Present)*. Founder and editor of the newsletter of the Southwestern Association of Freshwater Invertebrate Taxonomists.

Professional Memberships:

California Inland Invertebrate Working Group (IIWG); 1994 – Present.

Pacific Coast Entomological Society; 1995 – Present.

International Large Branchiopod Society; 1996 – Present.

The Crustacean Society; 2000 – Present.

TCS North American Governor; 2014 – Present.

International Union for the Conservation of Nature (IUCN), Inland Crustacean Working Group; 2000- 2002

IUCN, Invertebrate Conservation Steering Committee; 2001- 2004

Society of Freshwater Scientists (formerly NABS); 2002 - Present

Southwestern Association of Freshwater Invertebrate Taxonomists; 1997- Present, Vice President, 2006 to 2013.

Professional Services:

Branchiopod Identifications

- U.S. Fish & Wildlife Service; 1996 – present
- California Department of Fish & Game; 1997- present
- U. S. Forest Service; 1997- present
- U.S. Bureau of Land Management; 1997- present
- New Mexico Department of Fish & Game; 1999- present
- California Academy of Sciences; 1999- present
- Brazilian Ministry of Mines & Energy; 2001- present
- Georgia Department of Natural Resources; 2001- present
- Australian Fisheries Scientific Committee; 2001
- Lake Biwa Museum, Shiga, Japan; 2001- present
- University of Milwaukee Museum; 2003
- Western Pennsylvania Conservancy; 2009
- Florida Department of natural Resources; 2009

Crayfish and Freshwater Shrimp and Crab Identifications

- U.S. Environmental Protection Agency; 2002- present
- Oregon Department of Environmental Quality; 2002- present
- U. S. Marine Corp, Jungle Warfare Training Center, Okinawa; 2005-2006
- Essig Museum of Entomology, University of California, Berkeley; 2004- present
- Idaho Department of Environmental Quality; 2008- present

Freshwater Crustacean Identifications

- Bohart Museum of Entomology; 1997- present
- California Department of Food & Agriculture; 2002- present
- Orma J. Smith Museum, Albertson College, Idaho; 2002- present
- University of Colorado Museum; 2003- present
- North American Benthological Society Taxonomy Fair; 2004 – present
- Essig Museum of Entomology, University of California, Berkeley; 2004- present

US Federal Endangered Species Collecting Permit (10(A)1(a))

- #TE796284-3. This permit authorizes me to collect, survey, culture and conduct research with the federally listed threatened or endangered vernal pool tadpole shrimp, vernal pool fairy shrimp, longhorn fairy shrimp, Conservancy fairy shrimp, Riverside fairy shrimp, San Diego fairy shrimp, as well as the California freshwater shrimp, and Morro shoulderband snail.
- #TE702631. This permit is held by the U.S. Fish & Wildlife Service. The Service included me on this permit so that I could collect and possess specimens of the federally listed threatened or endangered vernal pool tadpole shrimp, vernal pool fairy shrimp, longhorn fairy shrimp, Conservancy fairy shrimp, Riverside fairy shrimp, and San Diego fairy shrimp.

Conservation Studies Conducted for the United States Fish & Wildlife Service the following protected species and species of special concern:

- Vernal pool tadpole shrimp
- Vernal pool fairy shrimp
- Mid Valley Fairy shrimp

- Longhorn fairy shrimp
- Conservancy fairy shrimp
- San Diego fairy shrimp
- Riverside fairy shrimp
- Moore's fairy shrimp
- Ohlone tiger beetle
- Delta green ground beetle
- Valley elderberry longhorn beetle
- Silver-spot Callippe butterfly
- Carson wandering skipper
- Mac Neil's sooty winged skipper
- Santa Cruz rain beetle
- Mt. Hermon June beetle
- Trinity bristle snail
- U.S. Forest Service's Survey and Manage aquatic and terrestrial mollusk species

Focused Macroinvertebrate Bioassessment Identification (Projects sites):

- More than 800 sites in western USA (California, Oregon, Washington, Idaho, Nevada, Arizona, New Mexico, Texas, Utah, Colorado, Wyoming, Montana, Nebraska, Kansas, Missouri, Oklahoma).
- 26 sites in Louisiana, Alabama, South Carolina (USA).
- 76 sites in Brazil.
- 18 sites in Chile.
- 40 sites in the Nickarie River Catchment, Suriname.
- 30+ sites from the Yanacocha region of Peru.
- 43 sites from Okinawa, Japan.
- 28 sites in Guam.

Work Experience:

Kansas Biological Survey: Invertebrate Zoologist (2010 – present)

Duties: Researcher in invertebrate systematics, taxonomy, evolution, biogeography and ecology, focusing on branchiopod crustaceans, freshwater crustaceans, and temporary wetland habitats. Conducts surveys for rare, threatened and endangered crustaceans, aquatic bioassessments, mosquito and arbovirus vector monitoring.

EcoAnalysts, Inc.: Senior Invertebrate Ecologist and Taxonomist, California Office Manager (2002- 2010)

Duties: *Invertebrate Ecological Studies.* Conducted quantitative habitat assessments using benthic and planktonic macroinvertebrates. Expert in invertebrate identification and ecology; skilled in invertebrate sampling methods,

culture and statistics. Conducts invertebrate community surveys for both terrestrial and aquatic environments. Extensive field experience in western United States, as well as Brazil and Mexico. In addition, has conducted invertebrate work for clients in Australia, Canada, Chile, Algeria, South Africa, Peru and Bahrain.

