Curriculum Vitae

Daniel R. Buchholz

University of Cincinnati
Dept of Biological Sciences
832 Rieveschl Hall
Cincinnati, OH 45221-0006
513-556-9725 wk, 556-5299 fax, 886-1632 cell

Positions

2006- Assistant Professor, Department of Biological Sciences, University of Cincinnati

2000-6 Postdoctoral fellow. Molecular mechanisms of thyroid hormone receptor in gene regulation and development, using frog metamorphosis as a model. Laboratory of Dr. Yun-Bo Shi.

Education

1999 Ph.D., Integrative Biology, University of California at Berkeley. Dissertation: "Evolution and Endocrinology of Accelerated Metamorphosis in Spadefoot Toads" Advisor: Dr. Tyrone Hayes.

1995 M.A. Immunology, Molecular and Cellular Biology, University of California at Berkeley. Advisor: Dr. Nilabh Shastri.

1992 B.A. Biology, Reed College. Thesis: "Apoptosis in the Lymphocytes of *Xenopus laevis.*" Advisor: Dr. Larry Ruben.

Funding

2001-4 **National Research Service Award** for Postdoctoral Fellows, NIH

2001 National Geographic Society Grant for sexual dichromatism in African reed frogs

2000 Louise Kellogg Grant-In-Aid, Museum of Vertebrate Zoology, University of California at Berkeley, for collecting east African reed frogs

1999 Louise Kellogg Grant-In-Aid, Museum of Vertebrate Zoology, University of California at Berkeley, for collecting reed frogs of Cameroon

1998 **Dissertation Improvement Grant**, National Science Foundation

1998 Louise Kellogg Grant-In-Aid, Museum of Vertebrate Zoology, University of California at Berkeley, for collecting east African reed frogs

1998 National Geographic Society Grant (6101-98) for collecting Old World spadefoot toads and parsley frogs

1993-8 **Howard Hughes Predoctoral Fellowship**, University of California at Berkeley

1997 Louise Kellogg Grant-In-Aid, Museum of Vertebrate Zoology, University of California at Berkeley, for collecting New World spadefoot toads.

Honors and Awards

2005 Best poster in Developental Biology at NICHD Fellows Meeting
2003 NIH Finalist for Burroughs Wellcome Fund Career Transition Award
2003 Travel Award for Gordon Research Conference, US Geological Survey
1999 Annie Alexander Fellowship, Museum of Vertebrate Zoology, UC Berkeley
1998 Howard A. Bern Award, Group in Endocrinology, UC Berkeley
1996-8 Student Travel Grants, UC Berkeley, for attending meetings
1992-3 Regents Fellowship, University of California at Berkeley
1992 Phi Beta Kappa, Reed College
1988-92 Georgia Pacific National Merit Scholarship, Reed College
1988-92 Presidents Award for Academic Excellence, Reed College
1991 American Heart Association Student Summer Fellowship, Reed College

Teaching Experience

2007 Research Progress
2006 Current Topics: Developmental Plasticity and Evolution
2004 Mentor, Summer Student Internship at NIH
2003 Mentor, Summer Student Internship at NIH
2001-2 Mentor, Eleanor HS Science and Technology Internship Program
2001 Mentor, HHMI Summer Student Program
2000S Invited Speaker, Herpetology (IB175), University of California at Berkeley. Class Lecture: "Amphibian Reproduction and Larval Biology"
1998F Graduate Student Instructor, Evolution (IB160), University of California at Berkeley. Class Lecture: "Molecular Evolution"
1996F Graduate Student Instructor, General Endocrinology (IB137), University of California at Berkeley. Class Lectures: "Second Messengers in Endocrinology" and " Hormones and the Immune System"
1995S Graduate Student Instructor, Molecular Immunology (MCB150), University of California at Berkeley
1994S Graduate Student Instructor, Histophysiology (MCB132), University of California at Berkeley. Class Lectures: "Immune System" and "Endocrine System"

Publications

Papers

2007 Sato, Y. **Buchholz, D.R.**, Paul, B.D., Shi, Y.-B. A role of unliganded thyroid hormone receptor in postembryonic development in *Xenopus laevis*. Mech. Develop. 124:476-488.

