

CURRICULUM VITAE

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Education: B.A., Hiram College, 1969
Ph.D., Syracuse University, 1972

Positions (in reverse chronological order):

Herwick Professor of Biology, Washington & Lee University 2008-present; Pesquisador Visitante Especial, Universidade Federal do Amazonas (UFAM) 2013-2015. Editor-in-Chief, *Annals of the Entomological Society of America*, 2007 – present. Research supported by John T. Herwick Endowment, Brazilian research fellowship from CAPES, and by Lenfest faculty research grants from Washington and Lee University. Head of Department of Biology, Washington and Lee University, 1993-2008. Editorial Board of *Oecologia*, 1997 - 2003.

Professor of Biology, Program in Ecology, School of Life and Health Sciences, and member of Graduate Faculty, University of Delaware, 1973-1993. Joint appointments: (1) College of Marine Studies (1974-1984); (2) Department of Entomology and Applied Ecology, College of Agriculture (1985-1993). Research supported by grants from NSF, NOAA (Sea Grant), and UDRF (U. Del.).

Postdoctoral Fellow, Cornell University, 1972 - 1973. Studies of population genetics and agro-ecosystems with D. Pimentel. Supported by grant from Ford Foundation to DP.

Postdoctoral Fellow, Costa Rica, summer 1972. Behavioral ecology of tropical hummingbirds with L. L. Wolf. Supported by NSF grant to LLW.

Memberships: American Association for the Advancement of Science
Linnean Society of London (Fellow)
Royal Entomological Society of London (Fellow)
Ecological Society of America (Life member)
Entomological Society of America (Editor-in-Chief)

Courses Taught:

Tropical Ecology: Field Trip to the Galápagos Islands, for advanced undergraduates
Tropical and Temperate Zone Entomology (Virginia; Costa Rica) for undergraduates
Conservation Ecology, for biology and environmental science students
Community Ecology, for graduate students
Population Ecology, for graduate students
Ecology, for undergraduate biology majors
Evolution, for undergraduate biology majors
Zoology, for undergraduate biology majors
General Biology, for biology majors and nursing/allied health students
Ecology of Place, for environmental studies majors
Ecology and Evolutionary Biology, for non-science majors
Evolution, for advanced undergraduates
Animal Physiology, for biology majors
Experimental Ecology, a field/laboratory for advanced undergraduate students
Ecology Seminar, for graduate and advanced undergraduate students

Research Interests:

1. Causes of tropical biodiversity. *What are the biotic and abiotic environmental factors important to the evolution and maintenance of biodiversity in the most species-rich and endangered ecosystem in the world?* At present I am focusing on fish species diversity in floodplain lakes in the Amazon River Basin, in collaboration with faculty and graduate students at the Federal University of the Amazon (UFAM). The region has a pronounced hydrologic cycle, with forests along rivers that are submerged much of the year. Life cycles of fish species are timed to correspond to flooding and receding waters in these habitats. Floodplain lakes created during low water periods create a potential for metacommunity dynamics and adaptive radiation.

2. Biodiversity and productivity: The role of predators. *Do generalist predators exert top-down control on diversity and productivity of lower trophic levels?* Populations of a model predator, the praying mantis, are manipulated in controlled experiments to determine the influence of predation on other predators, on herbivorous species, and on plants in old-field ecosystems. These studies produced the first experimental evidence of top-down predator influence (trophic cascade) on plant productivity in a highly diverse natural ecosystem.

3. Population dynamics of arthropod predators. *What regulates predator populations?* Generalist predators may be regulated by their prey; however, prey may include each other. Laboratory and field tests of competition, interspecific predation, and cannibalism among different species of praying mantids and cursorial spiders that co-occur in nature have revealed some perplexing relationships, e.g., the same conditions that reduce competition promote interspecific predation and cannibalism among members of the generalist predator guild. These interactions among predator species can make predictions of their impact on the rest of an ecosystem uncertain: some prey species are reduced by direct predation, while others increase in abundance when predators interfere with each other. Interaction strengths also vary widely among prey species and over time. The resultant uncertainty has important implications for using predators as agents of pest control.

