

CURRICULUM VITAE OF H. CARL GERHARDT

BORN: May 23, 1945, Newport News, Virginia, U.S.A.

EDUCATION

Undergraduate: University of Georgia, Athens, B.S. in Zoology, 1966

Graduate: University of Texas, Austin, M.A. in Zoology, minor in Psychology, 1968; Ph.D. in Zoology, 1970 (Supervisor: W. Frank Blair)

Postdoctoral: Cornell University, Ithaca, N.Y., Research Associate of R.R. Capranica, 1970-1971

ACADEMIC APPOINTMENTS:

Research Associate (R.R. Capranica), Section of Neurobiology and Behavior, Cornell University, Ithaca, N.Y., 1970-1971

Division of Biological Sciences, University of Missouri, Columbia

Assistant Professor, 1971

Associate Professor, 1977

Professor, 1981

Curators' Professor, 1994

COURTESY APPOINTMENTS:

Australia: Department of Zoology, University of Melbourne, 1981, 1984, 1990
Department of Zoology (Distinguished Visiting Scholar), University of Western Australia, 1996-7

Austria: Zoological Institute, University of Vienna, Austria, 1984

Germany: Zoological Institute, University of Bonn, 1978; Department of Neuroethology & Biocybernetics, University of Kassel, 1979; Department of Zoology, Ruhr University, 1980

AWARDS AND HONORS:

Career Development and Research Scientist Awards - three 5-yr awards

Elected Fellow, Animal Behavior Society, 1991

Presidential Award for Research and Creativity, University of Missouri (Four-campus system), 1992

Senior Humboldt Fellow, 1995

Elected Fellow, American Association for the Advancement of Science, 1998

Frank Beach Award (with Mark Bee) for best paper in *Journal of Comparative Psychology*, 2001

Quest Award, 2005: Animal Behavior Society "for seminal research on the neurobiological control and evolution of acoustic communication and sexual selection in frogs."

Distinguished Herpetologist Award, 2006: American Society of Ichthyologists and Herpetologists 2006.

C.V.- H. Carl Gerhardt

TEACHING:

Cornell University: Animal Communication laboratory

University of Vienna: Bioacoustics

University of Missouri: Introductory Biology, Introductory Biology for majors, Behavioral Biology; Animal Communication; Sociobiology; Herpetology; Speciation (Co-developed Behavioral Biology, Animal Communication & Sociobiology)

PROFESSIONAL SERVICE:

Secretary, International Society for Neuroethology, 1984-1987

Editorial Board, *Animal Behaviour*, 1982-1991

Associate Editor, *Herpetologica*, 1990-1993

Editorial Board, *Bioacoustics*, 1987-present

National Science Foundation Panel: Animal Behavior & Learning 1989-1991

Research Board, University of Missouri, 1994-1996

Treasurer, International Society for Behavioral Ecology, 1994-2000

Editor, *Animal Behaviour*, 2002 - 2005

RESEARCH SUPPORT:

Previous Extramural Funding:

National Science Foundation: Continuous funding since 1973

National Institutes of Health Research Career Development Award 1977-1982

National Institutes of Mental Health Research Scientist Development Award 1989-1994.

National Institutes of Mental Health Research Scientist Award 1995-1999

National Geographic Society

Australian Research Council (Co-PI: G.F. Watson, University of Melbourne)

National Science Foundation - Dissertation Improvement Grants - former current graduate students (Bee, Marshall, Humfeld)

Current Extramural Funding:

National Science Foundation, "Basic Mechanisms and Evolution of Acoustic Communication". 2001-2007 (\$325,000). Expiring 2008

National Science Foundation, "Good genes mechanisms in gray treefrogs" (Co-PI: Allison Welch). 2004-2008, including no-cost extension.

National Institutes of Health, "Mechanisms and Evolution of Signal Pattern Recognition." 2002-2008 (\$1,150,000), including no-cost extension.

Proposals:

National Science Foundation, "Evolution of complex signals". Submitted Jan 07, declined. Resubmitted July 2007, declined. Resubmitted Jan 08, pending.

