

**CURRICULUM VITA  
DAVID L. HILL**

*Born:* May 21, 1953

*Marital Status:* Married, two children

*Telephone:* Office - (434) 982-4728  
Home - (434) 973-2899

*Education:*

- B.S. Psychology and Zoology  
Western Illinois University  
Macomb, Illinois, 1975.
- M.S. Experimental Psychology  
Ohio University  
Athens, Ohio, 1978.
- Ph.D. Experimental Psychology  
Ohio University  
Athens, Ohio, 1979.
- Postdoc. Sensory Physiology  
The University of Michigan  
Ann Arbor, Michigan, 1979-1981

*Positions Held:*

Professor  
Department of Psychology  
University of Virginia  
September, 1995 – present

Chair  
Department of Psychology  
University of Virginia  
August, 2004 – August, 2008

Director: Undergraduate Program in Neurosciences  
University of Virginia  
September, 2002 – January, 2008

Director: Graduate Program in Neurosciences  
University of Virginia  
July, 1998 – July, 2001

Associate Professor  
Department of Psychology  
University of Virginia  
September, 1989 - August, 1995

Assistant Professor  
Department of Psychology  
University of Virginia  
August, 1986 - September, 1989

Assistant Professor  
Department of Psychology  
University of Toledo  
August 1983-August 1986.

Adjunct Assistant Research Scientist  
Center for Human Growth and Development  
The University of Michigan  
August 1983-August 1986.

Assistant Research Scientist  
Center for Human Growth and Development-joint appointment  
The University of Michigan  
August 1981-July 1983.

Assistant Research Scientist  
Dept. of Oral Biology, School of Dentistry-joint appointment  
The University of Michigan  
September 1981-July 1983.

Postdoctoral Fellow  
Department of Oral Biology, School of Dentistry  
The University of Michigan  
August 1979-August 1981.

Graduate Assistant  
Department of Psychology  
Ohio University  
1975-1979.

Current Funding:

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Neural Plasticity in the Adult Gustatory System, # R01 DC006938, Direct Costs -- \$3,100,000/5 yrs., July 2010 – June 2015.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Ontogeny of Central Neural Taste Responses in Rat, #R01 DC00407, Direct Costs -- \$1,772,000/5 yrs., March 2007 – February 2012.

Completed Funding:

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Neural Plasticity in the Adult Gustatory System, # R01 DC006938, Direct Costs -- \$1,200,000/5 yrs., July 2004 – June 2010.

Principal Investigator, National Institute on Child, Health, and Development. Training Grant in Neurobiological and Behavioral Development, #T32 HD07232, March 2001 – 2006.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Ontogeny of Central Neural Taste Responses in Rat, #R01 DC00407, Direct Costs -- \$1,000,000/5 yrs., August 2000-July 2006.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, NRSA Senior Fellowship for Dr. Robert E. Stewart, #F33 DC006541, September 1, 2003- August 31, 2004.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, NRSA Predoctoral Fellowship for Olivia L. May, #F31 DC006332, May 1, 2003 – April 30, 2005.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, NRSA Predoctoral Fellowship for Daniel Binder, #F31 DC005272, May 1, 2003 – April 30, 2005.

Co-Investigator, National Institute on Deafness & Other Communication Disorders. Neuronal Subsets in the Geniculate Ganglion, Direct Costs to U.Va.-- \$77,000/5 yrs., March, 2001 – February, 2006.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Program Project Grant -- Peripheral Sensory System Development and Regeneration, P01DC003576, Direct Costs -- \$2,275,162/5 yrs., April 1999 - March 2004.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Plasticity of the Regenerating Taste System, #R01 DC02406, Direct Costs -- \$671,897/4 yrs., September 1997 - August 2001.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, NRSA Postdoctoral Fellowship for Dr. Suzanne I. Sollars, 1996 – 1999.

Principal Investigator, National Institute on Deafness & Other Communication Disorders, Ontogeny of Central Neural Taste Responses in Rat, #R01 DC00407, Direct Costs -- \$447,867/4 yrs., August 1995-July 1999.

