

CURRICULUM VITAE

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Education

Ph.D., Zoology, University of California, Berkeley, 1985
 B.A., Anthropology, University of Oregon, 1976

Professional Experience

- 2003-present: Professor, Department of Biology, Coordinator of Environmental Science and Policy Program Hartwick College, Oneonta, NY 13820
- 1995-2003: Associate Professor, Department of Biology, Hartwick College, Oneonta, NY 13820.
- 1989-1995: Assistant Professor, Department of Biology, Hartwick College; Chair of Science Division, 1994-1996; Coordinator of Environmental Science and Policy Program, 1994-1996.
- 1985-1989: Research Associate, Developmental Biology Center, University of California, Irvine.
- 1984-1985: Research Associate, Department of Zoology, University of Leicester, U.K.
- 1978-1984: Research Assistant, Museum of Vertebrate Zoology, University of California, Berkeley.
- 1973-1978: Research Assistant, Department of Biology, University of Oregon.

Honors, Awards, and Grants

- Winifred D. Wandersee Scholar-in-Residence Award, Hartwick College, 2008-2009.
- Freedman Award in Science (with Dustin Jones, '09), Hartwick College: Heart bioengineering in red-spotted newts, *Notophthalmus viridescens*, 2008-09.
- Freedman Award in Cognitive Science (with Yuri Mataev, '09), Hartwick College: Brain regeneration in the red-spotted newt, *Notophthalmus viridescens*.
- Corning foundation Grant, Biotechnology program, Hartwick College, 2008.
- NSF RUI research grant: "Collaborative Research: Community ecology as a framework for understanding disease dynamics" (Jan 2006 – Jan 2009).
- Hartwick College Board of Trustees Research Grants and Student Research Fellowships (1990-present).
- Rockefeller Foundation Fellowship, Institute for Electronic Arts, Alfred University (2001-2002)
- Margaret B. Bunn Award for Outstanding Teaching, Hartwick College, 2001
- Winifred D. Wandersee Scholar-in-Residence Award, Hartwick College, 1998-1999.
- Oregon Community Foundation Grant to support research on deformed amphibians (1998).
- Hartwick College Teacher/Scholar Award, Teacher Excellence Program of the Independent College Fund of New York, 1996
- Culpeper Grant for use of computer-assisted micro-image analysis in the classroom (1996)
- Project Kaleidoscope *Faculty for the 21st Century*
- Highlands Foundation Research Grant, 1994
- Bowerman Foundation Grant, 1986 and 1989.
- Highlands Foundation Grant-in-Aid, 1987.
- Nuffield Foundation Grant, U.K., 1985.
- Annie M. Alexander Fellowship, U.C. Berkeley, 1983.
- Distinguished Teaching Assistant Award, U.C. Berkeley, 1983.
- Kellogg Grant-in-Aid, U.C. Berkeley, 1982.
- Stoye Award for best presented paper, 61st Annual meeting of the American Society of Ichthyologists and Herpetologists, 1981.
- Tinker Grant-in-Aid for Latin American Studies, U.C. Berkeley, 1981.

Professional Memberships

American Association for the Advancement of Science
 American Society of Ichthyologists and Herpetologists
 Beta Beta Beta National Biology Honors Society (Advisor, 1990-93)
 Herpetologists' League
 Society for the Study of Reptiles and Amphibians

Other

Doctoral committee, Dr. Geoffrey Stopper, Yale University
 Doctoral committee, Dr. Sarah Turtle, University of New Hampshire
 Masters committee, Eric Dieffenbacher, Marshall University

Publications (* = undergraduates)

Books and Book Chapters:

- Sessions, S.K., T. Raffel, and J.R. Rohr. (in press). Parasites and Amphibians. Chapter 4. *In: Amphibian Biology, Conservation and Decline of Amphibians* (H. Heatwole, ed.). Chipping Norton, Australia: Surrey Beatty & Sons.
- Green, D.M. and S.K. Sessions. 2007. Karyology and cytogenetics. *In: Amphibian Biology, Vol. 7* (H. Heatwole and M. Tyler, eds.). Chipping Norton, Australia: Surrey Beatty & Sons.
- Sessions, S.K. (2003). The Proteidae. *In: Grzimek's Animal Life Encyclopedia*. Gale Group.
- Sessions, S.K. (2003). What is Causing Deformed Amphibians? *In: Amphibian Conservation* (R. D. Semlitsch, ed.), Smithsonian Press, Washington, D.C.
- Sessions, S.K., Adam Franssen*, Vanessa Horner*, Louise Hecker*, and Geoffrey Stopper* (2001). Update On Deformed Amphibian Research at Hartwick College. *In: Catskill Ecosystem Health* (M. S. Adams, ed.), Purple Mountain Press.
- Sessions, S.K. and J.L. Wiktorowski*. (2000). Population cytogenetics of the plethodontid salamander *Eurycea wilderae*. *In: The Biology of Plethodontid Salamanders* (R. C. Bruce et al., eds.), Plenum.
- Sessions, S.K. 1996. Chromosomes: Molecular Cytogenetics. *In: "Molecular Systematics"*, Second Edition (D.M. Hillis and C. Moritz, eds.), Sinauer.
- Green, D.M., and S.K. Sessions. 1991. Amphibian Cytogenetics and Evolution. Academic Press, 1991.
- Sessions, S.K. 1990. Chromosomes: Molecular Cytogenetics. *In: "Molecular Systematics"* (D.M. Hillis and C. Moritz, eds.), Sinauer, 1990.

Articles and Reviews:

- Ballengeé, B. and S.K. Sessions. (2009). "Traumelia": Limb deformities induced by selective predation in natural populations of amphibians (in review.)
- Sessions, S.K. (2008). Malformed frogs (book review), *Herpetological Review* (in press).
- Rohr, JR, Raffel, TR, Sessions, SK, Hudson, PJ. (2008). Understanding the net effects of pesticides on amphibian trematode infections. *Ecological Applications* (in press).
- Sessions, S.K., M. Stöck, D.R. Vieites, R. Quarles*, M.S. Min, and D.B. Wake (2008). Cytogenetic analysis of the Asian plethodontid salamander, *Karsenia koreana*: evidence for karyotypic conservation, chromosome repatterning, and genome size evolution. *Chromosome Research* (in press).
- Sessions, S.K. (2008). Evolutionary cytogenetics in salamanders. *Chromosome Research* 16:183-201.
- Houck, A., and S.K. Sessions (2006). Could atrazine affect the immune system of the frog, *Rana pipiens*? *Bios* 77:107-112.
- Sessions, S.K. (2005). The Trouble with Amphibians: An Example of Science in Action at the Undergraduate level. *Bios* 76:134-136.