C.V.- H. Carl Gerhardt

MAJOR INVITED TALKS:

Plenary Sessions: International Ethological Conferences, 1983, 1987, 1993;
World Congress of Herpetology, 1997; **Australian Society Evolution 2005**;
Distinguished Herpetologist Lecture, 2006; **Fellows Lecture, Animal Behavior
Society, 2006**

Other Talks (Last 10 years):

Symposium: Behavioral and Neural Mechanisms of Communication:
Honoring Peter R. Marler, Davis, California, 1997
Keynote Speaker, Nebraska Behavioral Biology Group, Lincoln, 1997
Symposium: Acoustic Communication in Frogs: Honoring A. S. Rand,
Guelph, Ontario 1998
Symposium: Evolutionary Diversification: Insights from Studies of
Geographical Variation and Hybridization. Columbia, MO 1999
Symposium: Female Preference Functions. Animal Behavior Society.
Corvallis, Oregon, 2001
Symposium: Robert Jaeger symposium. American Society Ichthyology &
Herpetology, Kansas City, Missouri 2002
Symposium: Animal Communication. Animal Behavior Society, Bloomington,
Indiana, 2002
Main Speaker: Chilean Ethological Society, Santiago, Chile, 2002
Symposium honoring Robert Capranica, Pan-American Acoustical Society of
America, Cancun, Mexico, 2002
Symposium honoring Hugh Dingle, Animal Behavior Society, Boise, Idaho, 2003.
Lecture: Chicago Herpetological Society, 2007

INVITED SEMINARS: UNIVERSITIES AND INSTITUTES

Africa: University of Stellenbosch, Stellenbosch, South Africa, 1997
Australia: Australian National, 1981; Macquarie 1997; Melbourne, 1981,
1984, 1990; **Monash**, 1981, 1984, 1990, **2005**; Western Australia, 1990, 1996;
Queensland, 1990
Austria: Karl-Franzens, Graz, 1995; Vienna, 1995
Denmark: Odense, 1984
England: Cambridge, 1984; Open, 1984; Oxford 1979, 1984; Sussex, 1984
Germany: Bonn, 1978; Erlangen, 1984, 1995; Freiburg, 1979; JW Goethe
(Frankfurt), 1984, 1995; Cologne, 1995; Humboldt (Berlin), 1995; Kassel,
1978, 1979; Konstanz, 1979; Leipzig, 1995; Munich, 1984; Max-Planck-Inst.
Verhaltensphysiologie (Seewiesen), 1979, 1983, 1995; Ruhr, 1978; Technical
University (Munich), 1995; Ulm, 1995; Würzburg, 1995
Italy: Turin, 1984, 1996
Netherlands: Catholic (Nijmegen), 1984
New Zealand: Auckland, 1984; Victoria (Wellington), 1984
Spain: National Museum of Science, Madrid, 1993

Sweden: Stockholm, 1992

United States & Canada: Brock, Ontario, 1992; Calif., Davis, 1990; Calif., Los Angeles, 1990; Calif., Santa Barbara, 1994; Calif., San Diego, 1994; Calif. Inst. Tech., 1983, 1990; Chicago, 1977, 1988; Colorado, 1980; Creighton, 1997; Columbia, 2004; Cornell, 1977, 2004; Florida International, 2007; Guelph, 1977; **Haskins Indian University, 2006**; Illinois, 1981; Indiana, 1992; Kansas, 1983, 1991; McGill, 1995; Missouri, St. Louis, 1979, 1987, 1999; **North Carolina, 1980. 2006**; North Carolina State, 1999; Miami, 2000; Ohio State 1993; Oklahoma, 1980; Oklahoma State, 1987; Oregon, 1983; Oregon State, 2001; Pittsburgh, 1990; Princeton, 1976, 1983, 1994; Purdue, 1991, 2003; Rockefeller, 1976; St. Louis, 1977; San Diego State, 1983; Savannah River Ecology Lab, 1979; Simon Fraser, 1997; Toronto (Erindale), 1998; Stanford, 1983; Tennessee, 1989; Texas, 1978, 2000; Tulsa, 2001; Vanderbilt 2004; Vancouver, 1993; Washington (St. Louis), 1975, 1986; 1991; Woods Hole, 1981.

