

LINDA SUSAN FINK
July 2016

CURRENT POSITION: Dorys McConnell Duberg Professor of Ecology, Sweet Briar College

PROFESSIONAL EXPERIENCE

Sweet Briar College

2016-2018	Director, Environmental Sciences Program
2015-present	Chair, Department of Environmental Science
2009-present	Dorys McConnell Duberg Professor of Ecology
2006-2009	Chair, Department of Biology
2001-2009	Professor of Biology
2000-2003	Chair, Department of Biology
1995-2001	Associate Professor of Biology
1990-1995	Assistant Professor of Biology

Additional experience

1990	Pratt Postdoctoral Fellow, Mountain Lake Biological Station, University of Virginia (summer)
1989-1990	Visiting Assistant Professor of Biology, Middlebury College
1989	Lecturer, Department of Zoology, University of Florida

EDUCATION

Degrees earned

1989	Ph.D., University of Florida, Department of Zoology Dissertation: Color polymorphism in sphingid caterpillars
1984	M.S., University of Florida, Department of Zoology Thesis: Maternal guarding behavior in the green lynx spider, <i>Peucetia viridans</i>
1980	B.A. <i>summa cum laude</i> , Biology, Amherst College Honors thesis: Bird predation on monarch butterflies

Additional coursework

1983	Organization for Tropical Studies, OTS 83-1, Costa Rica, Jan-Mar
1980-1981	Cornell University, Graduate program in Ecology and Systematics
1979	University of Minnesota, Lake Itasca Biological Station, summer

CURRENT TEACHING RESPONSIBILITY (at Sweet Briar College)

Animal Behavior, Biology in Fiction (first year Honors course), Ecology, Field Natural History, Independent Research, Insect Biology, Introduction to Organisms, Introductory Laboratory Techniques, Seminar in Conservation Biology

GRANTS FROM EXTERNAL SOURCES

- 2010 National Science Foundation, ARI-R2 program: Renovation of Research Laboratories in Guion Science Center. PI: Rob Granger, co-PIs: Linda Fink, Tim Loboschewski, Abe Yousef. Amount requested \$778,684. Not funded.
- 2007 Funding to support Sweet Briar Naturalist-in-Residence position for one year, private donor
- 2006 LICOR Corporation's Genomics Education Matching Funds Grant (to Department)
- 2005 National Science Foundation, REU Supplement (to Brower and Fink), \$10,775
- 2004 National Science Foundation, DEB (Population Biology), for: Overwintering requirements of the monarch butterfly in Mexico: habitat selection versus habitat availability. PI: Lincoln Brower, co-PIs: Linda Fink, David Perault, \$351,000
- 2000 National Science Foundation, CCLI Adaptation and Implementation Program, for: Implementation of a new interdisciplinary Environmental Science curriculum. Co-PI with David Orvos, \$95,157
- 1999 Funding to support Sweet Briar Naturalist-in-Residence position for two summers, private donor
- 1998 Mednick Fellowship, Virginia Foundation for Independent Colleges, \$1400
- 1992 National Science Foundation, Instrumentation & Laboratory Improvement Program, for: Student film production: A new approach to field biology, \$8535
- 1980 National Science Foundation Graduate Fellowship (1980-81, 1982-84)

GRANTS FROM SWEET BRIAR COLLEGE (SINCE 2000)

- 2013 Faculty grant to take five students to the International Congress for Conservation Biology, Baltimore Maryland, July 2013
- 2012 Jessie Ball duPont faculty development grant to attend the meeting of the Association for Biology Laboratory Education
- 2006 Faculty grant, Using microsatellite DNA to determine paternity in a walkingstick (with Robin Davies)
- 2004 Faculty grant, Faculty Fellowship (for sabbatical year 2005-06)
- 2004 Faculty grant, Digital Sweet Briar (with Lynn Rainville, Archaeology)
- 2003 Lectures and Events, to bring in Elizabeth Howard, director of Journey North
- 2003 Lectures and Events, "Nature and Science Writers Series" (with Jennifer Brice, Creative Writing)

