

Brief CURRICULUM VITAE
NELSON G. HAIRSTON, JR.

July 2018

ADDRESS Department of Ecology and Evolutionary Biology
Corson Hall, Cornell University, Ithaca, New York 14853
Telephone: (607) 254-4231 Fax: (607) 255-8088
e-mail: ngh1@cornell.edu

EDUCATION

B.S. in Zoology, with Honors, University of Michigan, Ann Arbor, Michigan, 1971
Ph.D. in Zoology, University of Washington, Seattle, Washington, 1977
(Supervisory Committee: W.T. Edmondson, Chair; R.T. Paine, W.M. Griffiths, K. Banse, P.L. Illg)

EMPLOYMENT

2017-18, 2009-11 & 2001-05 Chair, Department of Ecology and Evolutionary Biology, Cornell University
2012 & 2006-09 Senior Associate Dean, College of Arts and Sciences, Cornell University
1996- Frank H. T. Rhodes Professor of Environmental Science, College of Arts and Sciences, Cornell University
1988- Professor, Department of Ecology and Evolutionary Biology, Cornell University
1985-1987 Associate Professor, Section of Ecology and Systematics, Cornell University
1981-1985 Associate Professor, Dept. of Zoology, University of Rhode Island, Kingston, RI
1977-1981 Assistant Professor, Dept. of Zoology, University of Rhode Island, Kingston, RI

GRANTS AND AWARDS (last decade)

Cornell University Atkinson Center \$150,000 (+\$6,000 Engaged Cornell) 2017-2109
USDA Hatch Grants (NIFA) \$95,000 2015-2018; \$75,000 2009-2012; \$45,000 2005-2007
NSF DEB with S Ellner, G Hooker, B Lazzaro, B Miner): \$200,000 2013-2016
NSF DEB with I Hewson: \$100,000; (+\$7,500 REU) 2010-2012
NSF DEB with SP Ellner, LE Jones, GJ Hooker: \$540,000 2008-2012
JS McDonnell Foundation with SP Ellner, LE Jones, GF Fussmann): \$490,000 2008-2012
NY State Great Lakes Protection Fund with CT Driscoll, DJ Leopold, DM Peteet): \$200,000 2004-2008
Andrew Mellon Foundation with SP Ellner: \$486,000 2003-2008
Atlantic Philanthropies Inc. for Cornell Biogeochemistry and Biocomplexity Initiative (Lead PI and Chair of Steering Committee): \$6,550,000 2002-2008
NSF Doctoral Dissertation Improvement Grants for PhD students: Katherine Sirianni (\$20,928 2015-17)
Cornelia Twining (\$20,928 2015-2017); Christopher Dalton (\$20,081 2013-15); Sarah Collins (\$15,000 2011-2013); Joseph Simonis (\$14,773 2011-13); Cayelan Carey (\$15,000 2009-2011); Michael Booth (\$14,000 2008-10)

AWARDS & RECOGNITIONS (last 5 years)

Fellow – Ecological Society of America, Class of 2018
Sustaining Fellow – Association for the Sciences of Limnology & Oceanography, Class of 2017
Kendall S. Carpenter Memorial Advising Award – Cornell University-wide recognition for excellence in undergraduate advising and mentoring, 2013.
Trustee, Cornell University Board of Trustees (faculty elected position; 2010-2014)
Trustee, Paleontological Research Institute (member elected position – two terms; 2010-2018)

Honorary Lectureships (selected last 5 years)

Keynote Speaker, DynaTrait International Conference, Hannover, Germany, October 2017
Keynote Speaker, Symposium on “Natural Selection is Ecology in Action” in honor of W. Lampert’s 75th birthday, Max-Planck-Institute for Evolutionary Biology, Plön, Germany, October 2016
Plenary Speaker, Monte Verità Conference on “The Genomic Basis of Eco-Evolutionary Change,” Ascona, Switzerland, June 2016