2007 **Buchholz, D.R.**, Singamsetty, S., Karadge, U., Williamson, S., Langer, C.E., Elinson, R.P. Nutritional endoderm in a direct developing frog: A potential parallel to the evolution of the amniote egg. Dev. Dynamics 236:1259-1272.

2007 Paul, B.D., **Buchholz, D.R.**, Fu, L., Shi, Y.-B. SRC-p300 coactivator complex is required for thyroid hormone-induced amphibian metamorphosis. J. Biol. Chem. 282(10):7472-7481.

2007 **Buchholz, D.R.**, Heimeier, R.A., Das, B., Washington, T., Shi, Y.-B. Pairing morphology with gene expression in thyroid hormone-induced intestinal remodeling and identification of a core set of TH-induced genes across tadpole tissues. Devel. Biol. 303:567-590.

2006 Goodward, D.M., Barber, P.H., **Buchholz, D.R.** Geographic Distribution. *Scaphiopus couchii*. Herpetol. Rev. 37(3): 359-360.

2006 Gomez-Mestre, I. **Buchholz, D.R.** Developmental plasticity mirrors differences among taxa in spadefoot toads linking plasticity and diversity. Proc. Nat. Acad. Sci. 103(50): 19021-19026.

2006 Fu, L., Tomita, A., Wang, Hua, **Buchholz, D.R.** Shi, Y.-B. Transcriptional regulation of the *Xenopus laevis* stromelysin-3 gene by thyroid hormone is mediated by a DNA element in the first introl. J. Biol. Chem. 281 (25): 16870-16878.

2005 **Buchholz, D.R.**, Paul, B.D., and Shi, Y.-B. Gene-specific changes in promoter occupancy by thyroid hormone receptor during frog metamorphosis: Implications for developmental gene regulation. J. Biol. Chem. 280 (50): 41222-41228.

2005 Fu, L., Ishizuya-Oka, A., **Buchholz, D.R.**, Amano, T., Matsuda, H., and Shi, Y.-B. A causitive role of stromelysin-3 in extracellular matrix remodelling and epithelial apopotosis during intestinal metamorphosis in *Xenopus laevis*. J. Biol. Chem. 280 (30): 27856-27865.

2005 **Buchholz, D.R.** and Hayes, T.B. Variation in thyroid hormone action and tissue content underlies species differences in the timing of metamorphosis in desert frogs. Evolution and Development 7(5): 458-467.

2005* Paul, B.P., **Buchholz, D.R.**, and Shi, Y.-B. Tissue- and gene-specific recruitment of steroid receptor coactivator-3 by thyroid hormone receptor during development. J. Biol. Chem. 280 (29): 27165-27172.
*Chosen as JBC Paper of the Week (over 100 papers published per week).

2005 Paul, B.P., Fu, L., **Buchholz, D.R.**, and Shi, Y.-B. Coactivator recruitment is essential for liganded thyroid hormone receptor to initiate amphibian metamorphosis. Mol. Cell. Biol. 25 (13): 5712-5724. **Cover Image**.

2004 **Buchholz, D.R.**, Tomita, A., Fu, L., Paul, B.D., and Shi, Y.-B. Transgenic analysis reveals that thyroid hormone receptor is sufficient to mediate the thyroid hormone signal in frog metamorphosis. Mol. Cell. Biol. 24 (20): 9026-9037.

2004 **Buchholz, D.R.**, Ishizuya-Oka, A., and Shi, Y.-B. Spatial and temporal expression pattern of a novel gene in the frog *Xenopus laevis*: correlations with adult intestinal epithelial differentiation during metamorphosis. Mech. Devel./Gene Expression Patterns 4: 321-328.