CV- H. Carl Gerhardt

PUBLICATIONS

- Martof, B.S., and H.C. Gerhardt. 1965. Observations on geographical variation in *Ambystoma cingulatum*. *Copeia* 1965: 342-346.
- Gerhardt, H.C. 1973. Reproductive interactions between *Hyla crucifer* and *Pseudacris ornata* (Anura: Hylidae). *American Midland Naturalist* 89: 81-88.
- Gerhardt, H.C. 1974. Mating call differences between eastern and western populations of the treefrog *Hyla chrysoscelis*. *Copeia* 1974: 534-536.
- Gerhardt, H.C. 1974. Behavioral isolation of the treefrog *Hyla cinerea* and *Hyla andersonii*. *American Midland Naturalist* 91: 424-433.
- Gerhardt, H.C. 1974. Vocalizations of some hybrid treefrogs: acoustic and behavioral analyses. *Behaviour* 49: 130-151.
- Gerhardt, H.C. 1974. The significance of some spectral features in mating call recognition in the green treefrog (*Hyla cinerea*). *Journal of Experimental Biology* 61: 229- 241.
- Oldham, R.S. and H.C. Gerhardt. 1975. Behavioral isolation of the treefrogs *Hyla cinerea* and *Hyla gratiosa*. *Copeia* 1975: 223-231.
- Gerhardt, H.C. 1975. Sound pressure levels and radiation patterns of the vocalizations of some North American frogs and toads. *Journal of Comparative Physiology* 102:1-12.
- Feng, A.S., H.C. Gerhardt, and R.R. Capranica. 1976. Sound localization behavior in the green and barking treefrogs. *Journal of Comparative Physiology* 107:241-252.
- Gerhardt, H.C. 1976. Significance of two frequency bands in long distance vocal communication in the green treefrog. *Nature (London)* 261:692-694.
- Gerhardt, H.C. 1978. Temperature coupling in the vocal communication system of the gray treefrog *Hyla versicolor*. *Science* 199:992-994.
- Gerhardt, H.C. 1978. Discrimination of intermediate sounds in a synthetic call continuum by female green treefrogs. *Science* 199: 1089-1091.
- Gerhardt, H.C. 1978. Mating call recognition in the green treefrog (*Hyla cinerea*): significance of some fine-temporal properties. *Journal of Experimental Biology* 74:59-73.

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- Perrill, S.A., H.C. Gerhardt, and R. Daniel. 1978. Sexual parasitism in the green treefrog (*Hyla cinerea*). *Science* 200:1179-1180.
- Rheinlaender, J., H.C. Gerhardt, D. Yager, and R.R. Capranica. 1979. Accuracy of phonotaxis in the green treefrog (*Hyla cinerea*). *Journal of Comparative Physiology* 133:247-255
- Gerhardt, H.C. and Mudry, K.M. 1980. Temperature effects on frequency preferences and mating call frequencies in the green treefrog, *Hyla cinerea* (Anura: Hylidae). *Journal of Comparative Physiology* 137:1-6.
- Gerhardt, H.C. and Hans Schneider. 1980. Mating call discrimination by females of the treefrog *Hyla meridionalis*. *Behavioural Processes* 5: 143-149.
- Gerhardt, H.C. and J. Rheinlaender. 1980. Accuracy of sound localization in a miniature dendrobatid frog. *Die Naturwissenschaften* 67:362-363.
- Gerhardt, H.C., S.I. Guttman, and A. Karlin. 1980. Natural hybrids between *Hyla cinerea* and *Hyla gratiosa*: morphology, vocalization and electrophoretic analysis. *Copeia* 1980: 577-584.
- Ehret, G. and H.C. Gerhardt. 1980. Auditory masking and effects of noise on responses of the green treefrog (*Hyla cinerea*) to synthetic mating calls. *Journal of Comparative Physiology* 141: 13-18.
- Gerhardt, H. C. 1981. Mating call recognition in the green treefrog (*Hyla cinerea*): importance of two frequency bands as a function of sound pressure level. *Journal of Comparative Physiology* 144: 9-16.
- Gerhardt, H.C. 1981. Mating call recognition in the barking treefrog (*Hyla gratiosa*): responses to synthetic calls and comparisons with *Hyla cinerea*. *Journal of Comparative Physiology* 144:17-25.
- Rheinlaender, J., Walkowiak, W. and H.C. Gerhardt. 1981. Directional hearing in the green treefrog: a variable mechanism? *Die Naturwissenschaften* 67:430-431.
- Perrill, S.A., Gerhardt, H.C. and R.E. Daniel. 1982. Mating strategy in male green treefrogs (*Hyla cinerea*): an experimental study. *Animal Behaviour* 30: 43-48.
- Gerhardt, H.C. 1982. Sound pattern recognition in some North American treefrogs (Anura: Hylidae): implications for mate choice. *American Zoologist* 22: 581-595.