- Iizuka, K., S. K. Sessions, S. Yasugi, T. Nakazato, and Y. Takeuchi (2005). Analysis of the form and evolutionary implications of the interdigital membrane of larval hynobiid salamanders. *Herpetologia Petropolitana* (Ananjeva N. and O. Tsinenko, eds.) 148-154.
- Sessions, S. K. (2002). James Kezer, pioneer in amphibian cytogenetics and teacher extraordinaire (obituary). *Herpetological Review* 33.
- Stopper*, G., L. Hecker*, R.A. Franssen*, and Sessions, S.K., (2002). How parasites cause deformities in amphibians. *Journal of Experimental Zoology* (Mol Dev Evol) 294:252-263.
- Hecker*, L. and S. K. Sessions (2001). Developmental analysis of limb deformities in amphibians. *Bios* 72
- Brinkman, J.N., S.K. Sessions, A. Houben, and D.M. Green (2000). Structure and evolution of supernumerary chromosomes in the Pacific giant salamander, *Dicamptodon tenebrosus*. *Chromosome Research* 8:477-485.
- Sessions, S.K. (1999). Status and Conservation of Midwestern Amphibians (review). *Herpetological Review* 30.
- Sessions, S.K., R.A. Franssen*, and V.L. Horner* (1999). Morphological clues from multilegged frogs: are retinoids to blame? *Science* 284:800-802.
- Sessions, S.K. 1998. Frog deformities (letter) *Science* 279:461-462.
- Sessions, S.K. 1998. Amphibians and trematodes. *Froglog* 26:1-2.
- Sessions, S.K. 1993. The art and science of fluorescence microscopy (review). *Systematic Biology* 42:224-225.
- Sessions, S.K. 1992. Developmental evolution: it's all in the timing (review). *Quarterly Review of Biology* 67:498-501.
- Sessions, S.K. 1991. Cytogenetics of amphibians and reptiles (review). *Herp Review* 22:29-30.
- Hayamizu, T.F., S.K. Sessions, N. Wanek, and S.V. Bryant. 1991. Effects of localized application of transforming growth factor beta-1 on developing chick limbs. *Developmental Biology* 145:164-173.
- Sessions, S.K. 1990. Molecular approaches to protein structure and function, applications to cell and developmental biology (review). *Quarterly Review of Biology* 65:499-500.
- Macgregor, H.C., S.K. Sessions, and J. W. Arntzen. 1990. An integrative analysis of phylogenetic relationships among newts of the genus *Triturus* (family Salamandridae), using comparative biochemistry, cytogenetics and reproductive interactions. *Journal of Evolutionary Biology* 3:329-373.
- Sessions, S.K. and S.B. Ruth. 1990. An explanation for naturally occurring supernumerary limbs in amphibians. *Journal of Experimental Zoology* 245:38-47.
- Kezer, J., S.K. Sessions, and P. León (1989): The meiotic structure and behavior of the strongly heteromorphic X/Y sex chromosomes of neotropical plethodontid salamanders of the genus *Oedipina*. *Chromosoma* 98:433-442.
- Sessions, S.K. (1989): Toward a developmental understanding of evolution. *BioScience* 39:566-567 (book review).
- Sessions, S.K., D.M. Gardiner, and S.V. Bryant (1989). Compatible limb patterning mechanisms in urodeles and anurans. *Developmental Biology* 131:294-301.
- Sessions, S.K., H.C. Macgregor, M. Schmid, and T. Haaf (1988). Cytology, embryology, and evolution of the developmental arrest syndrome in newts of the genus *Triturus*. *Journal of Experimental Zoology* 248:321-334.
- Sessions, S.K. and S.V. Bryant (1988): Evidence that regenerative ability is an intrinsic property of limb cells in *Xenopus*. *Journal of Experimental Zoology* 247:39-44.
- Villalobos, M., P. León, S.K. Sessions, and J. Kezer (1988). Enucleated erythrocytes in plethodontid salamanders. *Herpetologica* 44:243-250.
- Sessions, S.K. and A. Larson (1987). Developmental correlates of genome size in plethodontid salamanders and their implications for genome evolution. *Evolution* 41:1239-1251.
- Sessions, S.K. and J. Kezer (1987). Cytogenetic evolution in the plethodontid genus *Aneides*. *Chromosoma* 95:17-30.

- Sessions, S.K. (1986). Thoughts on genome size: The controversy continues. (book review), *Cell* 45:473-474.
- Macgregor, H.C. and S.K. Sessions (1986). The biological significance of variation in satellite DNA and heterochromatin in newts of the genus *Triturus*: an evolutionary perspective. *Phil.Trans. Roy.Soc. London B* 312:243-259.
- Macgregor, H.C. and S.K. Sessions (1986). Models for evolution in large genomes and karyotypes in urodeles. Symposium V: Karyotype conservation and diversification, mechanisms of DNA rearrangement. *Verh. Dtsch. Zool. Ges.* 79:137-148.
- Sessions, S.K. and J.E. Wiley (1985). Chromosome evolution in salamanders of the genus *Necturus*. *Brimleyana* 10:37-52.
- Sessions, S.K. (1984). Cytogenetics and evolution in salamanders. Ph.D. dissertation, University of California, Berkeley.
- Sessions, S.K. (1982). Cytogenetics of diploid and triploid salamanders of the *Ambystoma jeffersonianum* complex. *Chromosoma* 84:599-621.
- Sessions, S.K., P. León, and J. Kezer (1982). Cytogenetics of the Chinese Giant Salamander, *Andrias davidianus* (Blanchard): the evolutionary significance of cryptobranchoid karyotypes. *Chromosoma* 86:341-357.
- Schwenk, K., S.K. Sessions, and D. Peccinini-Seale (1982). Karyotypes of the basiliscine lizards *Corytophanes cristatus* and *Corytophanes hernandesii*, with comments on the relationship between chromosomal and morphological evolution in lizards. *Herpetologica* 38:493-501.
- Kimmel, C.B., S.K. Sessions, and R.J. Kimmel (1981). Morphogenesis and synaptogenesis of the zebrafish Mauthner neuron. *J. Comp. Neurology* 198:101-120.
- Kezer, J., P. Leon, and S.K. Sessions (1980). Structural differentiation of the meiotic and mitotic chromosomes of the salamander, *Ambystoma macrodactylum*. *Chromosoma* 81:177-197.
- Sessions, S.K. (1980). Evidence for a highly differentiated sex chromosome heteromorphism in the salamander *Necturus maculosus* (Rafinesque). *Chromosoma* 77:157-168.
- Kimmel, C.B., S.K. Sessions, and R.J. Kimmel (1979). Target recognition in neurogenesis: formation of the Mauthner axon cap. *Proc. Natl. Acad. Sci. USA* 76:4691-4694.
- Kezer, J. and S.K. Sessions (1979). Chromosomal variation in the plethodontid salamander, *Aneides ferreus*. *Chromosoma* 71:65-80.
- Kimmel, C.B., S.K. Sessions, and R.J. Kimmel (1978). Radiosensitivity and time of origin of Mauthner neuron in the zebra fish. *Devel. Biol.* 62:526-529.
- Sessions, S.K. (1978). The chromosomes of *Anotheca spinosa* (Stejneger), family Hylidae. *Herpetologica* 34:70-73.
- Sessions, S.K. (1977). Egg capsules and embryos of the bolitoglossine salamander, *Lineatriton lineola* (Cope). *Herpetologica* 33:452-454.
- Kimmel, C.B., S.K. Sessions and M.C. Macleod (1976). Evidence for an association of most nuclear RNA with chromatin. *J. Mol. Bio.* 102:177-191.

