

NEIL GREENBERG
Concise CV for Department of Medicine

Curriculum vitae

January 2007

EDUCATION:

1973: Ph.D., Rutgers University; Department of Zoology/Institute of Animal Behavior // **1967:** M.S., Rutgers University; Department of Zoology // **1963:** B.A., Drew University; Major in Zoology

BRIEF CHRONOLOGY OF EMPLOYMENT:

Current: Professor (since **1995**), Department of Ecology and Evolutionary Biology and Graduate Programs in Ethology and Ecology, The University of Tennessee, Knoxville, TN 37996-1610

Research in physiological ecology and ethology; conducting ethological and neuroendocrine research; theoretical physiological ethology: developing integrative models of the coevolution of brain and behavior. Developing curriculum in collaborative student-faculty biological research;

1999- Chair, University Studies Program.

Engendering and nurturing collaborative and interdisciplinary research, teaching, and creative achievement for University faculty across all campuses. Reports to the Office of the Provost.

1995-2001 Director, P.I., Threshold Honors Program in Biology: Howard Hughes Medical Institute and UTK Division of Biology Curriculum Development Project.

Developed and administered collaborative and interdisciplinary curriculum for honors students in the biological sciences.

1973-1978: Research Ethologist, Laboratory of Brain Evolution and Behavior, National Institute of Mental Health, Bethesda, MD:

Developed and implemented neurophysiological and ethological studies of social behavior in reptiles. Conducted neuroethological research.

1977-1982: Research Associate; The Museum of Comparative Zoology, Harvard University.

1973-1975: Research Fellow; National Institute of Mental Health.

HONORS AND OTHER PROFESSIONAL RECOGNITION:

1999: Nominee, University of Tennessee National Alumni Association Outstanding Teacher Award.

1997: Associate Fellow, University of Tennessee Center for Academic Excellence

1996: University of Tennessee Nominee to the TIAA/CREF Theodore M. Hesburgh Award for faculty development to enhance undergraduate teaching and learning.

1994: Elected, Fellow of the American Association for the Advancement of Science. Citation reads, in part, ". . . for exemplary ethological research on the causes and consequences of social behavior and for innovative efforts to illuminate the relations between biology and the humanities."

1992: Elected, University Studies Fellow. Involves "University Studies Annual Award for Excellence in Interdisciplinary Scholarship." \$5,000 award.

1983-1990: Stokely Institute Lecturer, J.R. Stokely Institute for Liberal Arts Education.

1987: Recipient, International Brain Research Organization European Travel Grant.

1982-1983: Recipient, "Creating Connections" Award, Center for Professional Development.

1981: Invited seminarist, NATO--Advanced Study Institute.

1981-1986: Selected, Danforth Associate

1981: First Tennessee Bank Scholar (research fellowship)

1978: Sigma Xi, Harvard/Radcliff Chapter

1976: Schweppe Research and Education Fund Award

1973-1975: Grant Foundation Research Fellow, National Institute of Mental Health

GRANTS, AWARDS, AND RESEARCH SUPPORT:

2001-2002: Co-recipient, Haines-Morris Grant in support of faculty colloquy and visiting lecture series (committee includes Jonathan Kaplan, David Reidy, Massimo Pigliucci, and Gordon Burghardt)

1998: Recipient, Hewlett Innovative Teaching Fellowship for creative curriculum development. "From Cells to Civilizations: The Study of Living Systems," in collaboration with Jo-Lynn Cunningham. (**\$5,000** plus Summer Training Institute)

1995: Principal Investigator, "Changes in learning styles in undergraduates after research experience" University of Tennessee Teaching Council Grant (**\$612.75** awarded) Assessment of effectiveness of experimental curriculum

1994-1999: Project Director, "Threshold Program in Biomedical Science." Hughes Biomedical Research Institute, HHMI# 71195-539601 (**\$1,400,000** awarded). Undergraduate curriculum revision to integrate basic research with teaching and prepare students for creative graduate research.