2004 Tomita, A., **Buchholz, D.R.**, and Shi, Y.-B. Recruitment of N-CoR/SMRT-TBLR1 corepressor complex by unliganded thyroid hormone receptor for gene repression during frog development. Mol. Cell. Biol. 24 (8): 3337-3346.

2003 **Buchholz, D.R.**, Fu, L., and Shi, Y.-B. Cryopreservation of *Xenopus* transgenic lines. Molec. Reprod. Devel. 67: 65-69.

2003 **Buchholz, D.R.**, Hsia, V., Fu, L., and Shi, Y.-B. A dominant negative thyroid hormone receptor blocks amphibian metamorphosis by retaining corepressors at target genes. Mol. Cell. Biol. 23 (19): 6750-6758.

2003 Tomita, A., **Buchholz, D.R.**, Obata, K., and Shi, Y.-B. Fusion protein of retinoic acid receptor α with promyelocytic leukemia protein of promyelocytic leukemia zinc finger protein recruits N-CoR-TBLR1 corepressor complex to repress transcription *in vivo*. J. Biol. Chem. 278 (33): 30788-30795.

2003 Garcia-Paris, M., **Buchholz, D.R.**, and Parra-Olea, G. Phylogenetic relationships of Pelobatoidea re-examined using mtDNA. Mol. Phylogenet. Evol. 28 (1): 12-23.

2002 Fu*****, L., **Buchholz*, D.R.**, and Shi, Y.-B. Novel double-promoter approach for identification of transgenic animals: a tool for *in vivo* analysis of gene function and development of gene-based therapies. Molec. Reprod. Devel. 62 (4): 470-476. *equal contributors

2002 **Buchholz, D.R.** and Hayes, T.B. Evolutionary patterns of diversity in spadefoot toad metamorphosis (Anura:Pelobatidae). Copeia 2002(1): 180-189.

2000 **Buchholz, D.R.** and Hayes, T.B. Larval period comparison for the spadefoot toads *Scaphiopus couchii* and *Spea multiplicata* (Anura: Pelobatidae). Herpetologica. 56 (4): 455-468.

2000 **Buchholz, D. R.** and Ely, E. Geographic Distribution. *Taricha torosa*. Herpetol. Rev. 31(2): 108.

1995 **Buchholz, D.R.**, Scott, P., and Shastri, N. Presentation without proteolytic cleavage of endogenous precursors in the MHC class I antigen processing pathway. J. Biol. Chem. 270: 6515-22.

1995 Malarkannan, S., Goth, S., **Buchholz, D.R.**, and Shastri, N. The role of MHC class I molecules in the generation of endogenous peptide/MHC complexes. J. Immunol. 154: 585-98.

1994 Ruben, L.N., Ahmadi, P., Johnson, R.O., **Buchholz, D.R.**, Clothier, R.H. and Shiigi, S. Apoptosis in the thymus of developing *Xenopus laevis*. Devel. Comp. Immunol. 18(4): 343-52.

1994 Ruben, L.N., **Buchholz, D.R.**, Ahmadi, P., Johnson, R.O., Clothier, R.H., and Shiigi, S. Apoptosis in thymus and adult *Xenopus laevis*. Devel. Comp. Immunol. 18(4): 231-38.

Reviews

2006 **Buchholz, D.R.**, Paul, B.D., Fu, L., Tomita, A., and Shi, Y.-B. Molecular and developmental analyses of thyroid hormone receptor function in *Xenopus laevis*, the African clawed frog. Gen. Comp. Endo. 145: 1-19. **Cover Image**.

2003 Hsia, V. S.-C., Tomita, A., Obata, K., Paul, B., **Buchholz, D.R.**, and Shi, Y.-B. Role of chromatin disruption and histone acetylation in thyroid hormone receptor action: Implications in the regulation of HIV-1 LTR. Histol. Histopathol. 18(1): 323-331.

2001 Shi, Y.-B., Fu, L. Hsia, V., Tomita, A., and **Buchholz, D.R.** Thyroid hormone regulation of apoptotic tissue remodeling during anuran metamorphosis. Cell Res. 11(4): 245-252.