Invited Talks

- New York State Museum Lecture Series, Biodiversity Research Institute, Spring 2008, Biology & Conservation: Do we still have to worry about deformed amphibians?
- Sullivan County Community College, 2007: Amphibians as Environmental Indicators: The Effects of Pollutants, Parasites, and Predators on /Disease in Frogs, Salamanders, and Toads.
- Roberson Museum and Science Center, Spring Lecture Series, 2007: Frog Ponderings: What's Happening and Why Should We Care?
- Cambridge University, Department of Veterinary Medicine, Cambridge Resource Center for Comparative Genomics, 2006: Evolutionary cytogenetics in salamanders.
- Upper Hudson Phi Beta Kappa Honors Society: Amphibians as Environmental Indicators. RPI, 2004.

- Inauguration speech, Tri-beta Biology Honors Society, State University College at Oneonta, 2004: The Trouble with Amphibians: An Example of Science in Action at the Undergraduate level.
- Sigma Xi, Villanova University, 2004: Update on Research on Deformed Amphibians
- Pan American Advanced Studies Institute (PASI) and Integrated Research Challenges in Environmental Biology (IRCEB): Declining Amphibians, La Selva Biology Station (OTS), 2004: Deformed and Malformed Amphibians.
- Binghamton University, 2002: What happened to the deformed amphibians?
- Ithaca College, 2001: What is causing deformed amphibians?
- University of Washington, Fred Hutchinson Cancer Research Center, 2000: Update on research on deformed amphibians.
- Hofstra University, 2000: Deformed amphibians: what now?
- Symposium of the Catskill Institute for the Environment: "Indicators of Catskill Ecosystem Health", SUNY Delhi, 1999: Update On Deformed Amphibian Research at Hartwick College.
- American Association for the Advancement of Science Annual Meeting: Challenges for a New Century, Anaheim, California, 1999: Symposium on Education, Entertainment, and Literacy: Deformed frogs: what does the evidence tell us?
- Union College, 1999: Deformed frogs: what does the evidence tell us?
- Upstate Herpetological Association, Syracuse, NY, 1998: The role of parasites in amphibian deformities.
- National Science Foundation Workshop: Mechanisms of Developmental Disruption in Amphibians, San Diego, 1998: Parasites and amphibian malformations.
- Sigma Xi Lecture, Hartwick College 1998: Mutant frogs: pollution or parasite?
- Siena College, 1998: Deformed amphibians: the role of natural phenomena.
- SUNY Cortland, 1998: Deformed amphibians: the role of natural phenomena.
- SUNY Cobleskill, 1998: Deformed amphibians: the role of natural phenomena.
- University of New Hampshire, 1998: Deformed amphibians: the role of natural phenomena.
- State University of New York College at Oneonta, 1997: What is causing the deformed frogs?
- State University of New York at Albany, 1997. Deformed amphibians: the role of natural phenomena.
- Special symposium, 18th Annual meeting of the Society of Environmental Toxicology and Chemistry, San Francisco, 1997: Evidence that deformed frogs are caused by natural phenomena.
- Syracuse University, 1997. Deformed amphibians: the role of natural phenomena.
- Wells College, 1997. Deformed amphibians: the role of natural phenomena.
- U.S. Environmental Protection Agency Workshop on Evaluating the increase of amphibian malformations, April 15-16, 1997, Shenandoah National Park, Virginia: Amphibian deformities: the role of natural phenomena.
- U.S. Environmental Protection Agency Workshop on Central North American Amphibian Limb Deformities, September 25-26, 1996, Duluth, Minnesota: An explanation for the occurrence of supernumerary limbs in natural populations of amphibians.
- Villanova University, 1996. An explanation for the occurrence of supernumerary limbs in natural populations of amphibians.
- Cornell University, Ithaca, NY, 1995: Phenotypic correlates of genome size variation in plethodontid salamanders.
- SUNY Oneonta, Oneonta, NY, 1995: Phenotypic correlates of genome size variation in plethodontid salamanders.
- SUNY Binghamton, Binghamton, NY, 1994: Phenotypic correlates of genome size variation in plethodontid salamanders.
- Smith College, Northampton, NY, 1993: Morphological correlates of genome size variation in plethodontid salamanders.
- University of Massachusetts, Amherst, MA, 1993: The developmental basis of morphological evolution of the vertebrate limb.