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- Gerhardt, H.C. and J. Rheinlaender. 1982. Localization of an elevated sound source by the green treefrog. *Science* 217: 663-664.
- Gerhardt, H.C. 1983. Communication and the environment. In: *Communication and Social Interactions* (Halliday, T. and P. Slater, eds), pp. 82-113. Oxford: Blackwell Scientific Publications, pp. 82-113.
- Doherty, J.A. and H.C. Gerhardt. 1983. Hybrid treefrogs: vocalizations of males and selective phonotaxis of females. *Science* 220: 82-113.
- Gerhardt, H.C. 1983. Acoustic communication in treefrogs. *Proceedings of the German Zoological Society* 1983: 25-35.
- Doherty, J.A. and H.C. Gerhardt. 1984. Evolutionary and neurobiological implications of selective phonotaxis in the spring peeper (*Hyla crucifer*). *Animal Behaviour* 32: 875-881.
- Doherty, J.A. and H.C. Gerhardt. 1984. Acoustic communication in hybrid treefrogs: sound production by males and selective phonotaxis of females. *Journal of Comparative Physiology* 154: 319-330.
- Gerhardt, H.C. 1986. Recognition of spectral patterns in the green treefrog: neurobiology and evolution. *Experimental Biology* 45: 167-178.
- Gerhardt, H.C. 1986. Frog chorus: vocal communication in frogs and toads. In *The Encyclopedia of Reptiles and Amphibians* (Halliday, T.R. and Adler, K., eds), pp. 58-59. NY: Facts on File Inc.
- Klump, G.M. and Gerhardt, H.C. 1987. Use of non-arbitrary acoustic criteria in mate choice by female gray tree frogs. *Nature (London)* 326:286-288.
- Gerhardt, H.C. 1987. Evolutionary and neurobiological implications of selective phonotaxis in the green treefrog, *Hyla cinerea*. *Animal Behaviour* 35: 1479-1489.
- Gerhardt, H.C., Daniel, R.E., Perrill, S.A. and S. Schramm. 1987. Mating behaviour and male mating success in the green treefrog. *Animal Behaviour* 35: 1490-1503.
- Gerhardt, H.C. 1988. Acoustic properties used in call recognition by frogs and toads. In: *The Evolution of the Amphibian Auditory System*. (Fritzsche, B., Hethington, T., Ryan, M., Wilczynski, W. and Walkowiak, W., eds), pp. 455-483. N.Y.: John Wiley & Sons.
- Gerhardt, H.C. and J.A. Doherty 1988. Acoustic communication in the gray treefrog, *Hyla versicolor*: evolutionary and neurobiological implications. *Journal of Comparative Physiology A* 162: 261-278.

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- Gerhardt, H.C. and M.S. Davis 1988. Variation in the coding of species identity in the advertisement calls of *Litoria verreauxi* (Anura: Hylidae). *Evolution* 42: 556-565.
- Gerhardt, H.C. and G.M. Klump 1988. Masking of acoustic signals by the chorus background noise in the green tree frog: a limitation on mate choice. *Animal Behaviour* 36: 1247-1249.
- Gerhardt, H.C. and G.M. Klump 1988. Phonotactic responses and selectivity of barking treefrogs (*Hyla gratiosa*) to chorus sounds. *Journal of Comparative Physiology* 163: 795-802.
- Klump, G.M. and H.C. Gerhardt 1989. Sound localization in the barking treefrog (*Hyla gratiosa*). *Die Naturwissenschaften* 76: 35-37.
- Gerhardt, H.C. 1989. Acoustic pattern recognition in anuran amphibians. In: *The Comparative Psychology of Complex Acoustic Perception*. (S. Hulse & R. Dooling (eds), pp. 175-197. Baltimore: Erlbaum Publ. Co.
- Gerhardt, H.C., Diekamp, B.M. and M. Ptacek. 1989. Inter-male spacing in choruses of the spring peeper, *Pseudacris crucifer*. *Animal Behaviour* 38: 1012-1024.
- Schwartz, J.J. and H.C. Gerhardt 1989. Spatially-mediated release from masking in an anuran amphibian. *Journal of Comparative Physiology A* 166: 37-41.
- Gerhardt, H.C., **Allan, S.** and J.J. Schwartz .1990. Female green treefrogs (*Hyla cinerea*) do not selectively respond to signals with a harmonic structure in noise. *Journal of Comparative Physiology A* 166: 791-794.
- Hausfater, G., Gerhardt, H.C. and G. M. Klump. 1990. Parasites and mate choice in gray treefrogs, *Hyla versicolor*. *American Zoologist* 30: 299-311.
- Jørgensen, M. B. and H.C. Gerhardt. 1991. Directional hearing in the gray treefrog *Hyla versicolor*: eardrum vibrations and phonotaxis. *Journal of Comparative Physiology A* 169: 177-183.
- Gerhardt, H.C. 1991. Female mate choice in treefrogs: static and dynamic acoustic criteria. *Animal Behaviour* 42: 615-635.
- McGregor, P.K., Catchpole, C.K., Dabelsteen, T., Falls, J.B., Fusani, L., Gerhardt, H.C., Gilbert, F., Horn, A.G., Klump, G.M., Kroodsma, D.E., Lambrechts, M.M., McComb, K.E., Nelson, D.A., Pepperberg, I.M., Ratcliffe, L., Searcy, W.A. and Weary, D.M. 1992. Design of playback experiments: the Thornbridge Hall consensus. In: *Playback and Studies of Animal Communication: Problems and Prospects*. NATO Advanced Research Workshop (P. MacGregor ed.), pp. 1-9, N.Y.: Plenum Press.