Book Chapters

2006 **Buchholz, D.R.**, Paul, B.D., and Shi, Y,-B. Chapter 11: Chromatin immunoprecipitation for *in vivo* studies of transcriptional regulation during development. *In* Analysis of Growth Factor Signaling in Embryos, pg. 257-271. Whitman, M. and Sater, A.K., eds. For "Methods in Signal Transduction" series, CRC Press.

Abstracts

2006 **Buchholz, D.R.**, Paul, B.P., Shi, Y.-B. Gene-specific function of thyroid hormone reeptor during development in the frog Xenopus laevis. J. Exp. Zool. Pt. A 305A(2):114.

2006 Menon, J.G., **Buchholz, D.R.** Hormones, oxidative stress and tissue remodeling during anuran metamorphosis. J. Exp. Zool. Pt. A 305A(2):155.

2005 **Buchholz, D.R.**, Paul, B.P., Shi, Y.-B. Gene-specific changes in promoter occupancy by thyroid hormone receptor during frog metamorphosis: implications for developmental gene regulation. Int. Comp. Biol. 45(6):971.

2004 **Buchholz, D.R.**, Tomita, A., Fu, L., Shi, Y.-B. A dominant positive thyroid hormone receptor induces gene regulation and metamorphic transformation in the absence of thyroid hormone in vivo in transgenic frogs. Int. Comp. Biol.

2003 Tomita A., **Buchholz, D.R.**, and Shi, Y,-B. PML-RAR and PLZF-RAR fusion proteins repress transcription by recruiting N-CoR-TBLR1 co-repressor complexes to target promoters in vivo. Blood 102 (11): 2177 Part 1.

2002 **Buchholz, D.R.**, Hsia, V., Fu, L., and Shi, Y.-B. *In-vivo* molecular mechanisms of thyroid hormone receptor during frog metamorphosis. Int. Comp. Biol. 42(6):1202-1203.

2000 Maglia, A. and **Buchholz, D.R.** Heterochrony and patterns of ontogenesis in pelobatiod frogs. Am. Zool. 40(6):1113-1114.

2000 **Buchholz, D.R.** and Hayes, T.B. Evolution of diversity in anuran tadpoles: accelerated metamorphosis in spadefoot toads. Am. Zool. 40(6):957.

1998 **Buchholz, D.R.** and Hayes, T.B. Endocrinological mechanisms of accelerated metamorphosis. Am. Zool. 38(5):86A.

1998 **Buchholz, D.R.** and Hayes, T.B. Physiological evolution in spadefoot tadpoles. Am. Zool. 37(5):116A.

1996 **Buchholz, D.R.** and Hayes, T.B. Comparative Larval Biology in Spadefoot Toads. Am. Zool. 36(5):97A.

1995 Hayes, T.B., Liu, R., and **Buchholz, D.R**. Interactions between sex steroids and the thyroid axis: a possible developmental constraint preventing the evolution of neoteny in anuran amphibians. Am. Zool. 35(5):129A.

1995 **Buchholz, D.R.**, Scott, P., and Shastri, N. Presentation without processing of endogenous precursors by MHC class-1. J. Cell. Biochem. 24-24 Suppl. 21A.

1994 Ruben, L.N., Ahmadi, P., Johnson, R.O., **Buchholz, D.R.**, Clothier, R.H., and Shiigi, S. The ontogeny of central tolerance to altered-self antigens in *Xenopus laevis*. Devel. Comp. Immunol. 18(Suppl. 1):S94.

Meeting Presentations

Invited Talks

2007 **Buchholz, D.R.** Honored Young Investigator Lecture: “In the light of Gudernatsch: Thyroid hormone receptor and frog metamorphosis” International

Symposium on amphibian and reptile endocrinology and neurobiology, Berkeley, CA.

2005 **Buchholz, D.R.** Cryopreservation of *Xenopus* transgenic lines. Sixth Congress on Reproductive Biomedicine, Tehran, Iran.