Featured Speaker, Gordon Conference on Predator-Prey Interactions, Ventura, CA, Jan 2016
 Visiting Eminent Ecologist, Kellogg Biological Station, Michigan State University, 5-day visit, July 2015
 L. Floyd Clarke Lecturer, Department of Zoology and Physiology, University of Wyoming, October 2014
 Keynote Speaker, *Daphnia* Genomics Consortium (Birmingham, England), January 2014
 Keynote Speaker, Society for Ecology (Germany, Switzerland & Austria), Germany, September 2013
 Dennis H. Chitty Lecturer (grad student invited), Dept. of Zoology, Univ. British Columbia, March 2013
 Plenary Speaker, 7th Internat. Symp: "Eco-Evolutionary Dynamics," KU Leuven, Belgium, February 2013
 Plenary Speaker, Lorentz Center Workshop: "Eco-evolutionary Dynamics in a Changing World,"
 Leiden, Netherlands, February 2013
 Plenary Speaker, Amer. Society of Limnology and Oceanography, Annual Mtg, Otsu, Japan, July 2012

Journals and Funding Agencies

Panel Member, DynaTrait, DFG Priority Program, German Science Foundation, 2014 & 2017
 Member Site Visit Committee: Strategic Partnership Grants for Networks, Natural Sciences and
 Engineering Research Council of Canada, Montreal, 4/2016
 Board of Editors, ECOLOGY/ECOLOGICAL MONOGRAPHS, 1989-1992; 1994-1996
 Editorial Board, LIMNOLOGY AND OCEANOGRAPHY, 1986-1989; 2003-2004
 Panel Member, Population Biology and Physiological Ecology Program, National Science
 Foundation, 1985-1987

Society Activities

ECOLOGICAL SOCIETY OF AMERICA

Member of: Eminent Ecologist/Distinguished Service Award Subcommittee 2002-2007
 Governing Board 1996-1998; Council of Representatives 1990-1993; Awards Committee, 1992-1995;
 Chair, R.H. MacArthur Award Subcommittee, 1991-1992

ASSOCIATION FOR THE SCIENCES OF LIMNOLOGY AND OCEANOGRAPHY

Member of: Committee on Publications 1997- 2001; Future Limnology and Oceanography Operations
 Committee 1994-1996; Committee on Financial Resources 1991-1992, 1995-1997; Challenges to
 Limnology Committee 1992-1994; Organizing Committee, 1986 Annual Meeting

AMERICAN SOCIETY OF NATURALISTS

Member, Nominating Committee 1983, 1994, 1999-2002

INTERNATIONAL ASSOCIATION OF THEORETICAL AND APPLIED LIMNOLOGY

National Representative 1992-1995, 2001-2007

Other Activities (selected from last decade)

Member, External Review Committee, Dept. of Ecol. & Evol. Biol., Univ. Toronto, 3/2018
 Recorder, External Adv. Comm., KU Leuven Eco-evo Centre of Excellence, Belgium, 2/2013 & 6/2016
 Member, External Review Committee, Graduate Program in Ecology, Duke University, 1/2014
 External Reviewer for faculty position in Limnology at Uppsala University, Sweden, 7/2012
 External Reviewer for faculty position in Paleocology at Umeå University, Sweden, 7/2011
 Member, External Peer Review Committee, Dept. of Ecol. & Evol. Biol., Yale Univ., 2/2011
 Member, Faculty of 1000, Population Ecology, 2009-2010
 Member, External Peer Review Committee, Eawag (Swiss Fed. Inst. Aquat. Sci. Tech.) 9/2009

GRADUATE STUDENTS ADVISED

MS students: KT Li (URI 1982); CJ Meise (URI 1982); VS George (URI 1983); JV Jackson (URI 1986); SF Tjossem (Cornell 1990); AM Onion (Cornell 2004); LR Schaffner (Cornell current)

PhD students: DH Kesler (1979 U Michigan); BT De Stasio (1989 Cornell); VS George (1990 URI);
 KD Hambright (1991 Cornell); GT Epp (1995 Cornell); CE Cáceres (1997 Cornell); AJ Bohonak (1998
 Cornell); CL Holtmeier (2000 Cornell); DM Post (2000 Cornell); JA Fox (2005 Cornell);
 G Gerrish (2007 Cornell); R Doyle-Morin (2011 Cornell); M Booth (2011 Cornell); CC Carey (2012
 Cornell); JL Simonis (2013 Cornell); SM Collins (2014 Cornell); CM Dalton (2015 Cornell); CW
 Twining (2018 Cornell); KM Sirianni (Cornell current); RLA Wilkins (Cornell current).