Publications in chronological order:

- Hurd, L. E., M. W. Mellinger, L. L. Wolf, and S. J. McNaughton. 1971. Stability and diversity at three trophic levels in terrestrial successional ecosystems. *Science* 173:1134-1136.
- Pimentel, D., L. Hurd, A. Bellotti, M. Forster, I. Oka, O. Sholes, and R. Whitman. 1973. Food production and the energy crisis. *Science* 182:443-449.
- Pimentel, D., L. Hurd, A. Bellotti, M. Forster, I. Oka, O. Sholes, and R. Whitman. 1973. Corn, food, and the energy crisis. *Environmental Biology* 73:1-36.
- Hurd, L. E., and L. L. Wolf. 1974. Stability in relation to nutrient enrichment in arthropod consumers of old field successional ecosystems. *Ecological Monographs* 44:465-482.
- Hurd, L. E., and R. M. Eisenberg. 1975. Divergent selection for geotactic response and evolution of reproductive isolation in sympatric and allopatric populations of houseflies. *American Naturalist* 109:353-358.
- Cornell, H. V., L. E. Hurd, and V. A. Lotrich. 1976. A measure of response to perturbation used to assess structural change in some polluted and unpolluted stream fish communities. *Oecologia* 23:335-342.
- Eisenberg, R. M., and L. E. Hurd. 1977. An ecological study of the emergence characteristics for egg cases of the Chinese mantis (*Tenodera aridifolia sinensis* Saussure). *American Midland Naturalist* 97:478-482.
- Hurd, L. E., R. M. Eisenberg, and J. O. Washburn. 1978. Effects of experimentally manipulated density on field populations of the Chinese Mantis (*Tenodera aridifolia sinensis* Saussure). *American Midland Naturalist* 99:58-64.