2005 **Buchholz, D.R.** Hormones in developoment and evolution: From model systems to evolutionary diversity. Musée d'Histoire Naturelle, Paris, France.

2005 **Buchholz, D.R.** Hormones in developoment and evolution: From model systems to evolutionary diversity. University of Michigan, Ann Arbor.

2005 **Buchholz, D.R.** Hormones in developoment and evolution: From model systems to evolutionary diversity. Smithsonian National Museum of Natural History, Zoology Seminar Series.

2003 **Buchholz, D.R.** Transgenic analysis of the molecular mechanisms of thyroid hormone receptor during frog metamorphosis. Hormones and Development Gordon Research Conference, New London, CT.

2001 **Buchholz, D.R.** and Hayes, T.B. Evolution of diversity in anuran tadpoles: Accelerated metamorphosis in spadefoot toads. Metamorphosis symposium, Society of Integrative and Comparative Biology, Chicago, IL.

1997 **Buchholz, D.R.** "Evolutionary Endocrinology of Accelerated Metamorphosis." Ecology Lunch, Stanford University

Oral Presentations

2007 **Buchholz, D.R**. Diverse responses with identical genes: Core thyroid hormone-induced genes across tissues during frog metamorphosis, Society for Integrative and Comparative Biology, Phoenix, AZ.

2006 **Buchholz, D.R.**, Paul, B.D., Shi, Y.-B. Gene-specific promoter binding by thyroid hormone receptor: Implications for developmental gene regulation. Society for Integrative and Comparative Biology, Orlando, FL.

2005 **Buchholz, D.R.** Endocrine evolution and heterochronic sex differentiation in desert frogs. Developmental Basis of Evolutionary Change, Chicago, IL. See **News Story** in Science 310:1109-1110.

2004 **Buchholz, D.R.**, Tomita, A., Fu, L., and Shi, Y.-B. A dominant positive thyroid hormone receptor induces gene regulation and metamorphic transformation in the absence of thyroid hormone *in vivo* in transgenic frogs. Society of Integrative and Comparative Biology, New Orleans, LA.

2003 **Buchholz, D.R.**, Hsia, V., Fu, L., and Shi, Y.-B. Transgenic Analysis of the Molecular Mechanism of Thyroid Hormone Receptor during frog metamorphosis. Hormones and Development Gordon Conference, New London, CT.

2003 **Buchholz, D.R.**, Hsia, V., Fu, L., Shi, Y.-B. *In-vivo* molecular mechanisms of thyroid receptor during frog metamorphosis. Society of Integrative and Comparative Biology, Toronto, Canada.

2002 **Buchholz, D.R.**, Espira, A., Barber, P. and Hayes, T.B. Juvenile color pattern and sexual dichromatism in endemic African reed frog family, Hyperoliidae. Society of Integrative and Comparative Biology, Anaheim, CA.

2001 **Buchholz, D.R.**, Espira, A., Barber, P. and Hayes, T.B. Endocrinology of sexual dichromatism in endemic African reed frog family, Hyperoliidae. New England Endocrinology Conference, Storrs, CT.

2001 **Buchholz, D.R.**, Espira, A., Barber, P. and Hayes, T.B. Evolution of sexual dichromatism in African reed frogs. Society for the Study of Amphibians and Reptiles, Indianapolis, IN.

2001 **Buchholz, D.R.** and Hayes, T.B. Evolution of diversity in anuran tadpoles: Accelerated metamorphosis in spadefoot toads. Society of Integrative and Comparative Biology, Chicago, IL.

2001 Maglia, A. and **Buchholz, D.R**. Heterochrony and osteogenesis in pelobatoid frogs. Society of Integrative and Comparative Biology, Chicago, IL.

2000 **Buchholz, D.R**. Endocrinology of Accelerated Metamorphosis in Spadefoot Toads. New England Endocrinology Conference, University of New Hampshire, Durham, NH.