Rare, Threatened, and Endangered Species Studies. Conducts special status invertebrate species surveys in conjunction with conservation planning and biological resource inventories; familiar with state and federal laws pertaining to rare, threatened, and endangered species. Expert in invertebrate identification and ecology; skilled in invertebrate sampling methods. Permitted to perform surveys or other work with federally listed vernal pool crustacean species, California freshwater shrimp, Valley elderberry longhorn beetle, Morro shoulderband snail, and Delta green ground beetle, and certified for Survey and Manage mollusk species under the U.S. Forest Service Northwest Forest Plan. Experienced with numerous other special-status invertebrate species.

Conservation Planning. Experienced in writing single and multispecies conservation plans for special-status invertebrates and their associated habitat and natural communities.

Biological Resources Assessments. Performs biological resources surveys. Identifies sensitive habitats and wetlands; surveys for special-status species habitat and occurrences.

Jones & Stokes. Senior Invertebrate Ecologist. (1995 – 2002)

Duties: Leader of Invertebrate Ecology Group. Performed benthic (freshwater and marine) and terrestrial macroinvertebrate studies as well as special status species surveys, including the collection, identification, and enumeration of specimens and subsequent analysis of field data. Duties performed were similar to those above for EcoAnalysts.

Enplan. Invertebrate Ecologist. (1993 – 1995)

Duties: Conducted surveys for special status Crustacea and rare and endangered plants in vernal pool habitats. Also conducted surveys for the federally listed Valley elderberry longhorn beetle.

California Department of Water Resources. Entomologist. (1993 – 1995)

Duties: Performed benthic macroinvertebrate surveys, including the collection, identification, and enumeration of specimens and subsequent statistical analysis of

data. Gathered baseline water-quality data on the major northern California reservoirs and drainage systems, including diels.

Shasta Mosquito and Vector Control District. Entomologist. (1990 – 1993)

Duties: Developed a seasonal wetland and vernal pool ecosystem sampling protocol and protection plan. Conducted bioassays, pesticide resistance testing, efficacy tests, and new pesticide field and laboratory tests. Monitored adult and larval mosquito populations. Conducted monitoring for viral encephalitis. Performed tick surveys for Lyme's disease monitoring. Developed aquatic invertebrate reference collections.

SELECTED PUBLICATIONS

- Rogers, D.C. 2014. Anostracan (Crustacea: Branchiopoda) Biogeography II. Relating distribution to geochemical substrate properties in the USA. *Zootaxa*, 3856: 1-49
- Rogers, D.C. 2014. Anostracan (Crustacea: Branchiopoda) Biogeography I. North American Bioregions. *Zootaxa*, 3838: 251-275
- Rogers, D.C. & S. Padhye. 2014. A new species of *Streptocephalus* (Crustacea: Anostraca; Streptocephalidae) from the Western Ghats, India, with a key to the Asian species. *Zootaxa*, 3802: 75-84.
- Rogers, D.C. 2014. Larger hatching fractions in avian dispersed anostracan eggs (Branchiopoda). *Journal of Crustacean Biology*. 34: 135-143.
- Rogers, D.C., L. Sanoamuang, W. Thaimuangphol, & N. Saenphan. 2013. Current knowledge of the Southeast Asian large branchiopod Crustacea (Anostraca, Notostraca, Laevicaudata, Spinicaudata, Cycletherida). Proceeding of the Freshwater Invertebrates of Southeast Asia Conference. *Journal of Limnology* 72: 69-80.
- Rogers, D. C., & M. Hamer. 2012. Two new species of branchiopodid fairy shrimp (Anostraca) including a new genus with a unique thoracic appendage: a case of sexual arms race. *Journal of Crustacean Biology* 32: 972-980.
- Rogers, D. C., N. Rabet, & S. C. Weeks. 2012. A revision of the extant genera of the clam shrimp family Limnadiidae. *Journal of Crustacean Biology* 32: 827-842.
- Rogers, D. C., J. P. Corrêa Gomes & F. Viera. 2012. A new species of *Dendrocephalus* (Crustacea, Anostraca) from Serra dos Carajás (Pará State, Brasil). *Zootaxa* 3363: 52-58.
- Knecht, R. J., J. S. Benner, **D. C. Rogers**, & J. Ridge. 2009. *Surculichnus bifurcaudan*. n. gen., n. sp., a trace fossil from Late Pleistocene glaciolacustrine varves of the Connecticut River Valley, USA, attributed to notostracan crustaceans based on neoichnological experimentation. *Palaeogeography, Palaeoclimatology Palaeoecology* 272: 232-239.
- Rogers, D. C., D. Quinney, J. Weaver, & J. Olesen. 2006. A new giant species of predatory fairy shrimp from Idaho (Branchiopoda: Anostraca). *Journal of Crustacean Biology*, 6:1-16.
- Daniels, S. R., M. Hamer, & **D. C. Rogers**. 2004. Molecular evidence suggests an ancient radiation for the fairy shrimp genus *Streptocephalus* (Branchiopoda: Anostraca). *Biological Journal of the Linnaean Society*, 82:313-327.
- Rogers, D.C. 2002. The amplexial morphology of selected Anostraca. *Hydrobiologia* 486: 1-18.

Rogers, D.C. 2001. Revision of the Nearctic *Lepidurus* (Notostraca). *Journal of Crustacean Biology* 21: 991-1006.