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- Gerhardt, H.C. 1992. Conducting playback experiments and interpreting their results. In: *Playback and Studies of Animal Communication: Problems and Prospects*. NATO Advanced Research Workshop (P. MacGregor ed.), pp. 59-77, N.Y.: Plenum Press.
- Klump, G.M. and H.C. Gerhardt. 1992. Mechanisms and function of call-timing in male-male interactions in frogs. In: *Playback and Studies of Animal Communication: Problems and Prospects*. NATO Advanced Research Workshop (P. MacGregor, ed.), pp 153-174. N.Y.: Plenum Press
- Diekamp, B.M. and H.C. Gerhardt. 1992. Midbrain auditory sensitivity in the spring peeper (*Pseudacris crucifer*): correlations with behavioral studies. *Journal of Comparative Physiology A* 171: 245-250.
- Gerhardt, H.C. 1992. Multiple messages in acoustic signals. *Seminars in the Neurosciences* 4: 391-400.
- Gerhardt, H.C. 1993. Multiple causation of the evolution of acoustic signals used in courtship. *Etologia* 1993 (3): 175-193. Appeared in 1994.
- Gerhardt, H.C., Ptacek, M. B., Barnett, L., and K.G. Torke. 1994. Hybridization between the diploid-tetraploid treefrogs *Hyla chrysoscelis* and *Hyla versicolor*. *Copeia* 1994: 51-59.
- Gerhardt, H.C. 1994. Reproductive character displacement of female mate choice in the grey treefrog *Hyla chrysoscelis*. *Animal Behaviour* 47: 959-969.
- Gerhardt, H.C., Dyson, M. L., Tanner, S. D. and C. G. Murphy. 1994. Female treefrogs do not avoid heterospecific calls during phonotactic approaches to conspecific calls: implications for mechanisms of mate choice. *Animal Behaviour* 47: 1323-1332.
- Breden, F., Gerhardt, H. C., and R. K. Butlin. 1994. Female choice and genetic correlations. *Trends in Ecology and Evolution* 9: 343.
- Gerhardt, H.C. 1994. Evolution of vocalization in frogs and toads. *Annual Reviews of Ecology and Systematics* 25: 293-324.
- Ptacek, M.B., Gerhardt, H.C. and R.D. Sage. 1994. Speciation by polyploidy and multiple origins of the tetraploid gray treefrog *Hyla versicolor*. *Evolution* 48: 898-908.
- Gerhardt, H.C. 1994. Selective responsiveness to long-range acoustic signals in insects and anurans. *American Zoologist* 34: 706-714.

