

CURRICULUM VITAE

Derek A. Zelmer

**Department of Biology and Geology
University of South Carolina Aiken
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Personal information:

Date of Birth: June 19, 1969; Calgary, Alberta, Canada

Education:

Wake Forest University, Department of Biology, Ph.D. 1994-1998

Advisor: Dr. Gerald W. Esch

University of Calgary, Department of Biological Sciences, M.Sc. 1992-1994

Advisor: Dr. Hisao P. Arai

University of Calgary, Department of Biological Sciences, B.Sc. 1989-1992

Majors: Ecology and Zoology

Research interests:

Among-scale interactions of population and community processes in aquatic systems

Determinants of parasite community structure in aquatic vertebrates

Transmission dynamics of parasites in lotic ecosystems

Professional experience:

Teaching:

Assistant Professor, Department of Biology and Geology, University of South Carolina Aiken, 2006-present

Principles of Biology, Ecology and Evolution, Invertebrate Zoology

Associate Professor, Department of Biology, Emporia State University, 2005-2006

Principles of Ecology, Field Ecology, Parasitology, Invertebrate Zoology,

Research Design and Analysis, Ecology and Evolution Graduate Seminar

Assistant Professor, Department of Biology, Emporia State University, 1999-2005

Principles of Ecology, Field Ecology, Parasitology, Invertebrate Zoology,

Research Design and Analysis, Ecology and Evolution Graduate Seminar

Visiting Assistant Professor, Wake Forest University, 1998-1999

Aquatic Ecology, Parasitology, Introductory Biology

General:

Associate Editor, American Midland Naturalist, March 2002-present

Chair, Academic Affairs Committee, Emporia State University 2005-2006

Graduate Program Coordinator, Department of Biology, Emporia State University, 2001-2004

Director of the Natural Areas, Emporia State University, 2001-2002

Postdoctoral Research, Guanacaste Conservation Area. Community ecology and classification of parasites of amphibians in Costa Rica, 1998

Consultant, North Carolina Fish and Game. Determination of the source of infection of hatchery brook trout, *Salvelinus fontinalis*, by the blood fluke *Salminicola fontinalis*, and evaluation of potential control measures, 1997

Consultant, AGRA Earth and Environmental. Impact of water transfer on the metazoan parasite fauna of lake whitefish, *Coregonus clupeaformis*, in the Lake Wabumin fishery, 1995

Consultant, Alberta Fish and Wildlife. Establishment of lake stocking protocols, aimed at minimizing parasite transfaunation, 1992-1993

Reviewer: *Acta Parasitologica* 2002; *American Midland Naturalist* 1998-2002; *Animal Behavior* 1998; *Comparative Parasitology* 1997, 2002, 2004, 2005; *Journal of Parasitology* 1994, 1996-2005; *Journal of Invertebrate Pathology* 1994; *Prairie Naturalist* 2000-2005; *Transactions of the Kansas Academy of Sciences* 2002-2004

Grants, honors, and awards:

Research Opportunity Program Grant, University of South Carolina, 2007 (\$8,132)

Research and Creativity Grant, Emporia State University, 2003 (\$7,650)

Research and Creativity Grant, Emporia State University, 2002 (\$3,135)

Research and Creativity Grant, Emporia State University, 2001 (\$9,815)

Research and Creativity Grant, Emporia State University, 2000 (\$12,248)

Postdoctoral Fellowship, Natural Sciences and Engineering Research Council of Canada, 1999 (\$70,000)

Best Student Paper Presentation Award, Annual Meeting of the American Society of Parasitologists, 1997

Byrd-Dunn Award for best student paper presented at the Annual Meeting of the Southeastern Society of Parasitologists, 1997

Outstanding Graduate Student, Department of Biology, Wake Forest University, 1996

Marc Dresden Student Travel Award, American Society of Parasitologists, 1995, 1997

Fisheries Management Enhancement Program Grant (with Dr. H.P. Arai), Alberta Fish and Wildlife, 1992, 1993 (\$35,000)

Articles published in refereed journals:

Zelmer, D.A., and T.R Platt. 2008. Structure and similarity of helminth communities of six species of Australian turtles. *Journal of Parasitology* 94: 781-787.

McJunkin, J. W., and D. A. Zelmer. 2008. Evaluating the effects of enteric helminths on epigamic characters of male wild turkeys (*Meleagris gallopavo*) in Southeastern Kansas, U.S.A. *Comparative Parasitology* 75:283-287.

Brooks, D.R., V. León-Règagnon, D. A. McLennan, and D.A. Zelmer. 2006. Ecological fitting as a determinant of the community structure of platyhelminth parasites of anurans. *Ecology* 87: S76-S85.