Principal Investigator, National Institute of Deafness & Other Communication Disorders, Plasticity of the Regenerating Taste System, #R01 DC02406, Direct Costs -- \$274,649/3 years, September 1994-September 1997.

Principal Investigator, National Institute of Deafness & Other Communication Disorders, #R01 DC00407, Direct Costs--\$350,000/4 yrs., Ontogeny of Central Neural Taste Responses in Rat, August 1991-July 1995.

NIH Research Career Development Award, National Institute of Neurological Diseases & Stroke, Development of the Gustatory System, August 1987 – July 1991.

Principal Investigator, National Institute of Neurological Diseases & Stroke, #R01 DC00407, Ontogeny of Central Neural Taste Responses in Rat, August 1986-July 1991.

NIH Research Career Development Award, National Institute of Neurological and Communicative Disorders & Stroke, Development of Converging Taste & Visceral Responses, July 1985 – June 1986.

Principal Investigator, National Institute of Neurological and Communicative Disorders & Stroke, #R01 NS20538, Direct Costs -- \$154,696/3 yrs., Ontogeny of Central Neural Taste Responses in Rat, August 1984-July 1986.

Principal Investigator, National Institute of Neurological and Communicative Disorders & Stroke, #R01 NS7404, Direct Costs -- \$130,900/3 yrs., Ontogeny of Central Neural Taste Responses in Rat, August 1981-July 1984.

Postdoctoral Fellow, NRSA, National Institute of Neurological and Communicative Disorders & Stroke, #F32 NS06423, Neural Development of Salt Taste in the Rat, November 1979 – July 1981.

*Honors:*

Bachelor's degree, with honors, 1975.

Recipient of National Research Service Award-Postdoctoral Fellow, NIH, 1979.

European Chemoreception Research Organization Travel Grant, 1984.

NIH Research Career Development Award  
Member, Sensory Disorders and Language Study Section, NIH, 1993 - 1998  
Program Chair, Association for Chemoreception Sciences, 1996  
Recipient of Ajinomoto Award for Taste Research, 1996  
Invited Foreign Speaker -- JASTS, Osaka, Japan, 1996.  
Invited Speaker -- International Symposium on Olfaction & Taste, Brighton, England, 2000  
President-- Association for Chemoreception Sciences, 2000  
Invited Participant—JASTS, Kagoshima, Japan, 2002  
Invited Participant—Marabou Conference on Nutrition, Stockholm, Sweden, 2003  
Invited Participant—International Symposium on Olfaction and Taste, Kyoto, Japan, 2004.  
Member, Somatosensory and Chemosensory Systems Study Section, NIH, 2009 – present.

*Professional Organizations:*

American Association for the Advancement of Science  
Society for Neuroscience  
Association of Chemoreception Sciences

*National Professional Service:*

Member of Organizing Committee for 1983 Meeting of the Association for Chemoreception Sciences.  
N.I.H. Study Section Member--Academic Research Enhancement Award (AREA) Program, 1985.  
N.I.H. Site Visit Member, 1988, 1993.  
Treasurer - Association for Chemoreception Sciences, 1986-1988.  
Vice Chairperson - Gordon Research Conference on Chemosenses: Taste & Smell, summer, 1990.  
Member of Organizing Committee for 1993 and 1994 Meeting of the Association for Chemoreception Sciences.  
Member, Sensory Disorders and Language Study Section, N.I.H., 1993-1998.  
Program Chair, Association for Chemoreception Sciences, 1996.  
President-- Association for Chemoreception Sciences, 2000.

*University Committees:*

Program Committee, Center for Human Growth & Development, Univ. Michigan, 1982-1983.

Arts & Sciences Council Representative, Univ. Toledo, 1984-1986.  
Deans Committee on Program for Academic Excellence, 1984-1986.  
Deans Committee of Undergraduate Education, Univ. Toledo, 1985-1986.  
Undergraduate Committee, University of Virginia, 1986-present.  
Steering Committee, Dept. of Psychology, Univ. of Virginia, 1987-1988.  
Steering Committee, Dept. of Psychology, Univ. of Virginia, 1990-1992.  
Neuroscience Program Seminar Series Co-Coordinator, 1987-1988.  
Neuroscience Program Seminar Series Co-Coordinator, 1992-1993.  
Animal Research Committee, 1993-1997.  
Oversight Committee for Comparative Medicine, 1997-present.