2000 **Buchholz, D.R.**, and Hayes, T.B. Morphological consequences of accelerated metamorphosis. Western Regional Conference in Comparative Endocrinology, Corvallis, OR.

1999 **Buchholz, D.R.**, and Hayes, T.B. Endocrinological mechanisms of accelerated metamorphosis. Society of Integrative and Comparative Biology, Denver, CO.

1998 **Buchholz, D.R.**, and Hayes, T.B. Evolutionary endocrinology of accelerated metamorphosis in spadefoot toads. American Society of Ichthyologists and Herpetologists/ Herpetological League/ Society for the Study of Amphibians and Reptiles, Guelph, Ontario.

1998 **Buchholz, D.R.**, and Hayes, T.B. Mechanisms of accelerated metamorphosis in spadefoot toads. Western and Southwestern Regional Conference in Comparative Endocrinology, Flagstaff, AZ.

1997 **Buchholz, D.R.**, and Hayes, T.B. Comparative tadpole growth and development in desert spadefoot toads (*Scaphiopus couchii* and *Spea multiplicata*: Pelobatidae). American Society of Ichthyologists and Herpetologists, Seattle, WA.

1996 **Buchholz, D.R.**, and Hayes, T.B. Comparative Larval Biology in Spadefoot Toads. Society of Integrative and Comparative Biology, Albuquerque, NM.

1994 **Buchholz, D.R.**, Scott, P., and Shastri, N. Presentation without proteolytic cleavage of endogenous precursors in the MHC class I antigen processing pathway. U.C. San Francisco/U.C. Berkeley Immunology Conference, Lake Tahoe, CA.

Posters

2005 **Buchholz, D.R.**, Paul, B.D., and Shi, Y.-B. Gene-specific function in thyroid hormone receptor during development in the frog *Xenopus laevis*. 15th Internatinal Congress of Conparative Endocrinology, Boston, MA.

2005 Menon, J.G., **Buchholz, D.** Hormones, oxidative stress and tissue remodelling during anuran metamorphosis. 15th Internatinal Congress of Conparative Endocrinology, Boston, MA.

2004 **Buchholz, D.R.**, Tomita, A., Fu, L., Paul, B.D., and Shi, Y.-B. Dominant positive thyroid hormone receptors induce metamorphosis without hormone. IXth International *Xenopus* Meeting, Woods Hole, MA.

2003 **Buchholz, D.R.**, Hsia, V., Fu, L., Tomita, A., and Shi, Y.-B. Dominant mutant thyroid hormone receptors in post-embryonic frog development. Hormones and Development Gordon Conference, New London, CT.

2002 Marinez-Solano, I. Garcia-Paris, M., Parra-Olea, G. and **Buchholz, D.R.** Current evolutinoary problems on Archaeobatrachia. World Congress on Herpetology, Sri Lanka.

2001 **Buchholz, D.R.**, and Shi, Y.-B. Study of thyroid hormone receptor function using chimeric receptors in *Xenopus laevis*. Gordon Conference on Metamorphosis, New London, CT.

1994 **Buchholz, D.R.**, and Shastri, N. Presentation without processing of endogenous precursors in the MHC class I antigen processing pathway. Western Conference in Immunology, Berkeley, CA.

1993 **Buchholz, D.R.**, and Shastri, N. The simplest possible antigen processing pathway. U.C. San Francisco/U.C. Berkeley Immunology Conference, Lake Tahoe, CA.

1993 **Buchholz, D.R.**, and Shastri, N. The simplest possible antigen processing pathway. Western Conference in Immunology, Berkeley, CA.

Seminars

2005 **"**Hormones in Development and Diversity: Molecular and genetic analyses of thyroid hormone receptor in frog metamorphosis." William Paterson University Seminar Series, Wayne, NJ.

2004 "Role of thyroid hormone receptor in development and the origin of intestinal stem cells." Department of Pathology Seminar, University of Florida, Gainesville.