- Hurd, L. E., G. W. Smedes, and T. A. Dean. 1979. An ecological study of a natural population of diamondback terrapins (*Malaclemys terrapin terrapin*) in a Delaware salt marsh. *Estuaries* 2:28-33.
- Curtis, L. A., and L. E. Hurd. 1979. On the broad nutritional requirements of the mud snail, *Ilyanassa obsoleta*, and its polytrophic role in the food web. *Journal of Experimental Marine Biology and Ecology* 41:289-297.
- Dean, T. A., and L. E. Hurd. 1980. Development of a marine fouling community: the influence of early colonists on later arrivals. *Oecologia* 46:295-301.
- Curtis, L. A., and L. E. Hurd. 1980. The effect of salinity on crystalline style occurrence in the estuarine snail, *Ilyanassa obsoleta* Say (Mollusca: Neogastropoda), and its potential significance with respect to local distribution. *Veliger* 23:155-158.
- Hurd, L. E., and R. M. Eisenberg. 1980. Arthropod community response to an experimentally introduced generalist predator, the Chinese mantis (*Tenodera aridifolia sinensis* Saussure). *Bulletin Ecological Society America* 61:146.
- Curtis, L. A., and L. E. Hurd. 1981. Nutrient procurement strategy of a deposit-feeding estuarine neogastropod, *Ilyanassa obsoleta*. *Estuarine Coastal and Shelf Science* 13:277-285.
- Curtis, L. A., and L. E. Hurd. 1981. Crystalline style cycling in *Ilyanassa obsoleta* (Say): Further studies. *Veliger* 24:91-96.
- Eisenberg, R. M., L. E. Hurd, and J. A. Bartley. 1981. Ecological consequences of food limitation for adult mantids (*Tenodera aridifolia sinensis* Saussure). *American Midland Naturalist* 106:209-218.
- Smedes, G. W., and L. E. Hurd. 1981. An empirical test of community stability: resistance of a fouling community to a biological patch-forming disturbance. *Ecology* 62:1561-1572.
- Curtis, L. A., and L. E. Hurd. 1983. Age, sex, and parasites: spatial heterogeneity in a sandflat population of *Ilyanassa obsoleta*. *Ecology* 64:819-828.
- Rathet, I. H., and L. E. Hurd. 1983. Ecological relationships of three co-occurring mantids, *Tenodera sinensis* (Saussure), *T. angustipennis* (Saussure), and *Mantis religiosa* (Linnaeus). *American Midland Naturalist* 110:240-248.
- Hurd, L. E., and R. M. Eisenberg. 1984. Experimental density manipulations of the predator *Tenodera sinensis* (Orthoptera: Mantidae) in an old-field community. I. Mortality, development and dispersal of juvenile mantids. *Journal of Animal Ecology* 53:269-281.
- Hurd, L. E., and R. M. Eisenberg. 1984. Experimental density manipulations of the predator *Tenodera sinensis* (Orthoptera: Mantidae) in an old-field community. II. The influence of mantids on arthropod community structure. *Journal of Animal Ecology* 53:955-967.
- Hurd, L. E. 1985. Ecological considerations of mantids as biocontrol agents. *Antenna* (London) 9:19-22.
- Hurd, L. E. 1985. On the importance of carrion to reproduction in an omnivorous estuarine neogastropod, *Ilyanassa obsoleta* (Say). *Oecologia* 65:513-515.
- Hurd, L. E. and I. H. Rathet. 1986. Functional response and success in juvenile mantids. *Ecology* 67:163-167.
- Hurd, L. E. 1988. Consequences of divergent egg phenology to predation and coexistence in two sympatric, congeneric mantids (Orthoptera: Mantidae). *Oecologia* 76:547-550.
- Hurd, L. E. and R. M. Eisenberg. 1989. A mid-summer comparison of sizes and growth rates of three sympatric mantids (Mantodea: Mantidae) in two old-field habitats. *Proceedings Entomological Society Washington* 91:51-54.
- Hurd, L. E. and R. M. Eisenberg. 1989. The temporal distribution of hatching times in three sympatric mantids (Mantodea: Mantidae) with implications for niche separation and coexistence. *Proceedings Entomological Society Washington* 91:55-58.
- Hurd, L. E. 1989. The importance of late season flowers to the fitness of an insect predator, *Tenodera sinensis* Saussure (Orthoptera: Mantidae) in an old field community. *Entomologist* (London) 108:223-228.
- Eisenberg, R. M., L. E. Hurd, and R. B. Ketcham. 1989. The cellular slime mold guild and its