PUBLICATIONS

- Brower, L.P., Slayback, D.A., Jaramillo-Lopez, P., Ramirez, I., Oberhauser, K.S., Williams, E.H. and L.S. Fink. 2016. Illegal logging of 10 hectares of forest in the Sierra Chincua monarch butterfly overwintering area in Mexico. *American Entomologist* 62: 92-97. DOI: <http://dx.doi.org/10.1093/ae/tmw040>
- Brower, L.P. and L.S. Fink. 2015. Overview of conservation issues affecting the monarch butterfly. Pp. 143-146 in: *Monarchs in a Changing World: Biology and Conservation of an Iconic Insect*. (Ed. K. Oberhauser). Cornell University Press.
- Brower, L.P., L.S. Fink, R.J. Kiphart, V. Pocius, R. Zubieta, M.I. Ramírez. 2015. Effect of the 2010-2011 drought on the lipid content of monarch butterflies (*Danaus plexippus*) migrating through Texas to their overwintering sites in Mexico. Pp. 117-129 in: *Monarchs in a*

- Changing World: Biology and Conservation of an Iconic Insect. (Ed. K. Oberhauser). Cornell University Press.
- Brower, L.P., E.H. Williams, L.S. Fink, D.A. Slayback, M.I. Ramírez, M.I. Limon Garcia, R.R. Zubieta, S.B. Weiss, W.H. Calvert, W. Zuchowski. 2011. Overwintering clusters of the monarch butterfly coincide with the least hazardous vertical temperatures in the oyamel forest. *Journal of the Lepidopterists' Society* 65: 27-46.
- Brower, L.P., E.H. Williams, D.A. Slayback, L.S. Fink, M.I. Ramírez, R.R. Zubieta, M.I. Limon Garcia, P. Gier, J.A. Lear and T. van Hook. 2009. Oyamel fir tree trunks provide thermal advantages for overwintering monarch butterflies in Mexico. *Insect Biodiversity and Conservation* 2: 163-175. DOI: 10.1111/j.1752-4598.2009.00052.x
- Brower, L.P., Williams, E., Fink, L., Zubieta, R. and I. Ramirez. 2008. Monarch butterfly clusters provide microclimatic advantages during the overwintering season in Mexico. *Journal of the Lepidopterists' Society* 62 (4): 177-188.
- Fink, L.S. and R.I. Vane-Wright. 2008. Lincoln Brower's European Tour. *Antenna* 31: 203-207.
- Slayback, D.A., L.P. Brower, L.S. Fink and I.R. Ramirez. 2007. Establishing the presence and absence of overwintering colonies of the monarch butterfly in Mexico by the use of small aircraft. *American Entomologist* 53 (1): 28-40. DOI: <http://dx.doi.org/10.1093/ae/53.1.28>
- Brower, L.P., L.S. Fink and P. Walford. 2006. Fueling the fall migration of the monarch butterfly. *Integrative and Comparative Biology* 46: 1123-1142. DOI: 10.1093/icb/icl029
- Kellogg, S.K., L.S. Fink and L.P. Brower LP. 2003. Parasitism of native luna moths, *Actias luna* (Lepidoptera: Saturniidae) by the introduced *Compsilura concinnata* (Diptera: Tachinidae) in central Virginia, and their hyperparasitism by trigonalid wasps (Hymenoptera: Trigonalidae). *Environmental Entomology* 32: 1019-1027 . DOI: <http://dx.doi.org/10.1603/0046-225X-32.5.1019>
- Fink, L.S. 1997. Using video production in teaching natural history. *The American Biology Teacher* 59(3): 142-146.
- Fink, L.S. 1995. Foodplant effects on colour morphs of *Eumorpha fasciata* caterpillars (Lepidoptera: Sphingidae). *Biological Journal of the Linnean Society* 56(3): 423-437. DOI: 10.1111/j.1095-8312.1995.tb01103.x
- Brower, L.P., Fink, L.S., Brower, A.V.Z., plus 11 additional authors. 1995. On the dangers of interpopulational transfers of monarch butterflies. *BioScience* 45(8): 540-544.
- Brower, L.P., Ivie, M.A., Fink, L.S., Watts, J., & R.A. Moranz. 1993. Life history of *Anetia briarea* and its bearing on the evolutionary relationships of the Danainae. *Tropical Lepidoptera* 3(2): 64-73.
- Brower, L.P., Nelson, C.J., Seiber, J.A., Fink, L.S., and Bond, C. 1988. Exaptation as an alternative to coevolution in the cardenolide-based chemical defense of monarch butterflies (*Danaus plexippus*) against avian predators. In: Chemical Mediation of Coevolution (Ed. K.C. Spencer), pp. 446-475. Pergamon Press.
- Fink, L.S. 1987. Green lynx spider egg sacs: sources of mortality and the function of female guarding. *J. Arachnology* 15: 231-239.
- Fink, L.S. 1986. Costs and benefits of maternal behaviour in the green lynx spider (Oxyopidae, *Peucetia viridans*). *Animal Behaviour* 34: 1051-1059. DOI:10.1016/S0003-3472(86)80164-6
- Brower, L.P. and Fink, L.S. 1985. A natural toxic defense system: cardenolides in butterflies versus birds. In: Experimental Assessments and Clinical Applications of Conditioned Food Aversions (Ed. by N.S. Braveman and P. Bronstein), pp. 171-188. New York, New York Academy of Sciences.