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- Gerhardt, H.C. 1995. Phonotaxis in female frogs and toads: execution and design of experiments. In: *Animal Psychophysics: Design and Conduct of Sensory Experiments* (G. M. Klump, R.R. Dooling, R.R. Fay & W.C. Stebbins, eds.), pp. 209-220. Basel: Birkhäuser Verlag.
- Gerhardt, H.C. and J.J. Schwartz. 1995. Interspecific interactions in anuran courtship. In: *Amphibian Biology: Social Behaviour* (H. Heatwole & B.K. Sullivan, Eds.), pp. 603-632. Chipping-Norton (Sydney): Surrey Beatty & Sons.
- Diekamp, B.M. and Gerhardt, H.C. 1995. Behavioral and neurophysiological studies of acoustic communication in the gray treefrog *Hyla versicolor*. *Journal of Comparative Physiology A* 177: 173-190.
- Gerhardt, H.C. and G.F. Watson. 1995. Within-male variability in call properties and female choice in the grey treefrog. *Animal Behaviour* 50: 1187-1191.
- Schwartz, J.J. and H.C. Gerhardt. 1995. Directionality of the auditory system and call pattern discrimination during acoustic interference in the gray treefrog *Hyla versicolor*. *Auditory Neuroscience* 1: 195-206.
- Gerhardt, H.C., Dyson, M.L., and **S.D. Tanner**. 1996. Dynamic properties of the advertisement calls of gray treefrogs: patterns of variability and female choice. *Behavioral Ecology* 7: 7-18.
- Murphy, C.G. and H.C. Gerhardt. 1996. Evaluating experimental designs for determining mate choice: the effect of amplexus on mate choice by barking treefrogs. *Animal Behaviour* 51: 881-890.
- Watson, G.F. and H. C. Gerhardt. 1997. The breeding biology and advertisement call of *Litoria splendida* Tyler, Davies and Martin. *Transactions of the Royal Society of South Australia*. 121: 119-124.
- Gerhardt, H.C. 1998. Acoustic signals of animals: field measurements, recording, analysis and description. In: *Techniques in the Study of Animal Communication by Sound* (Hopp, S. & M. Owren, eds.), pp. 1-25. Berlin, Heideberg: Springer Verlag.
- Schwartz, J.J. and H.C. Gerhardt. 1998. The neuroethology of call preferences in the spring peeper. *Animal Behaviour* 56: 55-69.
- Welch, A. M., Semlitsch, R.L., and H. C. Gerhardt. 1998. Call duration as an indicator of genetic quality in male gray treefrogs. *Science* 280: 1928-1930.
- Welch, A. M., R. D. Semlitsch and H. C. Gerhardt. 1998. The handy-dandy kitchen device—Response. *Science* 282: 1994.

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- Walkowiak, W., Berlinger, M., Schul, J. and H. C. Gerhardt. 1999. Significance of forebrain structures in acoustically guided behavior in anurans. *European Journal of Morphology* 37: 116-120.
- Krenz, J., Semlitsch, R.D., Gerhardt, H.C. and P.A. Mahoney. 1999. Isolation and characterization of simple sequence repeat loci in the gray treefrog, *Hyla chrysoscelis*. *Genome* 42: 1-6.
- Gerhardt, H.C. and J. Schul. 1999. A quantitative analysis of behavioral selectivity for pulse-rise time in the gray treefrog, *Hyla versicolor*. *Journal of Comparative Physiology A* 185: 33-40.
- Gerhardt, H.C. 1999. Reproductive character displacement and other sources of environmental selection on acoustic communication systems. In: *The Design of Animal Communication* (Hauser, M. and M. Konishi, eds.), pp. 515-534. Cambridge: MIT Press.
- Murphy, C.G. and H.C. Gerhardt. 2000. Preference functions of individual female barking treefrogs, *Hyla gratiosa*. *Evolution* 54: 660-669.
- Gerhardt, H.C., Roberts, J.D., Bee, M.A. and J.J. Schwartz. 2000. Call matching in the quacking frog (*Crinia georgiana*). *Behavioral Ecology and Sociobiology* 48: 243-251.
- Gerhardt, H.C., Tanner, S.D., Corrigan, C.M. and H.C. Walton. 2000. Female preference functions based on call duration in the gray treefrog (*Hyla versicolor*). *Behavioral Ecology* 11: 663-669.
- Bee, M. A., Kozich, C.E., Blackwell, K.J. and H. C. Gerhardt. 2001. Individual variation in advertisement calls of territorial male green frogs, *Rana clamitans*: implications for individual discrimination. *Ethology* 107: 1-21.
- Keller, M. D. and H. C. Gerhardt. 2001. Polyploidy affects call structure in gray treefrogs. *Proceedings of the Royal Society (London), Series B* 268: 341-345.
- Gerhardt, H.C. 2001. Acoustic communication in two groups of closely related treefrogs. *Advances in Behavioral Biology* (Slater, P.J.B., Rosenblatt, J.S., Snowdon, C.T. and T. J. Roper, eds.), pp. 99-167. New York: Academic Press.
- Bee, M. A. and H.C. Gerhardt. 2001. Habituation as a mechanism of reduced aggression between neighboring territorial male bullfrogs, *Rana catesbeiana*. *Journal of Comparative Psychology*, 115: 68-82.
- Gerhardt, H.C. and J.J. Schwartz. 2001. Auditory tuning and frequency preferences in anurans. In: *Anuran Communication* (Ryan, M.J., ed), pp. 73-85. Washington: Smithsonian Institution Press.
- Gerhardt, H.C. 2001. Acoustic communication in frogs and toads. In: *Model Systems in Behavioral Ecology* (Dugatkin, L., ed.), pp. 169-190. Princeton: Princeton University Press.