- SUNY Albany, Albany, NY 1992: Morphological correlates of genome size variation in plethodontid salamanders.
- Siena College, Albany, NY, 1992: The mystery of the polylegged frogs.
- Roundtable Workshop: "The Relationship of Development to Morphological Evolution", The Fourth International Congress of Systematic and Evolutionary Biology, 1990: University of Maryland, Baltimore.
- SUNY Stony Brook, Stony Brook, NY, 1990: A developmental perspective on the structure and evolution of vertebrate limbs.
- McGill University, Montreal, Quebec, Canada, 1989: The developmental basis of morphological evolution of the vertebrate limb.
- Cornell University, Ithaca, NY, 1989: The developmental basis of morphological evolution in the vertebrate limb.
- Harvard University, Cambridge, MA, 1989: The developmental basis of homology: an experimental approach.
- Reed College, Portland, OR, 1989: The control of pattern formation during limb development and regeneration.
- Tulane University, New Orleans, LA, 1988: An experimental approach to the problem of homology in the evolution of the tetrapod limb.
- The Highlands Biological Station, Highlands, NC, 1987: The evolution of genome size in salamanders of the family Plethodontidae.
- Symposium of the German Zoological Society, 1986: Karyotype conservation and diversification, mechanisms of DNA rearrangement. Munich, F.R. Germany. Models for evolution in large genomes and karyotypes of urodeles (with H.C. Macgregor).
- University of Heidelberg, F.R. Germany, 1985: The biological significance of large differences in genome size in plethodontid salamanders.
- Max Planck Institute for Biology, Tübingen, F.R. Germany, 1985: Current progress in the study of cytogenetics in European newts of the genus *Triturus*: Development, cytogenetics, and evolution in the genus *Triturus*.
- Discussion Meeting of the London Royal Society, 1985: The evolution of DNA sequences, London, U.K. The biological significance of variation in satellite DNA and heterochromatin in newts of the genus *Triturus*: an evolutionary perspective, (with H.C. Macgregor).
- 25th Anniversary Symposium of the Society for the study of Amphibians and Reptiles, 1982: Molecular and Genomic Evolution of Amphibians and Reptiles, North Carolina State University. The significance of sex chromosomes in the evolution of salamander genomes.

Abstracts and Symposia

- Endocrine Disruptors and Amphibians: Analysis of the Effects of Two Common Environmental Pollutants, presented at the Annual Biomedical Research Conference for Minority Students (ABRCMS); October 15 - 18, 2003, in San Diego, CA (presenter: Clarence Owens* '05).
- 51st Annual Meeting of the Japanese Society of Chromosome Research, 2000: "Jim Kezer: Pioneer in Salamander Chromosome Research" (with K. Iizuka, J. Applegarth, Y. Takeuchi, and T. Nadashi).
- Northeast Division of Fish and Wildlife Meeting, Saratoga, NY 2000: Cause of Amphibian Malformations in Selected Ponds in New York State (with E. Paul and H.A. Simonin of the New York DEC).
- Fourth Conference on the Biology of Plethodontid Salamanders, sponsored by the Highlands Biological Station, 1998: Population cytogenetics in *Eurycea wilderae* (with Jodi Wiktorowski)
- American Society of Ichthyologists and Herpetologists, 77th Annual Meeting, University of Washington, Seattle, WA, 1997: Deformed amphibians: the role of natural phenomena.
- XXII Annual Biological Sciences Symposium, SUNY Binghamton, 1997: Deformed amphibians: the saga continues!