- Fink, L.S. 1984. Venom spitting by the green lynx spider, *Peucetia viridans*. *J. Arachnology* 12: 372-73.
- Fink, L.S., Brower, L.P., Waide, R.B. and Spitzer, P.R. 1983. Overwintering monarch butterflies as food for insectivorous birds in Mexico. *Biotropica* 15: 151-153.
- Fink, L.S. and Brower, L.P. 1981. Birds can overcome the cardenolide defense of monarch butterflies in Mexico. *Nature* 291: 67-70. DOI:10.1038/291067a0

PAPERS PRESENTED (SINCE 2000)

- Life among the monarchs: A biological interview with Linda Fink, by Mark Madison, the historian for the US Fish & Wildlife Service National Conservation Training Center in Shepherdstown WV, about Lincoln Brower's early research. Part of a series on "Conservationists in Action" (<http://training.fws.gov/resources/knowledge-resources/video-gallery/conservation-action.html>). Filmed on 21 May 2015. Available at: <http://training.fws.gov/resources/knowledge-resources/video-gallery/conservation-action.html>
- Fink, L.S., L.P. Brower, M.I. Ramirez. 2008. Variation in lipid reserves as an indicator of the condition of migrating and overwintering monarch butterflies. Society for Conservation Biology Meeting, Chattanooga TN.
- Ramirez, M.I., L.P. Brower, L.S. Fink, D. Slayback, R. Zubieta. 2008. The effect of changes in legal protection status on forest cover within the Monarch Butterfly Biosphere Reserve in Mexico. Society for Conservation Biology Meeting, Chattanooga TN.
- Slayback, D.A., L.S. Fink, L.P. Brower, M.I. Ramirez. 2008. Integrating geography and microclimatology to evaluate the physiological suitability of sites selected by overwintering monarch butterflies in Mexico. Society for Conservation Biology Meeting, Chattanooga TN.
- Fink, L.S. 2007. The butterfly man: a Lincoln portrait. Invited speaker in a symposium in honor of Lincoln Pierson Brower. Fifth International Conference on the Biology of Butterflies, Frascati, Italy.
- Fink, L.S., L.P. Brower and T. Himelright Helton. 2006. The limited freeze resistance of overwintering monarch butterflies. Annual meeting of the Lepidopterists' Society, 14-18 June, Gainesville FL.
- Fink, L.S., T. Himelright Helton and L.P. Brower. 2006. The limited freeze resistance of monarch butterflies, *Danaus plexippus*, from Mexican overwintering sites. Entomological Society of America Eastern Branch, annual meeting. 14 March, Charlottesville VA.
- Brower, L.P., L.S. Fink, I. Ramirez, S. Weiss, D. Slayback and D. Perault. 2006. The physiological ecology of overwintering monarch butterflies. Invited paper in the symposium, Ecophysiology and Conservation: the Contributions of Energetics. Society for Integrative and Comparative Biology, annual meeting. 4-8 January, Orlando FL.
- Brower, L.P., L.S. Fink, D. Slayback and D. Perault. 2005. Deterioration of the prime overwintering habitat in the monarch butterfly biosphere reserve in Mexico. Invited paper in the symposium, Biology and Conservation of the Monarch Butterfly. Entomological Society of America Pacific Branch, annual meeting, 2 March, Pacific Grove CA.
- Slayback, D.A., M.I. Ramirez, L.P. Brower, D. Perault, L.S. Fink. 2005. A remote-sensing overview of forest cover change in the monarch butterfly overwintering region in Mexico. Invited paper in the symposium, Biology and Conservation of the Monarch Butterfly.