Selected PUBLICATIONS divided by areas of contribution to Ecology and Evolutionary Biology –
Eco-evolutionary dynamics - general

- Rudman, SM, M Barbour, K Csillery, P Gienapp, F Guillaume, **NG Hairston Jr**, AP Hendry, JR Lasky, M Rafajlović, K Räsänen, PS Schmidt, O Seehausen, NO Therkildsen, MM Turcotte, JM Levine. 2017. What genomic data can reveal about eco-evolutionary dynamics. *Nature Ecology and Evolution Nature Ecology and Evolution* 2:9-15
- Messer, PW, SP Ellner, **NG Hairston Jr** 2016. Can population genetics adapt to rapid evolution? *Trends in Genetics* 32:408-418.
- Hiltunen, T, **NG Hairston Jr**, G Hooker, LE Jones, SP Ellner. 2014. A newly discovered role of evolution in previously published consumer-resource dynamics. *Ecology Letters* 17:915-923.
- Ellner, SP, MA Geber, **NG Hairston Jr**. 2011. Does rapid evolution matter? Measuring the rate of contemporary evolution and its impacts on ecological dynamics. *Ecology Letters* 14: 603–614.
- Kinnison, MT, **NG Hairston Jr**. 2007. Eco-evolutionary conservation biology: contemporary evolution and the dynamics of persistence. *Functional Ecol.* 21:444-454.
- Hairston, NG Jr**, SP Ellner, MA Geber, T Yoshida, JA Fox. 2005. Rapid evolution and the convergence of ecological and evolutionary time. *Ecology Letters* 8:1114-1127.

Plankton-chemostat consumer-resource and eco-evolutionary dynamics

- Hiltunen, T, SP Ellner, G Hooker, LE Jones, **NG Hairston Jr**. 2014. Eco-evolutionary dynamics in a three-species food web with intraguild predation: intriguingly complex. *Advances in Ecological Research* 50:41-72
- Becks, L, SP Ellner, LE Jones, **NG Hairston Jr**. 2012. The functional genomics of an eco-evolutionary feedback loop: linking gene expression, trait evolution, and community dynamics. *Ecology Letters* 15: 492–501.
- Yoshida, T, SP Ellner, LE Jones, BJM Bohannan, RE Lenski, **NG Hairston Jr**. 2007. Cryptic population dynamics: rapid evolution masks trophic interactions. *PLoS – Biology* 5:1868-1879.
- Meyer, JR, SP Ellner, **NG Hairston Jr**, LE Jones, T Yoshida. 2006. Evolution on the time scale of predator-prey dynamics revealed by allele-specific quantitative PCR. *PNAS* 103:10690-10695.
- Yoshida, T, LE Jones, SP Ellner, GF Fussmann, **NG Hairston Jr**. 2003. Rapid evolution drives ecological dynamics in a predator-prey system. *Nature* 424:303-306.
- Fussmann, GF, SP Ellner, KW Shertzer, **NG Hairston Jr**. 2000. Crossing the Hopf Bifurcation in a live predator-prey system. *Science* 290: 1358-1360.

Rapid evolution in plankton

- Hairston, NG Jr**, CL Holtmeier, W Lampert, LJ Weider, DM Post, JM Fischer, CE Cáceres, JA Fox, U Gaedke. 2001. Natural selection for grazer resistance to toxic cyanobacteria: evolution of phenotypic plasticity? *Evolution* 55:2203-2214.
- Hairston, NG Jr**, W Lampert, CE Cáceres, CL Holtmeier, LJ Weider, U Gaedke, JM Fischer, JA Fox, DM Post. 1999. Rapid evolution revealed by dormant eggs. *Nature* 401:446
- Hairston, NG Jr**, TA Dillon. 1991. Fluctuating selection and response in a population of freshwater copepods. *Evolution* 44:1796-1805.
- Hairston, NG Jr**, BT De Stasio Jr. 1988. Rate of evolution slowed by a dormant propagule pool. *Nature* 336:239-242.
- Hairston, NG Jr**, WE Walton. 1986. Rapid evolution of a life-history trait. *PNAS* 83:4831-4833.

Diapause, egg banks and maintenance of genetic variation in temporally varying environments

- Hairston, NG Jr**, LJ Perry, AJ Bohonak, MQ Fellows, CM Kearns, DR Engstrom. 1999. Population biology of a failed invasion: Paleolimnology of *Daphnia exilis* in upstate New York. *Limnology and Oceanography*. 44:477-486
- Ellner, S, **NG Hairston Jr**, CM Kearns, D Babai. 1999. The roles of fluctuating selection and long-term diapause in microevolution of diapause timing in a freshwater copepod. *Evolution*. 53:111-122.