McJunkin, J.W., D.A. Zelmer, and R.D. Applegate. 2005. Population dynamics of wild turkeys in Kansas (*Meleagris gallopavo*): theoretical considerations and implications of Rural Mail Carrier Survey (RMCS) data. *American Midland Naturalist* 154: 178-187.

Zelmer, D.A., L. Paredes-Calderón, V. León-Règagnon, and L. García-Prieto. 2004. Nestedness in colonization-dominated systems: helminth infracommunities of *Rana vaillanti* Brocchi (Anura: Ranidae) in Los Tuxtlas, Veracruz, Mexico. *Journal of Parasitology* 90: 705-710.

Zelmer, D.A., and J.R. Seed. 2004. A patch hath smaller patches: delineating ecological neighborhoods for parasites. *Comparative Parasitology* 71: 93-103.

- Zelmer, D.A. and H.P. Arai. 2004. Development of nestedness: host biology as a community process in parasite infracommunities of yellow perch (*Perca flavescens* (Mitchill)) from Garner Lake, Alberta. *Journal of Parasitology* 90: 435-436.
- Everhart, M.E., R.E. Kuhn, and D.A. Zelmer. 2004. Intrapopulation dynamics of a wild strain of *Taenia crassiceps* (WFU)(Cestoda: Taeniidae) in BALB/cJ mice. *Journal of Parasitology* 90: 79-84.
- McJunkin, J.W., R.D. Applegate, and D.A. Zelmer. 2003. Helminths of wild turkeys (*Meleagris gallopavo*) in Kansas. *Journal of Avian Diseases* 47: 1481-1485.
- Johnson, P.T.J., K.B. Lunde, D.A. Zelmer, and J.K. Werner. 2003. Limb deformities as an emerging parasitic disease in amphibians: evidence from museum specimens and re-survey data. *Conservation Biology* 17: 1724-1737.
- León-Règagnon, V., D.R. Brooks, and D.A. Zelmer. 2001. Morphological and molecular description of *Haematoloechus meridionalis* n. sp. (Digenea: Plagiorchioidea: Haematoloechidae), of *Rana vaillanti* Brocchi of Guanacaste, Costa Rica. *Journal of Parasitology* 87: 1423-1427.
- Stanger-Hall, K.F., D.A. Zelmer, C. Bergren, and S.A. Burns. 2001. Taste discrimination in a lizard (*Anolis carolinensis*, Polychrotidae). *Copeia* 2001: 490-498.
- Zelmer, D.A., and D.R. Brooks. 2000. *Halipegus eschi* n. sp. (Digenea: Hemiuridae) in *Rana vaillanti* from Guanacaste Province, Costa Rica. *Journal of Parasitology* 86: 1114-1117.
- Zelmer, D.A., and G.W. Esch. 2000. Snail size as a determinant of prepatent period duration in *Helisoma anceps* infected with *Halipegus occidualis* (Digenea: Hemiuridae). *Journal of Parasitology* 86: 891-894.
- Zelmer, D.A., and G.W. Esch. 2000. Relationship between structure and stability of a *Halipegus occidualis* component population in green frogs: a test of selective treatment. *Journal of Parasitology* 86: 233-240.
- Zelmer, D.A., and G.W. Esch. 1999. Robust estimation of parasite component community richness. *Journal of Parasitology* 85: 592-594.
- Zelmer, D.A., E.J. Wetzel, and G.W. Esch. 1999. The role of habitat in structuring *Halipegus occidualis* metapopulations in the green frog. *Journal of Parasitology* 85: 19-24.
- Zelmer, D.A., and G.W. Esch. 1999. Re-evaluation of the taxonomic status of *Halipegus occidualis* Stafford, 1905 (Digenea: Hemiuridae). *Journal of Parasitology* 85: 157-160.
- Zelmer, D.A. 1998. An evolutionary definition of parasitism. *International Journal for Parasitology* 28: 531-533.
- Zelmer, D.A., and G.W. Esch. 1998. The infection mechanism of the cystophorous cercaria of *Halipegus occidualis* (Trematoda: Hemiuridae). *Invertebrate Biology* 117: 281-287.
- Zelmer, D.A., and G.W. Esch. 1998. Interactions between *Halipegus occidualis* and its ostracod second intermediate host: evidence for castration? *Journal of Parasitology* 84: 778-782.
- Zelmer, D.A., and G.W. Esch. 1998. Bridging the gap: the odonate naiad as a paratenic host for *Halipegus occidualis* (Trematoda: Hemiuridae). *Journal of Parasitology* 84: 94-96.
- Zelmer, D.A., and H.P. Arai. 1998. The contributions of host age and size to the aggregated distribution of parasites in yellow perch, *Perca flavescens*, in Garner Lake, Alberta. *Journal of Parasitology* 84: 24-28.