1992-1993: Principal Investigator, "Neuroendocrinology of Reptilian Social Dominance." University of Tennessee Professional Development Award (**\$5,000** awarded). Basic research.

1992: Principal Investigator, "Neural coordination of arousal and exploratory behavior." University of Tennessee Faculty Research Grant (**\$5,500** awarded) Basic research.

1991: Co-Principal Investigator, "Science Education Partnership in DNA Science and Bioethics." NIH: RFP OD-91-09 (**\$959,916**). Jeff Becker, P.I., Approved but unfunded. Undergraduate curriculum revision and community outreach.

1986-1991: Core Faculty, Life Sciences Graduate Program in Ethology Training Grant, "Communication: Development, Genetics, and Physiology." NICHD-1-T32-HD 07303-01A1; Program Director, G.M. Burghardt) (\$522,456 requested, **\$391,975** awarded).

1985-1986: Principal Investigator, "Higher Neural Control of Stress Sensitive Behavior." University of Tennessee Faculty Research Grant. (\$2,500 awarded) Basic research.

1984-1986: Principal Investigator, "Physiological Ethology of Psychological Stress." NSF, BNS-8406028. (**\$20,000** awarded) Basic research.

1984-1986: Principal Investigator, "Higher Neural Control of Stress Sensitive Behavior." NIMH, Biological and Neurosciences Subcommittee. (\$14514 requested, unanimously approved but unfunded) Basic research.

1981-1982: Principal Investigator, "Stress and Social Behavior." First Tennessee Bank "Tennessee Tomorrow" Faculty Research Award. (\$500 awarded). Basic research.

1980: Co-investigator, "The Physiological Ecology of Small Animals." University of Tennessee Equipment Grant to the Graduate Program in Ecology. (F.McCormick, Ecology Program Director) (\$15750 requested. approx \$10,000 awarded). Basic research.

1978-1980: Principal Investigator, "Neuroendocrinology of Social Behavior." University of Tennessee Biomedical Research Support Grant, HEW # RR-07088. (approx \$10,000 awarded) Basic research.

1978-1981: Co-investigator, "Neuroendocrine Control of Reproductive Behavior." NINCDS, HEW #1R01NS15305-1. (P.I., David Crews) (awarded) Basic research.

1976: Principle Investigator, "Neurobiology of Reptiles. Schwappe Research and Education Fund." (\$500 awarded) Basic research.

PRINCIPAL RESEARCH INTERESTS:

The physiological and evolutionary ethology of aggressive and reproductive behavior and its role in the regulation of social organization. In particular, the manner in which neuroendocrine integration of physiological stress-sensitive autonomic reflexes and fragments of motor patterns become elaborated and progressively brought under the control of external stimuli and higher neural centers. The physiological causes and consequences of social interactions. The role of physiological stress in the evolution and expression of complex behavior.

PROFESSIONAL SOCIETIES:

AAAS - American Association for the Advancement of Science (**Fellow**)

HBES - Human Behavior and Evolution Society

Sigma Xi

SICB - Society for Integrative and Comparative Biology (American Society of Zoologists)

SN - Society for Neuroscience/International Brain Research Organization

PRINCIPAL TEACHING INTERESTS:

Ethology/Animal Behavior; Ecology and Evolution

Physiological Ethology; Neurobiology/Psychobiology

Physiological and Behavioral Ecology

PROFESSIONAL ACTIVITIES:

Manuscript or chapter reviewer (most recent in **boldface**) for: *American Midland Naturalist*, ***Animal Behaviour***, *Animal Learning and Behavior*, *Behavioural Brain Research*, *Brain Research*, *Copeia*, *Comparative Biochemistry and Physiology*, *Criminal Justice and Behavior*, *General and Comparative Endocrinology*, Harvard University Press, *Herpetologica*, ***Hormones and Behavior***, *International Review of Cytology*, *Journal of Comparative Neurology*, *Journal of Comparative Psychology*, *Journal of Experimental Zoology*, *Journal of Herpetology*, *Journal of Morphology*, ***Nature***, *International Review of Cytology*, ***Physiology & Behavior***, *Science*, National Geographic Press, Smithsonian Institution Press, **Proceedings of the Royal Society-Biological Sciences**, Smithsonian Scholarly Studies Program, *SSAR Symposium Series*, University of Minnesota Press, *Zeitschrift fur Tierpsychologie*; Invited Associate, *The Behavioral and Brain Sciences*. **Grant reviewer** for City University of New York Research Program, National Geographic Society Committee for Research and Exploration, **National Institutes of Health** (neurobiology), **National Science Foundation** (Biotic Systems, Neurobiology, Population Biology, Psychobiology, Physiological Ecology).

Multiple professional and public presentations and lecturer. 2005-2007: Presented regular series, "Truth in the Barin" at public forums hosted by the TN Valley Unitarian Universalist Church.

SELECTED SCHOLARLY PUBLICATIONS and PRESENTATIONS

(most recent 5 plus favorite 20)

Greenberg N. 2007. From Unintentional Modeling to Intentional Mediation: An Ethological View of Teaching. Invited Presentation at the XI Biennial International Conference of the International Association for Cognitive Education and Psychology (IACEP). The University of Tennessee, Knoxville. July 3, 2007.

Greenberg, N. 2006. The Natural History of Intuition. plenary lecture in symposium, "Exploring the Science of Intuition and Consciousness" sponsored for continuing professional education by the Institute of Noetic Sciences and Bastyr University. Tuesday March 21, 2006.

Summers, Cliff H. Wayne J. Korzan, Jodi L. Lukkes . . . Neil Greenberg. 2005. Does Serotonin Influence Aggression? Comparing regional activity before and during social interaction *Physiol Biochem Zool* 78:679-694. [According to the University of Chicago Press RSS feeds, [the] article "Does Serotonin Influence Aggression? ..." was one of the Top 10 articles downloaded and viewed for October 2005.]

Summers, Cliff H., Gina L. Forster, Wayne J. Korzan . . . Neil Greenberg. 2004. Dynamics and mechanics of social rank reversal. *J compar physiol A*: 191: 241-252.

Greenberg, N. 2004. Truth in the Brain: The neuroethology of belief. In: *Proc 6th International Research Conference on Consciousness: Qi and Complexity*. Roy Ascott, editor. Beijing. pp. 154-160.

Greenberg, N. 2004. Play and the Brain. in, *The Child's Right to Play: A Global Approach*. Rhonda Clements & Leah Fiorentino, editors. Greenwood Press, Westport CT (pp. 307-327)

Greenberg, N. 2003. Sociality, Stress, and the Corpus Striatum of the Green Anolis Lizard. *Physiology & Behavior*. 79(3):429-440.

Greenberg, N. 2002. Ethological causes and consequences of the stress response in the lizard, *Anolis carolinensis*. *Integrative and Comparative Biology* 42(3):526-540.

Greenberg, N., J.A. Carr, & C.H. Summers. 2002. Causes and consequences of the stress response. *Integrative and Comparative Biology* 42(3):508-516.

Summers, Cliff H., Earl T. Larson, Tangi R. Summers, Kenneth J. Renner, Neil Greenberg. 1998. Regional and temporal separation of serotonergic activity mediating social stress. *Neuroscience* 87(2):489-496.

Jenssen, Thomas A., Neil Greenberg, and K.A. Hovde 1995. Behavioral profile of free-ranging lizards, *Anolis carolinensis*, across breeding and post-breeding seasons. *Herpetol. Monographs*, 9:41-62

Summers, Cliff H. and Neil Greenberg. 1995. Activation of central biogenic amines following aggressive interactions in male lizards, *Anolis carolinensis*. *Brain, Behavior and Evolution* 45:339-349.