*Research Interests:*

Molecular, neurophysiological, morphological, and behavioral development of taste; environmental and physiological factors affecting the developing and regenerating taste system; salt taste transduction, neural coding of taste information at peripheral and central levels; influences of the taste system on feeding behaviors.

*Publications:*

Almli, C.R., **D.L. Hill**, N.T. McMullen and R.S. Fisher. 1979. Newborn rats: Lateral hypothalamic damage and consummatory-sensorimotor ontogeny. Physiology and Behavior, **22**: 767-773.

Almli, C.R., R.S. Fisher and **D.L. Hill**. 1979. Lateral hypothalamus destruction in infant rats produces consummatory deficits without sensory neglect or attenuated arousal. Experimental Neurology, **66**: 146-157.

**Hill, D.L.** and C.R. Almli. 1980. Ontogeny of chorda tympani nerve responses to gustatory stimuli in the rat. Brain Research, **197**: 27-38.

**Hill, D.L.**, C.R. Almli, R.S. Fisher and D.M. Williams. 1980. Damage to the ventromedial hypothalamic nucleus of newborn rats: Growth, ingestion, and neuroendocrine dysfunction. Experimental Neurology, **71**: 191-202.

**Hill, D.L.** and C.R. Almli. 1980. Midbrain reticular formation damage and the ontogeny of ingestive and sensorimotor behaviors. Physiology and Behavior, **26**: 269- 276.

**Hill, D.L.** and C.R. Almli. 1981. Olfactory bulbectomy in infant rats: Survival growth and ingestive behaviors. Physiology and Behavior, **27**: 811-817.

Hill, D.L., C.M. Mistretta and R.M. Bradley. 1982. Developmental changes in taste response characteristics of rat single chorda tympani fibers. The Journal of Neuroscience, 2: 782-790.

Hill, D.L., C.M. Mistretta and R.M. Bradley. 1983. Development of taste responses in the rat nucleus of the solitary tract. Journal of Neurophysiology, 50: 879-895.

Hill, D.L. and C.R. Almli. 1983. Parabrachial nucleus damage in infant rats produces residual deficits in gustatory preferences/aversions and sodium appetite. Developmental Psychobiology, 16: 519-533.

Hill, D.L. and T.C. Bour. 1985. Addition of functional amiloride-sensitive components to the receptor membrane: A possible mechanism for altered taste responses during development. Developmental Brain Research, 20: 310-313.

Hill, D.L., C.M. Mistretta and R.M. Bradley. 1986. Effects of dietary NaCl deprivation during early development on behavioral and neurophysiological taste responses. Behavioral Neuroscience, 100:390-398.

Hill, D.L. 1987. Development of taste responses in the rat parabrachial nucleus. Journal of Neurophysiology, 57:481-495.

Formaker, B.K. and D.L. Hill. 1987. The suppressed response of NaCl following amiloride: A halogen-specific effect, Annals N.Y. Academy Science, 510:290-292.

Hill, D.L. 1987. Development of amiloride sensitivity in the rat peripheral gustatory system: a single fiber analysis, Annals N.Y. Academy Science, 510:369-372.

Lasiter, P.S. and D.L. Hill. 1987. Histogenesis of pontine taste area neurons in the albino rat, Annals N.Y. Academy Science, 510:444-446.

Hill, D.L. 1987. Susceptibility of the Developing Rat Gustatory System to the Physiological Effects of Dietary Sodium Deprivation, The Journal of Physiology, (London), 393:413-424.

Hill, D.L. 1988. Development of Chorda Tympani Nerve Taste Responses in the Hamster, The Journal of Comparative Neurology, 268:346-356.

Hill, D.L. and P.R. Przekop. 1988. Influences of dietary sodium on functional taste receptor development: A sensitive period, Science, 241:1826-1828.

Formaker, B.K. and D.L. Hill. 1988. An analysis of the residual NaCl taste response following amiloride, American Journal of Physiology, 255:R1002-R1007.