Hairston, NG Jr, CM Kearns, S Ellner. 1996. Phenotypic variation in a zooplankton egg bank. *Ecology* 77:2382-2392.

Ellner, SP, **NG Hairston Jr**. 1994. Role of overlapping generations in maintaining genetic variation in a fluctuating environment. *American Naturalist* 143:403-417.

Hairston, NG Jr, WR Munns Jr. 1984. The timing of copepod diapause as an evolutionarily stable strategy. *American Naturalist* 123:733-751.

Fish vision, handling time, and ontogenetic changes in optimal diet

Walton, WE, **NG Hairston Jr**, JK Wetterer. 1992. Growth-related constraints on diet selection by sunfish. *Ecology* 73:429-437.

Li, KT, JK Wetterer, **NG Hairston Jr**. 1985. Fish size, visual resolution, and prey selectivity. *Ecology* 66:1729-1735.

Hairston, NG Jr, KT Li, SS Easter Jr. 1982. Fish vision and the detection of planktonic prey. *Science* 218:1240-1242.

Adaptations to damaging solar radiation and accompanying tradeoffs

Hairston, NG Jr. 1981. The interaction of salinity, predators, light and copepod color. In W. D. Williams, editor. Salt Lakes: Proceedings of an International Symposium on Athalassic Salt Lakes. *Hydrobiologia* 81:151-158.

Hairston, NG Jr. 1979. The adaptive significance of color polymorphism in two species of *Diaptomus* (Copepoda). *Limnology and Oceanography* 24:15-37.

Hairston, NG, Jr. 1976. Photoprotection by carotenoid pigments in the copepod *Diaptomus nevadensis*. *PNAS* 73:971-974.

Community and ecosystem processes

Yamamichi, M., T. Kazama, K. Tokita, I. Katano, H. Doi, T. Yoshida, **N.G. Hairston, Jr.**, J. Urabe. 2018. A shady phytoplankton paradox: phytoplankton increases under low light. *Proceedings of the Royal Society B* 285: 20181067

Dalton, C.M., K.E. Tracy, **N.G. Hairston, Jr.**, A.S. Flecker. Fasting or fear: The mechanisms of indirect predator effects on nutrient cycling by intermediate consumers. *Ecology* 99:681-689

Spaak, P., J.A. Fox, **N.G. Hairston Jr**. 2012. Modes and mechanisms of a *Daphnia* invasion. *Proceedings of the Royal Society B* 279: 2936-2944.

Hiltunen, T, LE Jones, SP Ellner, **NG Hairston Jr**. 2013. Temporal dynamics of a simple community with intraguild predation: an experimental test. *Ecology* 94:773-779.

Barreiro Felpeto, A, **NG Hairston Jr**. 2013. Indirect bottom-up control of consumer-resource dynamics: Resource-driven algal quality alters grazer numerical response. *Limnology and Oceanography* 58:827-838.

Dalton, CM, A Mokiao-Lee, TS Sakihara, MG Weber, CA Roco, ZZ Han, B Dudley, RA MacKenzie, **NG Hairston Jr**. 2013. Density- and trait-mediated top-down effects modify bottom-up control of a high endemic tropical aquatic food web. *Oikos* 122:790-800.

Miner, BE, L De Meester, ME Pfrender, W Lampert, **NG Hairston Jr**. 2011. Linking genes to communities and ecosystems: *Daphnia* as an ecogenomic model. *Proceedings of the Royal Society of London B* 279: 1873-1882.

Hambright, KD, **NG Hairston Jr**, WR Schaffner, RW Howarth. 2007. Grazer control of nitrogen fixation: synergisms in the feeding ecology of two freshwater crustaceans. *Fundamental and Applied Limnology* 170:89-101.

Hairston, NG Jr, CM Kearns, LJ Perry, SW Effler. 2005. Species-specific *Daphnia* phenotypes: a history of industrial pollution and pelagic ecosystem response. *Ecology* 86:1669-1678.

Post, DM, ML Pace, **NG Hairston Jr**. 2000. Ecosystem size determines food-chain length in lakes. *Nature* 405:1047-1049.

Hairston, NG Jr, NG Hairston Sr. 1993. Cause-effect relationships in energy flow, trophic structure, and interspecific interactions. *American Naturalist* 142:379-411.