- bacterial prey: growth rate variation at the inter- and intraspecific levels. *Oecologia* 79:458-462.
- Hurd, L. E., P. E. Marinari, and R. M. Eisenberg. 1989. The influence of temperature and photoperiod on early developmental rate of *Tenodera sinensis* Saussure (Mantodea: Mantidae). *Proceedings Entomological Society Washington* 91:529-533.
- Eisenberg, R. M., and L. E. Hurd. 1990. Egg dispersion in two species of praying mantids (Mantodea: Mantidae). *Proceedings Entomological Society Washington* 92:808-810.
- Hurd, L. E. 1990. Ecological principles: general aspects. In: *Magill's Survey of Life Sciences*, Salem Press.
- Hurd, L. E. 1990. Predator-prey relationships. In: *Magill's Survey of Life Sciences*, Salem Press.
- Hurd, L. E., and R. M. Eisenberg. 1990. Experimentally synchronized phenology and interspecific competition in mantids. *American Midland Naturalist* 124:390-394.
- Hurd, L. E., and R. M. Eisenberg. 1990. Arthropod community responses to manipulation of a bitrophic predator guild. *Ecology* 76:2107-2114.
- Hurd, L. E. 1991. Growth efficiency in juvenile mantids: absence of selection for optimization in a food-limited environment. *Proceedings Entomological Society Washington* 93:748-750.
- Fagan, W. F., and L. E. Hurd. 1991. Direct and indirect effects of generalist predators on a terrestrial arthropod community. *American Midland Naturalist* 126:380-384.
- Fagan, W. F., and L. E. Hurd. 1991. Late season food level, cannibalism, and oviposition in adult mantids: sources of variability in a field experiment. *Proceedings Entomological Society Washington* 93:956-961.
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- Eisenberg, R. M., L. E. Hurd, W. F. Fagan, K. J. Tilmon, W. E. Snyder, K. S. Vandersall, S. G. Datz, and J. D. Welch. 1992. Adult dispersal in *Tenodera aridifolia sinensis*. *Environmental Entomology* 21:350-353.
- Hurd, L. E. and W. F. Fagan. 1992. Cursorial spiders and succession: age or habitat structure? *Oecologia* 92:215-221.
- Eisenberg, R. M. and L. E. Hurd. 1993. Relative egg success and implications for distribution of three sympatric mantids (Mantodea: Mantidae). *Proceedings Entomological Society Washington* 95:271-277.
- Karlson, R. H. and L. E. Hurd. 1993. Disturbance, coral reef communities, and changing ecological paradigms. *Coral Reefs* 12:117-125.
- Hurd, L. E., R. M. Eisenberg, W. F. Fagan, K. S. Vandersall, K. J. Tilmon, W. E. Snyder, S. G. Datz, and J. D. Welch. 1994. Cannibalism reverses male-biased sex ratio in adult mantids: female strategy against food limitation? *Oikos* 69:193-198.
- Fagan, W. F. and L. E. Hurd. 1994. High-density hatching of a generalist arthropod predator: population consequences and community impact. *Ecology* 75:2022-2032.
- Moran, M. D., and L. E. Hurd. 1994. Environmentally determined male-biased sex ratio in a praying mantid. *American Midland Naturalist* 132:205-208.
- Moran, M. D., and L. E. Hurd. 1994. Short-term responses to elevated predator densities: noncompetitive intraguild interactions and behavior. *Oecologia* 98:269-273.
- Hurd, L. E., Eisenberg, M. D. Moran, T. P. Rooney, W. J. Gangloff, and V. M. Case. 1995. Time, temperature and food as determinants of population persistence in a temperate univoltine insect. *Environmental Entomology* 24:348-353.
- Snyder, W. E. and L. E. Hurd. 1995. Egg-hatch phenology and intraguild predation between two mantid species. *Oecologia* 104:496-500.
- Moran, M. D., T. P. Rooney, and L. E. Hurd. 1996. Top-down cascade from a bitrophic predator in an old-field community. *Ecology* 77:2219-2227.
- Rooney, T. P., A. T. Smith, and L. E. Hurd. 1996. Global warming and the regional