Esch, G.W., E.J. Wetzel, D.A. Zelmer, and A.M. Schotthoefer. 1997. Long-term changes in parasite population and community structure: a case history. *American Midland Naturalist* 137: 369-387.

Articles submitted to peer-reviewed journals:

Zelmer, D.A., and C.M. Gross. 2009. "Active" passive sampling in two species of *Lepomis* from Par Pond, South Carolina: a case study of infracommunity nestedness. *Journal of Parasitology* (submitted November, 2008).

Non-refereed contributions:

Zelmer, D.A. 2002. Book review: Tylenchida: parasites of plants and insects. 2nd edition. *Plant Science Bulletin* 28: 28-49.

Zelmer, D.A. 2001. Book review: Parasitic diseases. 4th edition. *Journal of Parasitology* 87: 1414.

Zelmer, D.A. 2000. Book review: Epidemic modeling: an introduction. *Journal of Parasitology* 86: 118.

Zelmer, D.A. 2000. Book review: Sex and parthogenesis: evolutionary ecology of reproductive modes in non-marine ostracods. *Quarterly Review of Biology* 75: 56-57.

Zelmer, D.A. 1998. Book review: Parasites of offshore big game fishes of Puerto Rico and the western Atlantic. *Journal of Parasitology* 84: 283.

Zelmer, D.A. 1997. Book review: Guide to the parasites of fishes of Canada. Part IV. Trematoda. *Journal of Parasitology* 83: 178.

Zelmer, D.A. 1996. Book review: Fish diseases and disorders. Volume I: protozoan and metazoan infections. *Journal of Parasitology* 82: 525.

Zelmer, D.A. 1996. Book review: Parasites of fishes in Wyoming. *Journal of Parasitology* 82: 236.

Presentations:

Zelmer, D.A. 2007. Host biology as a community process: parasites of *Lepomis gulosus* in Par Pond, South Carolina. Annual Meeting of the Southeastern Society of Parasitologists, Belle Baruch Marine Laboratory, Georgetown, SC.

Zelmer, D.A. V. León-Règagnon, and D.R. Brooks. 2005. Ecological fitting in the evolution of anuran parasite communities. Southwestern Association of Parasitologists, 38th Annual Meeting, Lake Texoma, Oklahoma, April 2005.

Zelmer, D.A. 2005. Landscape epidemiology and nested communities: a framework for parasite community ecology. Seminar, Department of Zoology, Oklahoma State University, February 2005.

Zelmer, D.A. 2004. Null models for nested subset patterns of community structure: an illuminating shift from black boxes to grey areas. Southwestern Association of Parasitologists, 37th Annual Meeting, Lake Texoma, Oklahoma, April 2004.

Zelmer, D.A. 2003. Landscape epidemiology and nested communities: a framework for parasite community ecology. Invited presentation at the Student Symposium at the American Society of Parasitologists, 78th Annual Meeting, Halifax, Nova Scotia, Canada, August 2003.

Zelmer, D.A., L. Paredes-Calderón, V. León-Règagnon, and L. García-Prieto. 2003. Nestedness in colonization-dominated systems: helminth infracommunities of *Rana vaillanti* Brocchi (Anura: Ranidae) in Los Tuxtlas, Veracruz, Mexico. Southwestern Association of Parasitologists, 36th Annual Meeting, Lake Texoma,