Formaker, B.K. and **D.L. Hill**. 1990. Alterations of salt taste perception in the developing rat, Behavioral Neuroscience, 104:356-364.

**Hill, D.L.** and C.M. Mistretta. 1990. Developmental neurobiology of salt taste sensation, Trends in Neuroscience, 13:188-195.

**Hill, D.L.**, B.K. Formaker and K.S. White. 1990. Perceptual characteristics of the amiloride-suppressed sodium chloride taste response in the rat. Behavioral Neuroscience, 104:734-741.

Formaker, B.K. and **D.L. Hill**. 1990. Peripheral taste responses in genetically hypertensive rats. Physiology and Behavior, 47:1229-1237.

Przekop, P., D.G. Mook and **D.L. Hill**. 1990. Functional recovery of the gustatory system following sodium deprivation during development: How much sodium and where. American Journal of Physiology, 259:R786-R791.

King, C.T. and **D.L. Hill**. 1991. Dietary sodium chloride deprivation throughout development selectively influences the terminal field organization of gustatory afferent fibers projecting to the rat nucleus of the solitary tract, Journal of Comparative Neurology, 303:159-169.

Formaker, B.K. and **D.L. Hill**. 1991. Lack of amiloride sensitivity in SHR and WKY Glossopharyngeal taste responses to NaCl, Physiology and Behavior, 50:765-769.

Vogt, M.B. and **D.L. Hill**. 1993. Enduring alterations in neurophysiological taste responses after early dietary sodium deprivation. Journal of Neurophysiology, 69:832-841.

Stewart, R.E., R.J. Parsons and **D.L. Hill**. 1993. Development of some early sensorimotor behaviors in sodium-restricted rats. Physiology and Behavior, 53:813-822.

Stewart, R.E., H. Tong, R.M. McCarty and **D.L. Hill**. 1993. Altered gustatory development in Na<sup>+</sup>-restricted rats is not explained by low Na<sup>+</sup> levels in mother's milk. Physiology and Behavior, 53:823-826.

King, C.T. and **D.L. Hill**. 1993. Neuroanatomical alterations in the rat nucleus of the solitary tract following early maternal NaCl deprivation and subsequent NaCl repletion. Journal of Comparative Neurology, 333:531-542.

Ye, Q., R.E. Stewart, G.L. Heck, **D.L. Hill** and J.A. DeSimone. 1993. Na<sup>+</sup>-restricted rats lack functional Na<sup>+</sup> channels in taste cell apical membranes: Proof by membrane voltage perturbation. Journal of Neurophysiology, 70:1713-1716.

Hill, D.L. and L.M. Phillips. Functional Plasticity of Regenerated and Intact Taste Receptors in Adult Rats Unmasked by Dietary Sodium Restriction. Journal of Neuroscience, 14:2904-2910.

Phillips, L.M., R.E. Stewart, and D.L. Hill. 1995. Cross-Fostering Between Normal and Sodium Restricted Rats: Effects on Peripheral Gustatory Function. American Journal of Physiology, 269:R603-R607.

R.E. Stewart, P.S. Lasiter, D.J. Benos and D.L. Hill. 1995. Immunohistochemical correlates of peripheral gustatory sensitivity to Na<sup>+</sup> and amiloride. Acta Anatomica, 153:310-319.

Stewart, R.E. and D.L. Hill. 1996. Timecourse of Saline-Induced Recovery of the Gustatory System in Sodium-Restricted Rats. American Journal of Physiology, 270:R704-R712.

Phillips, L.M. and D.L. Hill. 1996. Novel regulation of peripheral gustatory function by the immune system. American Journal of Physiology, 271:R857-R862.

Krimm, R.F. and D.L. Hill. 1997. Early prenatal critical period for chorda tympani nerve terminal field development. Journal of Comparative Neurology, 378:254-264.

Walker, B.R. and D.L. Hill. 1998. Developmental sodium restriction and gustatory afferent terminal field organization in the parabrachial nucleus. Physiology and Behavior, 64:173-178.

Kitada, Y., Y. Mitoh and D.L. Hill. 1998. Salt taste responses of the IXth nerve in Sprague-Dawley rats: Lack of sensitivity to amiloride. Physiology and Behavior, 63: 945-949.