Summers, Cliff H. and Neil Greenberg. 1994. Somatic correlates of adrenergic activity during aggression in the lizard, *Anolis carolinensis*. *Hormones and Behavior* 28:29-40.

Greenberg, N. 1993. Endocrine and central aspects of tongue-flicking and exploratory behavior in the lizard, *Anolis carolinensis*. *Brain, Behavior, and Evolution* 41:210-218.

Cooper, W.E. Jr. and N. Greenberg. 1992. Reptilian coloration and behavior. In: *Hormones, Brain, and Behavior*, Vol. 18 of *Biology of the Reptilia*, C Gans and D. Crews, editors. University of Chicago Press, pp 298-422.

Young, Larry J., Neil Greenberg, David Crews. 1991. The effects of progesterone on sexual behavior in male green anole lizards (*Anolis carolinensis*). *Hormones and Behavior*, 25(4):477-488.

Greenberg, N. 1990. The behavioral endocrinology of physiological stress in a lizard. *Journal of Experimental Zoology*, Supplement 4:170-173.

Greenberg, N. and D. Crews. 1990. Endocrine and behavioral responses to aggression and social dominance in the green anole lizard, *Anolis carolinensis*. *General and Comparative Endocrinology*, 77:1-10.

Greenberg, N. 1988. Art, Science, Areté. *Teaching/Learning Issues*, Number 63, Summer. 14 pp.

Greenberg, N., E. Font, and R. Switzer. 1988. The reptilian striatum revisited. In: *The Forebrain in Reptiles: Current Concepts of Structure and Function*, W. K. Schwerdtfeger and W. J. Smeets, editors. Basel, Karger-verlag. pp 162-177.

Greenberg, N. 1985. Exploratory behavior and stress in the lizard, *Anolis carolinensis*. *Zeitschrift fur Tierpsychologie* 70:89-102.

Greenberg, N., T. Chen, and D. Crews. 1984. Social status, gonadal state, and the adrenal stress response in the lizard, *Anolis carolinensis*. *Hormones and Behavior*. 18:1-11.

1983. Greenberg, N. 1983. Central and autonomic aspects of aggression and dominance in reptiles. In: *Advances in Vertebrate Neuroethology*, J.-P. Ewert, et al., editors. NY, Plenum Press. pp. 1135-1144.

1982. Greenberg, N. 1982. A forebrain atlas and stereotaxic technique for the lizard *Anolis carolinensis*. *Journal of Morphology* 174(2):217-236.

Greenberg, N., P.D. MacLean, and L.F. Ferguson. 1979. Role of the Paleostriatum in species-typical display of the lizard, *Anolis carolinensis*. *Brain Research*. 172:229-241.

MANUSCRIPTS in PREPARATION

Greenberg N. In Prep. The Ethology of Teaching. For *Evolution and Human Behavior*.

Font, E., N. Greenberg, RC Switzer III. In Prep. Ascending Projections in the Brain of Lizard *Anolis carolinensis* Visualized by MPTP-Induced Degeneration. For *Neuroscience*.

Greenberg N., CH Summers, IN Acworth. In Prep. Circulating Monoamine Response to Transient Stress in Normal and Centrally Sympathectomized Lizards, *Anolis carolinensis* (Sauria, Iguanidae). For *J. Neurosci*.

Greenberg N., CH Summers, PH DeSan. In Prep. Distribution and Effects of Central Catecholamine Depletion in the Lizard, *Anolis carolinensis* (Sauria, Iguanidae). *Note* For *J. Neurosci*.