- persistence of a temperate-zone insect (*Tenodera sinensis*). *American Midland Naturalist* 136:84-93.
- Dussé, K. and L. E. Hurd. 1997. Food limitation reduces body length in mantid nymphs, *Tenodera sinensis* Saussure (Mantodea: Mantidae): Implications for fitness. *Proceedings Entomological Society Washington* 99:490-493.
- Moran, M. D. and L. E. Hurd. 1997. Relieving food limitation reduces survivorship of a generalist predator. *Ecology* 78:1266-1270.
- Jones, T. H., M. D. Moran, and L. E. Hurd. 1997. Cuticular extracts of five common mantids (Mantodea: Mantidae) of the Eastern United States. *Comparative Biochemistry and Physiology* 116B:419-422.
- Moran, M. D. and L. E. Hurd. 1998. Trophic cascade from a generalist predator in a complex terrestrial community. *Oecologia* 113:126-132
- Hurd, L. E. 1999. Ecology of praying mantids. Chapt. 3 *In* F. R. Prete, H. Wells, P. H. Wells, and L. E. Hurd., eds., *The praying mantids*. Baltimore: Johns Hopkins Press, pp. 43-60.
- Hurd, L. E. 1999. Mantids in ecological research. Chapt. 16 *In* F. R. Prete, H. Wells, P. H. Wells, and L. E. Hurd., eds., *The Praying Mantids*. Baltimore: Johns Hopkins Press, pp. 318-321.
- Fagan, W. F., M. D. Moran, J. J. Rango, and L. E. Hurd. 2002. Community effects of praying mantids: a meta-analysis of the influences of species identity and experimental design. *Ecological Entomology* 27:385-395.
- Hurd, L. E. 2002. Praying mantis. *Magill's Encyclopedia of Science: Animal Life*, Salem Press, pp.1301-1302.
- Hurd, L. E. 2002. Predation. *Magill's Encyclopedia of Science: Animal Life*, Salem Press, p. 1304-1306.
- Prete, F. R., L. E. Hurd, D. Branstrator, and A. Johnson. 2002. Responses to computer generated visual stimuli by the male praying mantis, *Sphodromantis lineola* (Burmeister). *Animal Behaviour* 63:503-510.
- Beckman, N. and L. E. Hurd. 2003. Pollen feeding and fitness in praying mantids: the vegetarian side of a tritrophic predator. *Environmental Entomology* 32:881-885.
- Hurd, L. E. 2003. Mantodea. Pp. 675-677 *In* *Encyclopedia of Insects*, V. H. Resh and R. T. Cardé, eds. Academic Press.
- Hurd, L. E. 2004. Mantodea—praying mantids. *Encyclopedia of Entomology*. Kluwer Academic Publishers.
- Hurd, L. E. 2004. Predation: the role of generalist predators in biodiversity and biological control. *Encyclopedia of Entomology*. Kluwer Academic Publishers.
- Hurd, L. E., F. R. Prete, T. H. Jones, T. B. Singh, J. E. Co, and R. T. Portman. 2004. First identification of a putative sex pheromone in a praying mantid. *Journal of Chemical Ecology* 30:155-166.
- Hurd, L. E., R. E. Mallis, K. C. Bulka, and A. M. Jones. 2004. Life history, environment, and deme extinction in the Chinese mantid *Tenodera aridifolia sinensis* (Mantodea: Mantidae). *Environmental Entomology* 33:182-187.
- Mallis, R. E. and L. E. Hurd. 2005. Diversity among ground-dwelling spider assemblages: habitat generalists and specialists. *Journal of Arachnology* 33:101-109.
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- Hurd, L. E. 2010. The publishing ecosystem, reciprocal altruism, and the kindness of strangers. *American Entomologist* 56:54-55.
- Prete, F. R. S., Dominguez, J. L. Komito, R. Theis, J. M. Dominguez, L. E. Hurd, and G. J. Svenson. 2012. Appetitive responses to computer-generated visual stimuli by female *Rhombodera basalis*, *Deroplatys lobata*, *Hierodula membranacea*, and *Miomantis* sp. (Insecta: Mantodea). *Journal of Insect Behavior* 26:261-282.
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- Rivas, A.F., Kahn, J. R., Freitas, C. E., Hurd, L. E. and Cooper, G. 2013. The role of payments for ecological services in the sustainable development and environmental preservation of the rainforest: a case study of Barcelos, Amazonas, BR. *International Journal of Social Ecology and Sustainable Development* 4:13-27.
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- deHart, P.A. P., J. M. Taylor, M. C. Campbell, and L. E. Hurd. 2015. Seasonal shifting in diet of the Chinese mantid, *Tenodera aridifolia sinensis* Saussure (Mantodea: Mantidae) as revealed by oxygen and hydrogen isotopes. *Entomological News* 125: 153-162.
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