Krimm, R.F. and D.L. Hill. 1998. Innervation patterns of single fungiform taste buds during development in rat. Journal of Comparative Neurology, 398:13-24.

Sollars, S.I. and D.L. Hill. 1998. Taste Responses in the Greater Superficial Petrosal Nerve: Substantial Sodium Salt and Amiloride Sensitivities Demonstrated in Two Rat Strains. Behavioral Neuroscience, 112:991-1000.

Krimm, R.F. and D.L. Hill. 1999. Early Dietary Sodium Restriction Disrupts the Peripheral Anatomical Development of the Gustatory System. Journal of Neurobiology, 39:218-226.

Krimm, R.F. and D.L. Hill. 2000. Neuron/Target Matching Between Chorda Tympani Neurons and Taste Buds During Postnatal Rat Development. Journal of Neurobiology, 43:98-106.

Hendricks, S.J., R.E. Stewart, G.L. Heck, J.A. DeSimone and **D.L. Hill**. 2000. Development of Rat Chorda Tympani Sodium Responses: Evidence for Age-Dependent Changes in Global Amiloride-Sensitive Na<sup>+</sup> Channel Kinetics. Journal of Neurophysiology, **84**: 1531-1544.

Thaw, A.K., S. Frankmann and **D.L. Hill**. 2000. Behavioral Taste Responses of Developmentally NaCl-restricted Rats to Various Concentrations of NaCl. Behavioral Neuroscience, **114**: 437-441.

Sollars, S.I. and **D.L. Hill**. 2000. Lack of Functional and Morphological Susceptibility of the Greater Superficial Petrosal Nerve to Developmental Dietary Sodium Restriction. Chemical Senses, **25**: 719-727.

Sollars, S.I., P. Smith and **D.L. Hill**. 2001. Time Course of Morphological Alterations of Fungiform Papillae and Taste Buds Following Chorda Tympani Transection in Neonatal Rats, Journal of Neurobiology, **51**:223-236.

McCluskey, L.P. and **D.L. Hill**. 2002. Sensitive Periods For the Effect of Dietary Sodium Restriction on Intact and Regenerated Taste Receptor Cells. American Journal of Physiology, **283**:R1275-R1284.

Hendricks, S.J., Sollars, S.I. and **D.L. Hill**. 2002. Injury-Induced Functional Plasticity in the Peripheral Gustatory System. Journal of Neuroscience, **22**:8607-8613.

Shuler, M.G., Krimm, R.F. and **D.L. Hill**. 2004. Neuron/Target Plasticity in the Peripheral Gustatory System. Journal of Comparative Neurology, **472**:173-182.

Hendricks, S.J., Brunjes, P.C. and **D.L. Hill**. 2004. Taste Bud Cell Dynamics During Normal and Sodium-Restricted Development. Journal of Comparative Neurology, **472**:183-192.

Farbman, A.I., Guagliardo N., Sollars, S.I. **Hill, D.L.** 2004. Each sensory nerve arising from the geniculate ganglion expresses a unique fingerprint of neurotrophin and neurotrophin receptor genes. Journal of Neuroscience Research. **78**:659-67.

Sollars, S.I. and **D.L. Hill** 2005. *In vivo* Neurophysiological Recordings from Geniculate Ganglia: Taste Response Properties of Individual Greater Superficial Petrosal and Chorda Tympani Neurons. Journal of Physiology, **564**: 877-893.

**Hill, D.L.** 2005. Nerve–Target Interactions in the Gustatory System Following Unilateral Chorda Tympani Nerve Section. Chemical Senses **30**: i64 - i65.

Sollars, S. I., Walker, B. R., Thaw, A. K. and **Hill, D. L.**, 2006. Age-related decrease of the chorda tympani nerve terminal field in the nucleus of the solitary tract is prevented by dietary sodium restriction during development. Neuroscience. **137**, 1229-1236.

May, O. L. and **Hill, D. L.**, 2006. Gustatory terminal field organization and developmental plasticity in the nucleus of the solitary tract revealed through triple fluorescent labeling. Journal of Comparative Neurology, 497: 658-669.