CV- H. Carl Gerhardt

- Schwartz, J.J., Buchanan, B. and H.C. Gerhardt. 2001. Female mate choice in the gray treefrog (*Hyla versicolor*) in three experimental environments. *Behavioral Ecology and Sociobiology* 49: 443-455.
- Bee, M.A. and H. C. Gerhardt. 2001. Individual discrimination by territorial male bullfrogs (*Rana catesbeiana*): I. Individual variation in advertisement calls. *Animal Behaviour* 62: 1129-1140.
- Bee, M.A. and H. C. Gerhardt. 2001. Individual discrimination by territorial male bullfrogs (*Rana catesbeiana*): II. Perceptual mechanisms. *Animal Behaviour* 62: 1141-1150.
- Bush, S.L., Gerhardt, H.C. and J. Schul. 2002. Pattern recognition and call preferences in treefrogs (Anura: Hylidae): a quantitative analysis using a no-choice paradigm. *Animal Behaviour* 63: 7-14.
- Bee, M.A. and H.C. Gerhardt. 2002. Individual voice recognition in a territorial frog (*Rana catesbeiana*). *Proceedings of the Royal Society of London Series B* 269: 1443-1448.
- Murphy, C.G. and H.C. Gerhardt. 2002. Mate-sampling by female barking treefrogs (*Hyla gratiosa*). *Behavioral Ecology* 13: 472-480.
- Gerhardt, H.C. and Franz Huber. 2002. *Acoustic Communication in Insects and Frogs: Common Problems and Diverse Solutions*. Chicago: University of Chicago Press.
- Gerhardt, H.C. 2002. Sexual dimorphism. In: *Encyclopedia of Evolution* (Pagel, Mark, ed.). Oxford: Oxford University Press
- Gerhardt, H.C. 2002. Neuroethology of sound communication in anurans (frogs and toads). In: *Encyclopedia of Neuroscience* (G. Adelman and B. H. Smith, eds.). Oxford: Oxford University Press, published on-line
- Schwartz, J.J., Buchanan, B.W. and H.C. Gerhardt. 2002. Acoustic interactions among male gray treefrogs, *Hyla versicolor*, in a chorus setting. *Behavioral Ecology & Sociobiology* 53: 9-19
- Höbel, G.** and H.C. Gerhardt. 2003. Reproductive character displacement in the acoustic communication system of green treefrogs (*Hyla cinerea*). *Evolution* 57: 894-904.
- Endepols, H., Feng, A.S., Gerhardt, H.C., Schul, J. and W. Walkowiak. 2003. Roles of the auditory midbrain and thalamus in selective phonotaxis in female gray treefrogs (*Hyla versicolor*). *Behavioral Brain Research* 145: 53-77.
- Gerhardt, H. C. 2003. Animal communication. *Journal of the Acoustical Society of America* 114: 578. Book Review.