- Oklahoma, April 2003.
- Zelmer, D.A., and J.W. McJunkin. 2001. The search for scale: local and regional effects on zooplankton community dynamics. Southwestern Association of Naturalists, 48th Annual Meeting, Hays, Kansas, April 2001.
- Zelmer, D.A. 2000. Habitat begets habitat: landscape structure as a determinant of parasite community structure. Department of Biology Weekly Seminar Series, Wichita State University, Wichita, Kansas, November 2000.
- Zelmer, D.A. 2000. Parasite prerequisites: the life history of *Poikilolaimus robbinsi*. Annual Meeting of the Southeastern Society of Parasitologists, Chattanooga, Tennessee, April 2000.
- Zelmer, D.A. 2000. Protozoan and metazoan parasites of fishes. Workshop presented at the Annual Meeting of the Kansas Chapter of the American Fisheries Society, Manhattan, Kansas, February 2000.
- Zelmer, D.A., and D.R. Brooks. 1999. Habitat use and parasite community structure in Costa Rican anurans. American Society of Parasitologists, 74th Annual Meeting, Monterey, California, July 1999.
- Zelmer, D.A., and D.R. Brooks. 1999. Habitat use and parasite community structure in Costa Rican anurans. Annual Meeting of the Southeastern Society of Parasitologists, Auburn, Alabama, April 1999.
- Zelmer, D.A., and G.W. Esch. 1998. Relationship between structure and stability of a *Halipegus occidualis* component population in green frogs. Annual Meeting of the Southeastern Society of Parasitologists, Clemson, South Carolina, April 1998.
- Zelmer, D.A., and G.W. Esch. 1997. Life history and transmission dynamics of *Halipegus occidualis*. Department of Biology Weekly Seminar Series, Wake Forest University, Winston-Salem, North Carolina, October 1997.
- Zelmer, D.A., and G.W. Esch. 1997. Bridging the gap: the odonate naiad as a paratenic host for *Halipegus occidualis*. American Society of Parasitologists, 72nd Annual meeting, Nashville, Tennessee, June 1997.
- Zelmer, D.A., and G.W. Esch. 1997. The role of habitat in the structuring of the *Halipegus occidualis* metapopulation of the green frog, *Rana clamitans*. Annual Meeting of the Southeastern Society of Parasitologists, Greenville, South Carolina, April 1997.
- Zelmer, D.A., and H.P. Arai. 1996. The contributions of host age and size to the aggregated distribution of parasites in yellow perch, *Perca flavescens* (Mitchill). Annual Meeting of the Southeastern Society of Parasitologists, Hancock Biological Station, Murray State University, Kentucky, April 1996.
- Zelmer, D.A., and H.P. Arai. 1995. The effect of lake size on the determination of the parasite component community of yellow perch, *Perca flavescens* (Mitchill). American Society of Parasitologists, 70th Annual Meeting, Pittsburgh, Pennsylvania. June 1995.
- Zelmer, D.A., and H.P. Arai. 1995. The effect of lake size on the determination of the parasite component community of yellow perch, *Perca flavescens* (Mitchill). Annual Meeting of the Southeastern Society of Parasitologists, Knoxville, Tennessee, April 1995.

Presentations by Graduate Students

- Warburton, E.M., and D.A. Zelmer. 2005. Crossing Ösche's bridge: prerequisites for parasitism in rhabditid nematodes. Southwestern Association of Parasitologists, 38th Annual Meeting, Lake Texoma, Oklahoma, April 2005.
- Warburton, E.M., and D.A. Zelmer. 2004. Testing prerequisites for parasitism in two species of rhabditid nematodes. Southwestern Association of Parasitologists, 37th Annual Meeting, Lake Texoma, Oklahoma, April 2004.
- McJunkin, J.W., and D.A. Zelmer. 2002. Utilizing the Hamilton-Zuk hypothesis as a metric of the long-term effects of enteric helminthes on parasites of wild turkeys (*Meleagris gallopavo*). Southwestern Association of Parasitologists, 35th Annual Meeting, Lake Texoma, Oklahoma, April 2002.
- McJunkin, J.W., and D.A. Zelmer. 2002. Utilizing the Hamilton-Zuk hypothesis as a metric of the long-term effects of enteric helminthes on parasites of wild turkeys (*Meleagris gallopavo*). Poster presentation. 134th Annual Meeting of the Kansas Academy of Sciences, Fort Hays, Kansas, April 2002.
- Theede, B., D.W. Moore, and D.A. Zelmer. 2000. Parasite of bobcats (*Lynx rufus*) in Southeastern Kansas. Poster Presentation. Annual Meeting of the Southwestern Association of Naturalists, Denton, Texas, April 2000.

Presentations by Undergraduate Students

- Mayson, S., and D.A. Zelmer. 2007. Patterns of community similarities of fishes of the Edisto River. Annual Meeting of the South Carolina Academy of Science, Clemson, South Carolina, March 2007.
- Shaw, A., and D.A. Zelmer. 2004. The effects of habitat heterogeneity and area on benthic invertebrate diversity in 5 Kansas ponds. Emporia State University Undergraduate Research and Creativity Symposium, Emporia, Kansas, May 2004.
- Knight, G.L., and D.A. Zelmer. 2002. Evaluating the potential for an 'edge-effect' in parasite communities of lotic fishes. Southwestern Association of Parasitologists, 36th Annual Meeting, Lake Texoma, Oklahoma, April 2002.
- Knight, G.L., and D.A. Zelmer. 2002. Evaluating the potential for an 'edge-effect' in parasite communities of lotic fishes. Great Plains Limnological Conference, October 2002.
- McJunkin, J.W., and D.A. Zelmer 2001. The search for scale: local and regional effects on zooplankton community dynamics. Great Plains Limnology Conference, Lawrence, Kansas, October 2002.
- Green, J.J., and D.A. Zelmer. 2000. Parasite prerequisites: the life history of *Poikilolaimus robbinsi*. Annual Meeting of the Southwestern Association of Naturalists, Denton, Texas, April 2000.

Professional societies:

- American Society of Parasitologists
- Southeastern Society of Parasitologists