BOOKS in PREPARATION

Art and Organism: the Biology of Art and Aesthetic Experience [overview developed in context of University Colloquy and senior seminar web-posted at <https://notes.utk.edu/greenberg> > “What’s New” > “Art & Organism”]

DEEP Ethology: the Integrative Biology of Behavior [overview developed in context of senior seminar web-posted at <https://notes.utk.edu/greenberg> > “What’s New” > “DEEP Ethology”]

INTERNET / WEB PROJECTS

Two major projects (mentioned above) are in the service of preparing manuscripts for publication (*Art and Organism: the Biology of Art and Aesthetic Experience*; and *DEEP Ethology: the Integrative Biology of Behavior*, are also of intrinsic interest and in support of curriculum renewal. In addition there are several scholarly and research-integrative internet projects.

SELECTED SCHOLARLY OUTREACH ACTIVITIES. (most recent 5 plus favorite 20)

Lecture, Forum, and Workshop announcements, presentations, and study materials are maintained at my website <https://notes.utk.edu/greenberg>.

2007. “**The Natural History of Creativity**” Oak Ridge Philosophical Society, March 9, 2007.

2007. “**Biological Determinism and the Human Spirit: "Free Spirit or Spiritual Slave"**” Tennessee Valley Unitarian Universalist Church. Jan 7.

2006. “**Revelation and the Revealed**” Tennessee Valley Unitarian Universalist Church. Sept 24.

2006. “**The Science of Winning.**” *The Infinite Mind*, PBS radio conversation with Howard Bloom. September 13.

2006. “**Mystery Demystified: The Essential Tension between Science and Spirituality**” Tennessee Valley Unitarian Universalist Church. May 7

2006. “**The Natural History of Intuition**”, Plenary Presentation at Institute of Noetic Sciences (IONS) and Bastyr University symposium. Seattle. March 21.

2006. “**The Centaur and the Self**”, College of Architecture and Design, March 13.

2006. “**The Biological Background to Intuition.**” University of Tennessee College of Nursing. Jan 19.

2006. “**The Grand Illusions: Perception, Rationality, and Free Will.**” Tennessee Valley Unitarian Universalist Church. Jan 15

2005. “**The Natural History of Miracles and Myths**” Tennessee Valley Unitarian Universalist Church. Nov 13

2005. “**How the Brain Serves Our ‘Needs to Know.’**” Oak Ridge Philosophical Society. Oct 7.

2005. “**Living in Fragments and the God of the Gaps**” Tennessee Valley Unitarian Universalist Church,. Aug 28

2005. “**Who the Hell Do You Think You Are!?! The Natural History of the Self.**” Optimist Club of West Knoxville. May 26

2005. “**The Intuitive Self**”. Tennessee Valley Unitarian Universalist Church, Knoxville. April 10

2005. “**Who the Hell Do You Think You Are!?! The Natural History of the Self.**” Oak Ridge Forum on Religion and Science. .Mar 24

2005. "PROTEUS: Ernst Haeckel's Holistic Vision: Reconciling Irreconcilables in Science and Art." Documentaries in the UT Library: Lindsay Young Auditorium, University of Tennessee. March 2.

Feb 27, 2005. UU FORUM notes: Qi, Art, Science, and the Brain -- 930 AM, Sunday, February 27, 2005 -- Tennessee Valley Unitarian Universalist Church, Knoxville.

2005. "Who the Hell Do You Think You Are!?: The Biology of the Self." St Andrews Forum. Maryville, TN. February 20.

2005. "The Birth and Troubled First Years of Sociobiology" EO WILSON Study Group: February 2.

2005. "The UT Environmental Semester" University Studies Centripetal, University of Tennessee, Knoxville. Jan 20.

2005. DEEP Ecology: The Real Agenda" College Scholars Seminar. January 19.

2004. "Truth in the Brain: the Neurobiology of Belief" Sixth International Research Conference on Consciousness Reframed. Beijing, November 2004.

2004. "The Biology of Beauty." Gardener's Forum, 2004.

2004. "Science and Religion: Sibling Rivalry and Reconciliation." Knoxville Ministerial Association, September 16.

2003. "Science and Religion: Sibling Rivalry and Reconciliation." Maryville College "Community Conversations" lectureship, Maryville, TN. Sept 16.