- Entomological Society of America Pacific Branch, annual meeting. 2 March, Pacific Grove CA.
- Tannahill, C. and L. Fink. 2004. The effects of Japanese stilt grass, *Microstegium vimineum*, on earthworm abundance and diversity in central Virginia. Annual meeting of the Association of Southeastern Biologists, 14-17 April, Memphis TN.
- Chilton, R., Tannahill, C., Stassi, A., and L. Fink. 2003. The effects of logging on the occurrence of an invasive exotic grass, *Microstegium vimineum*. Annual meeting of the Association of Southeastern Biologists, 11 April, Arlington VA.
- Kellogg, S., L. Fink, L. Brower. 2002. Parasitism of luna moths by the non-native tachinid fly, *Compsilura concinnata*, in central Virginia. 53rd Annual Meeting of the Lepidopterists' Society, 13-16 June, Charleston, S.C.
- Basten, C.S., L. Fink, L. Brower. 2002. Changes in appetite of female migratory monarch butterflies (*Danaus plexippus*). 53rd Annual Meeting of the Lepidopterists' Society
- Perault, D. and L. Fink. 2000. GIS and GPS technology in forest research and management. Managing to create the ancient forest conference, Sweet Briar VA, 18-20 May.

HONORS and AWARDS

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| 2016 | Excellence in Teaching Award, Student Government Association |
| 2009 | Named Dorys McConnell Duberg Professor of Ecology |
| 2005-2006 | Sweet Briar Faculty Fellowship |

MEMBERSHIPS: Association for Environmental Studies and Sciences, Ecological Society of America, Phi Beta Kappa, Society for Conservation Biology, Society for Sigma Xi, Virginia Academy of Science

CONSULTATION, RESEARCH AND COLLABORATIONS RELATED TO SWEET BRIAR'S NATURAL AREAS AND CAMPUS LAND MANAGEMENT

- Managing *Hydrilla* in Sweet Briar lakes using sterile grass carp, 2015-16
- Experimental biofuels / pollinator habitat, conversion of 300 acres of hayfields, through a USDA NRCS grant to FDC Enterprises and Pheasants Forever, campus liaison, 2014-2015
- Population sizes, demographics and movement patterns of semi-feral and outdoor domestic cats on Sweet Briar's campus, with Rob Alexander and student Emily Brooks, 2014-2015
- Surveys of permanent forest plots, conducted by SBC students: Summers 1999, 2000 (with Dan Druckenbrod), 2008 (with Janet Steven), 2014
- Butterfly research garden, censuses and maintenance, 1999-2015
- Wetlands mitigation banking discussions, 2010-2012
- Campus sanctuary expansions. I co-authored proposals to the Board of Directors that resulted in the establishment of the Constitution Oaks Sanctuary (1993, expanded in 2001), and the COSIP transect Sanctuary (2001)
- Management of non-sanctuary forests. Intensive work in 2000-2001, related to a Board and campus discussion of whether large areas of Sweet Briar's hardwood forests should be timbered. I collaborated on producing GIS maps, worked with a consulting forester, gave presentations to Buildings and Grounds Committee of the Board and to campus

stakeholders, and presented a proposal to the Board *Protecting ecological study areas of Paul Mountain and Fern Woods*.