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- Endepols, H., Schul, J., Gerhardt, H.C. and W. Walkowiak. 2004. 6-Hydroxydopamine lesions in anuran amphibians: A new model system for Parkinson's disease? *Behavioral Neurobiology* 60: 395-410.
- Gerhardt, H.C. 2004. Chorusing in frogs. In: Encyclopedia of Animal Behavior (Marc Bekoff, ed), pp. 383-385. Greenwood Press, Westport CT
- Klump, G.M., Benedix, Jr. J.H., Gerhardt, H.C. and P. M. Narins. 2004. AM-representation in green treefrog auditory-nerve fibers: neuroethological implications for pattern recognition and sound localization. *Journal of Comparative Physiology A* 190:1011–1021.
- Gerhardt H. C. 2005. Acoustic spectral preferences in two cryptic species of grey treefrogs: implications for mate choice and sensory mechanisms. *Animal Behaviour* 70: 39-49.
- Gerhardt H. C. 2005. Advertisement-call preferences in diploid-tetraploid treefrogs (*Hyla chrysoscelis* and *Hyla versicolor*): implications for mate choice and the evolution of communication systems. *Evolution* 59: 395-408.
- Gerhardt, H. C. and G. Höbel. 2005. Mid-frequency suppression in the green treefrog (*Hyla cinerea*): implications for mechanisms and the evolution of acoustic communication. *Journal of Comparative Physiology A* 191: 707-714.
- Jang, Y. and H. C. Gerhardt. 2006. Divergence in the calling songs between sympatric and allopatric populations of the southern wood cricket *Gryllus fultoni* (Orthoptera: Gryllidae). *Journal of Evolutionary Biology* 19: 459-472.
- Jang, Y. and H. C. Gerhardt. 2006. Divergence in the calling songs between sympatric and Allopatric populations of the southern wood cricket *Gryllus fultoni* (Orthoptera: Gryllidae). *Journal of Evolutionary Biology* 19: 459-472.
- Holloway, A. K., Cannatella, D.C., Gerhardt, H.C. and D.M. Hillis. 2006. Polyploids with different origins and ancestors form a single sexual polyploidy species. *American Naturalist* 167: E88-E101.
- Marshall, V.T., Schwartz, J.J. and H. C. Gerhardt. 2006. The effects of cross-species advertisement call overlap on signal discrimination and phonotactic behaviour of grey treefrogs *Animal Behaviour* 72: 449-459.
- Robillard, T., Höbel, G. and H. C. Gerhardt. 2006. Evolution of advertisement signals in North American hylid frogs: vocalizations as end-products of calling behavior. *Cladistics* 22: 1-13.
- Gerhardt, H.C. and Mark A. Bee. 2006. Recognition and localization of acoustic signals. In: *Hearing and Sound Communication in Amphibians* (Ed: Feng, Narins, Popper & Fay, pp. 113-146. New York: Springer Verlag.

CV- H. Carl Gerhardt

- Jang, Y. and H. C. Gerhardt. 2007a. Divergence in female calling song discrimination between sympatric and allopatric populations of the southern wood cricket *Gryllus fultoni* (Orthoptera: Gryllidae). *Behavioral Ecology and Sociobiology* 60:150-158.
- Jang, Y. and H. C. Gerhardt. 2007b. Differential temperature effects on calling songs between allopatric and sympatric populations of *Gryllus fultoni* (Orthoptera: Gryllidae). *Journal of Insect Behavior* 20: 33-52.
- Jang, Y., Bockhorst, A. and H. C. Gerhardt. 2007. Reproductive isolation in the wood cricket *Gryllus vernalis* (Orthoptera: Gryllidae). *Ethology* 113: 87-96.
- Gerhardt, H. C., Humfeld, S. C, and V. T. Marshall. 2007. Temporal order and the evolution of complex acoustic signals. *Proceedings of the Royal Society of London, Part B* 274: 1789-1794.
- Gerhardt, H. C., Martinez-Rivera, C.C., Schwartz, J.J., Marshall, V.T. and C.G. Murphy. 2007. Preferences based on spectral differences in acoustic signals in four species of treefrogs. *Journal of Experimental Biology* 210: 2990-2998.
- Höbel, G. and H. C. Gerhardt. 2007. Sources of selection on signal timing in a tree frog. *Ethology* 113: 773-782.
- Jang, Y., Gerhardt, H.C. and J. Choe. 2008. A comparative study of aggressiveness in eastern North American field cricket species (Genus *Gryllus*). *Behavioral Ecology and Sociobiology*, 62: 1397-1407.
- Gerhardt, H. C. 2008. Phonotactic selectivity in two cryptic species of gray treefrogs: effects of differences in pulse-rate, carrier frequency, and playback level. *Journal of Experimental Biology*, in press.
- Martínez-Rivera, C.C. & H. C. Gerhardt. 2008. Advertisement-call modification and female preference in the bird-voiced treefrog, *Hyla avivoca*. *Behavioral Ecology and Sociobiology* 63: 195-208.
- Gordon, N.M. & H.C. Gerhardt. 2009. Hormonal modulation of phonotaxis and advertisement-call preferences in the gray treefrog (*Hyla versicolor*). *Hormones & Behavior*, in press.

Student paper:

- Humfeld, S. C. 2008. Intersexual dynamics mediate the expression of satellite mating tactics: Unattractive males and parallel preferences. *Animal Behavior* 75: 205-215.

Book in Press:

- Elliott, L., Gerhardt, H.C. & Carlos Davidson. 2008. *Frogs and Toads of North America: A Comprehensive Guide to their Identification, Behavior and Calls*. Houghton-Mifflin.