- The North American Amphibian Monitoring Program 3rd Annual Meeting, 1997: Evidence that Trematodes Cause Deformities, including Extra Limbs, in Amphibians (<http://www.im.nbs.gov/naamp3/papers/54/54df.html>).
- XXI Annual Biological Sciences Symposium, SUNY Binghamton, 1996: An explanation for naturally occurring supernumerary limbs in amphibians.
- XX Annual Biological Sciences Symposium, SUNY Binghamton, 1995: Cytogenetics and phylogeny in desmognathine salamanders (with Annette Jones).
- XIX Annual Biological Sciences Research Symposium, SUNY Binghamton, 1994: An analysis of gene flow and genetic drift using an inversion polymorphism in the plethodontid salamander, *Eurycea wilderae*.
- Third Conference on the Biology of Plethodontid Salamanders, 1992, Highlands Biological Station, Highlands, NC: Genome size and morphological evolution in plethodontid salamanders.
- 1991 Annual Joint Meeting of the Society for the Study of Amphibians and Reptiles and the Herpetologists' League, Pennsylvania State University: Phenotypic correlates of genome size variation in plethodontid salamanders (with M. Walsh).
- The 1989 Centennial Meeting of the American Society of Zoologists, Boston, MA, 1989: Effects of localized application of retinoic acid on pattern in developing and regenerating salamander limbs (with N. Wanek and S.V. Bryant).
- 69th Annual Meeting, American Society of Ichthyologists and Herpetologists, "Amphibian Cytogenetics and Evolution" Symposium, San Francisco State University, San Francisco, CA, 1989: Phylogenetic patterns of chromosomal and genome size differentiation in bolitoglossine salamanders, family Plethodontidae (with James Kezer).
- Meeting of the American Society of Zoologists, San Francisco, CA, 1988: An experimental approach to problems of homology in the tetrapod limb (with D.M. Gardiner and S.V. Bryant).
- Society for the Study of Evolution, Asilomar, Pacific Grove, CA, 1988: An explanation for naturally occurring supernumerary limbs in amphibians (with S.B. Ruth).
- West Coast Regional Conference of the Society for Developmental Biology. Asilomar, Pacific Grove, CA, 1988: An experimental analysis of tetrapod limb homology (with D.M. Gardiner and S.V. Bryant).
- Sixth Biennial Regeneration Forum, Ohio State University, 1987: Evidence that regenerative ability is an intrinsic property of limb cells in *Xenopus*.
- Sixth Biennial Regeneration Forum, Ohio State University, 1987: Homology of patterning mechanisms between vertebrates (with D.M. Gardiner).
- Society for the Study of Evolution, Montana State University, 1987: Development and evolution of the tetrapod limb.
- Third International Congress of Systematic and Evolutionary Biology, University of Sussex, U.K., 1985: The biological significance of "extra" DNA in plethodontid salamanders.
- Joint annual meeting of the American Society of Ichthyologists and Herpetologists, The Herpetologists' League, and the Society of the Study of Amphibians and Reptiles, University of Oklahoma, 1984: Mechanisms of morphogenesis in ontogeny and phylogeny: evidence from limb regeneration in plethodontid salamanders.
- 65th annual meeting of the American Association for the Advancement of Science, Pacific Division, San Francisco, CA, 1984: Morphogenesis in ontogeny and phylogeny: a cellular perspective.
- 26th annual meeting of the Society for the Study of Amphibians and Reptiles, and 31st annual meeting of the Herpetologists' League, University of Utah, 1983: Evolution of the plethodontid genus *Aneides*: a cytological perspective, (with J. Kezer).
- Joint annual meeting of the Society for the Study of Amphibians and Reptiles, and the Herpetologist's League, North Carolina State University, 1982: Chromosome evolution in salamanders of the genus *Necturus*, (with J. Wiley).

- 61st annual meeting of the American Society of Ichthyologists and Herpetologists, Oregon State University, 1981: Cytogenetics of diploid and triploid salamanders of the *Ambystoma jeffersonianum* complex.
- Society for Neurosciences, 1978: The Mauthner system mediates directional responses to local vibrational stimuli, (with R.C. Eaton and C.B. Kimmel).

REFERENCES:

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