Co-organized a conference at Sweet Briar College, *Managing to Create the Ancient Forest*, 18-20 May 2000 (with Ted Harris and Dave Perault)

Committee service related to natural areas and land use

Campus Environment Committee 2013-2015

Faculty representative to the Buildings and Grounds Committee of the Board of Directors, 2000-2002, 2006-08, 2010-2012, 2015-16

Land Use Committee (ad hoc) of the Board of Directors 2008-2014

Natural Areas Committee 2003-05, 2009-2013

Campus trails ad hoc committee 2000-2001

Land Use Committee of the Vice President 1991-2001

Landscape committee 1991-1993

CITIZEN SCIENCE AND SCIENCE OUTREACH as Sweet Briar's field biologist

Director of the Sweet Briar Naturalist-in-Residence program, Department of Biology

Supported by a private donor

1999-2000: I implemented a summer Naturalist-in-Residence Program as a competitive grant program for external scientists to conduct research with undergraduates on our campus.

2008-2014: I redesigned a year-round Naturalist-in-Residence program with three primary functions: assist Biology faculty with establishing and maintaining field sites for education and research; develop, organize and run natural history or natural resource workshops that use Sweet Briar's campus; and assist in organizing and conducting faculty-directed projects. A half-time position was funded in 2008. Funding was not renewed, but the naturalist stayed on part-time with limited external funds 2009-2014.

Projects facilitated by the naturalist-in-residence position

Breeding bird survey of Sweet Briar College, Wendy McIntyre (UVA) and one student, summer 1999

Ecology of permanent forest plots, Dan Druckenbrod (UVA) and two students, summer 2000
Spotted salamander breeding censuses and invasive crayfish removal, carried out with SBC students and naturalist Mike Hayslett 2007-2016

Statewide Master Naturalist Advanced Training Rallies at Sweet Briar College, I hosted with Mike Hayslett, 2-4 May 2008, 9-10 May 2009, 3-5 June 2011

Central Virginia Master Naturalist work parties at Sweet Briar: salamander drift fence installation and maintenance; butterfly garden maintenance; deer enclosure construction

Deer management: deer exclosures, deer management / controlled hunt planning with the VA Department of Game and Inland Fisheries, deer population surveys

Isolated Wetlands Conference and Vernal Pond Building Workshop at Sweet Briar, 28-30 September 2007

Virginia Master Naturalist Program (<http://www.virginiamasternaturalist.org/>)

Rivanna (Charlottesville) Master Naturalists

Basic Training instructor, Insects, 2013, 2014, 2015, 2016

Advanced Training instructor, Cicadas, 2013

Central Virginia (Lynchburg) Master Naturalists

Advanced Training instructor, Monarch butterflies, 2010
Statewide Master Naturalist Advanced Training Rallies at Sweet Briar College
Instructor, Inconspicuous biodiversity and Plant-insect interactions, 2008, 2009, 2011

Other nature presentations at Sweet Briar and in surrounding communities

Campus nature walks, butterfly garden presentations, natural history talks for the Sweet Briar community: several annually
Field and classroom lessons on forest ecology, monarch butterfly conservation, beaver ecology, and other topics for school groups from Amherst High School, Western Albemarle High School, Central Virginia Governors School, Nelson County High School, North Branch School, Thaxton Elementary School: typically 1-2 per year
Nature Camp, Rockbridge County, VA, evening programs on insects, 2002, 2003, 2015, 2016
Rockfish Valley Foundation Natural History Center, moth presentation, 2013
Amherst Public Library, Insect Day, full day, 2009
The Nature Foundation at Wintergreen, Discover Virginia Natural History Weekend, monarch butterflies and milkweed ecology, 2007
Kids in College, Sweet Briar day camp, two week-long sessions on insects, 2004