May, O.L., Erisir, A., and **D.L. Hill**. 2007. The Ultrastructure of Primary Afferent Terminals and Synapses in the Rat Nucleus of the Solitary Tract: A Comparison Among the Greater Superficial Petrosal, Chorda Tympani, and Glossopharyngeal Nerves. Journal of Comparative Neurology, 502: 1066-1078.

Mangold, J. and **Hill, D.L.** 2007. Extensive Reorganization of Primary Afferent Projections into the Gustatory Brainstem Induced by Dietary Sodium Restriction During Development: Less is More. Journal of Neuroscience, 27:4650-4662.

Guagliardo, N.A. and **Hill, D.L.** 2007. Fungiform Taste Bud Degeneration in C57BL/6J Mice Following Chorda-Lingual Nerve Transection, Journal of Comparative Neurology, 504: 206-216.

May, O.L., Erisir, A., and **Hill, D.L.** 2008. Modifications of Gustatory Nerve Synapses onto Nucleus of the Solitary Tract Neurons Induced by Dietary Sodium-Restriction During Development. Journal of Comparative Neurology, 508: 529-541.

Mangold, J. and **Hill, D.L.** 2008. Postnatal Reorganization of Primary Afferent Terminal Fields in the Rat Gustatory Brainstem is Determined by Prenatal Dietary History. Journal of Comparative Neurology, 509:594-607.

Thomas, J.E. and **D.L. Hill**. 2008. The Effects of Dietary Protein Restriction on Chorda Tympani Nerve Taste Responses and Terminal Field Organization. Neuroscience, 157:329-339.

Guagliardo, N.A., West, K.N., McCluskey, L.P., and **D.L. Hill**. 2009. Attenuation of Peripheral Salt Taste Responses and Local Immune Function Contralateral to Gustatory Nerve Injury: Effects of Aldosterone. Am. J. Physiol. Regul. Integr. Comp. Physiol. 297:R1103-R1110.

*Invited Contributions to Books & Monographs:*

**Hill, D.L.** Development and Plasticity of the Gustatory System. 1987. In T. Finger & W. Silver (Eds.) Neurobiology of Taste and Smell, Wiley, New York, 379-400.

**Hill, D.L.** Development of Salt Taste and the Amiloride-Sensitive Channel. 1993. In Development, Growth and Senescence in the Chemical Senses, NIH:NIDCD Monograph, Volume 3,57-60.

Stewart, R.E. and **D.L. Hill**. 1993. The developing gustatory system: Functional, morphological and behavioral perspectives. In S. Simon and S. Roper (Eds.) Mechanisms of Taste Perception, CRC Press, Boca Raton, 127-158.

Mistretta, C.M. and **D.L. Hill**. 1995. Development of the Taste System. Basic Neurobiology. In Handbook of Olfaction and Gustation, (R.L. Doty, Ed.), pp. 635-668.

R.E. Stewart, J.A. DeSimone and **D.L. Hill**. 1997. New Perspectives of Taste Physiology: Transduction, Development and Plasticity. American Journal of Physiology, 272:C1-C26.

**Hill, D.L.** 1999. Early Influences on Gustatory Development. In The Biology of Early Influences, (R. Hyson & F. Johnson, Eds.), Plenum: New York, pp. 35-52.

**Hill, D.L.** Taste Development. 2001. In Handbook of Behavioral Neurobiology, 13: Developmental Psychobiology, (E. Blass, Ed.), pp. 517-550.

Mistretta, C.M. and **D.L. Hill**. 2003. Development of the Taste System. In Handbook of Olfaction and Gustation, 2<sup>nd</sup> Edition. (R.L. Doty, Ed.), pp. 759-782.

**Hill, D.L.** Neural Plasticity in the Gustatory System. 2004. Nutrition Reviews, 62:S208-S217.

**Hill, D.L.** and May, O.L. 2006. Development and Plasticity of the Gustatory Portion of the Nucleus of the Solitary Tract. In: The Role of the Nucleus of the Solitary Tract in Gustatory Processing (R.M. Bradley, Editor), CRC Press, Boca Raton, FL, 107-135.