2000 "Accelerated metamorphosis in spadefoot toads." Departmental Seminar, Departement of Integrative Biology, University of California at Berkeley

1999 "A case study in comparative physiology: Accelerated metamorphosis in spadefoot toads." Herpetology Seminar, University of California at Berkeley

1999 "Thyroid Physiology and Larval Period Length in Spadefoot Toads" Comparative Physiology and Endocrinology Seminar, University of California at Berkeley

1998 "Phylogenetic Analysis of the Pelobatoidea: Anura. Integrative Biology Graduate Student Symposium, University of California at Berkeley

1998 "Evolution and Mechanisms of Accelerated Metamorphosis in Spadefoot Toads" Comparative Physiology and Endocrinology Seminar, University of California at Berkeley

1997 "Evolutionary Endocrinology of Accelerated Metamorphosis." Herpetology Seminar, University of California at Berkeley

1997 "Accelerated Metamorphosis in Spadefoot Toads." Integrative Biology Graduate Student Symposium, University of California at Berkeley

1997 "Comparative growth and development in larval spadefoot toads." Comparative Physiology and Endocrinology Seminar, University of California at Berkeley

1996 "Comparative larval biology in the spadefoot toads, *Scaphiopus couchii* and *Spea multiplicata*." Herpetology Seminar, University of California at Berkeley

1994 "Mechanism of MHC class I antigen processing." Seminar for Prospective Graduate Students, University of California at Berkeley

Professional Activities

Collecting Trips:

2005 Northumberland Co. Pennsylvania
2004 Pamlico Co., North Carolina
2004 Salta Province, Argentina
2003 Lake Victoria region of Uganda and Kenya
2001-2 Pamlico Co., North Carolina
2000 New Zealand
2000 Marsabit, Tsavo, and coastal Kenya, northern and central Tanzania
1999 Cameroon
1998 Bursa, Turkey
1998 Uganda, Kenya, northern Tanzania
1997 Ksar-el-Kebir, Larache Prov. and La Mamora Forest, Kenitra Prov., Morocco
1997 Parque Nacional de Doñana, Spain
1997 Cochise Co., AZ
1997 Inyo Co., CA
1997 Callaway Co., MO
1996 Buenos Aires National Wildlife Refuge, Pima Co., AZ
1996 Nakuru and Arabuko Sokoke Forest, Kenya
1995-8 Corral Hollow Rd. and Del Puerto Canyon, San Juaquin Co., CA

Courses Taught:

2007 Develop Lecture and Lab for Frog Transgenesis at the Cold Springs Harbor Laboratory course, Cell and Developmental Biology of *Xenopus*.

Languages:

French: Reading, excellent. Writing, good. Speaking, fair.

Training Courses:

2006 Grant Writer's Workshop, University of Cincinnati.
2006 Animal User Orientation with Rodent Module, University of Cincinnati.
2006 A Field Guide to Genbank and NCBI Molecular Biology Resources, National Library of Medicine, NIH.
2006 GeneSpring GX 7.3 Overview Training Program, Center for Information Technology, NIH.
2006 FileMaker Pro 7/8 Advanced Computer Training Program, Center for Information Technology, NIH.
2005 FileMaker Pro 7/8 Intermediate Computer Training Program, Center for Information Technology, NIH.
2005 Teaching Skills Workshop, HHMI Education Group, NIH.
2003 Animal Use Refresher Course for NIH Animal Users, NIH.
2001 PCR and Molecular Hybridization Technology, FAES Graduate School at NIH.
2000 NIH Lecture on Radiation Safety in the Laboratory
2000 NIH Lecture on Guidelines for Using Animals in Intramural Research
1998 Preliminary Good Laboratory Practice Training, University of California at Berkeley
1994 Laboratory Animal Techniques Training Seminar, University of California at Berkeley

1993 Introduction to the Theory of Separation, Hewlett Packard

1993 Training Conference for Graduate Student Instructors, University of California at Berkeley

Memberships:

1998- Society for the Study of Amphibians and Reptiles

1997- American Society of Ichthyologists and Herpetologists

1996- Society of Integrative and Comparative Biologists (Life Member)