

10/2022

**Mark D. Rausher**  
**Department of Biology**  
**Box 90338**  
**Duke University**  
**Durham, NC 27708-0338**

### **Contact Information**

e-mail: [mrausher@duke.edu](mailto:mrausher@duke.edu)  
Tel: (919) 684-2295  
Website: <http://www.duke.edu/~mrausher/>

### **Personal**

Born: December 30, 1951, Gary, Indiana

### **Education**

B.A., University of Chicago, 1973  
Ph.D., Cornell University, 1978  
Postdoc, University of Texas, Austin 1979

### **Scholarships and Fellowships**

University Scholar Scholarship, University of Chicago, 1969-1973  
N.S.F. Predoctoral Fellowship, 1973-1976  
Cornell Continuing Graduate Fellowship, 1976

### **Honors and Awards**

Phi Beta Kappa, 1972  
Lamont C. Cole Award, 1978-1979 (for outstanding paper by a graduate student, section of Ecology and Systematics, Cornell University)  
Mercer Award, Honorable Mention, 1989, (Given by Ecological Society of America for best paper in English in previous year.)  
Presidential Nominee, American Society of Naturalists, 2006, 2014  
Sewall Wright Award, American Society of Naturalists, 2016  
Fellow of American Academy of Arts and Sciences (elected 2019)

## Professional Positions

Teacher, Earth Sciences, Auburn State Prison, 1974  
Teaching Assistant, General Ecology, Cornell University, 1977  
Assistant Professor, Department of Zoology, Duke University, 1978-1983  
Associate Professor, Department of Zoology, Duke University, 1983-1991  
Professor, Department of Biology (formerly Zoology), Duke University, 1991-present  
John C. Kilgo Distinguished Professor of Biology, Duke University, 2013-present  
Chair, Department of Zoology, 1995-2000

## Activities

Organization for Tropical Studies Fundamentals of Tropical Ecology Course (Costa Rica),  
1974  
Participant: Gordon Research Conference on Chemical Aspects of Plant- Herbivore  
Interactions. (1980, 1986, 1989, 1992, 1995, 1998)

## Professional Responsibilities

Editor for *Ecology* and *Ecological Monographs* (1985-1989)  
Associate Editor for *Evolution* (1985-1988)  
MacArthur Award Committee, Ecological Society of America (1988)  
Member of Board of Scientific Advisors, Highlands Biological Station (1983-1995)  
Member of Executive Committee, American Society of Naturalists (1990-1995)  
Editor in Chief, *The American Naturalist*, (1990-1995)  
Member, NSF Advisory Panel for Postdoctoral Fellowships in Environmental Biology  
(1990, 1993)  
Participant, 1992 NSF Workshop on Center for Ecological Synthesis, Albuquerque, NM  
Member, NSF Advisory Panel on selecting a site for a National Center for Ecological  
Analysis and Synthesis (1994)  
Chair, 1995 Gordon Conference on Plant-Animal Interactions  
Participant, 1998 NSF Workshop on Future Directions in Evolutionary Biology, Wash.,  
D.C.  
Editor for *New Phytologist* (2002-present; Evolution Section Head 2002-2016)  
Editorial Board, *Biology Letters* (2005-2010 )  
Editor-in-Chief, *Evolution* (2006-2010)  
President Elect, President, Past President, Society for the Study of Evolution. 2018-2020.

## Invited Seminars and Symposia

- 1978 Department of Biology, University of Chicago  
Department of Biology, University of California at Irvine.
- 1979 Department of Entomology, North Carolina State University  
Symposium on Search Image Formation, Eastern Branch meeting of Animal Behavior Society, Woods Hole, Massachusetts
- 1980 Department of Entomology, University of Maryland  
Symposium on Impact of Host Plant Quality on Herbivorous Insects, Entomological Society of America Meetings, Atlanta
- 1981 Symposium on Host Plant Location by Phytophagous Insects, Eastern Branch Meetings, Entomological Society of America, Syracuse
- 1982 Department of Zoology, North Carolina State University  
Department of Entomology, North Carolina State University  
Department of Biology, University of Southwestern Louisiana
- 1984 Department of Entomology, University of Massachusetts  
Ecology Section, Biological Sciences Group, Univ. of Connecticut  
Department of Biology, Yale University Columbia  
Symposium on Searching Behavior in Insects, Entomological Society of America Meetings, San Antonio
- 1985 Department of Zoology, University of California, Davis  
Department of Entomology, University of California, Berkeley  
Invitational speaker, Pacific Branch Meetings of Entomological Society of America, Honolulu  
Symposium on Insect Ecology, Florida Entomological Society Meetings, Jamaica
- 1986 Gordon Conference on the Chemistry of Plant-Herbivore Interactions, Oxnard, CA  
Department of Ecology and Evolution, State University of New York, Stony Brook  
Department of Entomology, Virginia Polytechnic Institute  
Section of Ecology and Systematics, Cornell University  
Symposium on Ecology and Agriculture, Kellogg Biological Station  
Symposium on The Evolution and Ecology of Immigrant Species,  
Entomological Society of America Meetings, Reno, Nevada
- 1987 Department of Biology, University of Chicago  
Department of Biology, University of New Mexico Program in Ecology and Evolutionary Biology, Michigan State University
- 1988 Department of Biology, Rutgers University  
Department of Biology, Clemson University

- Department of Biological Sciences, University of Michigan  
 Department of Biology, University of Utah  
 Department of Biology, University of North Carolina  
 Section of Ecology and Systematics, Cornell University  
 Department of Biology, University of South Carolina
- 1989 Department of Botany, North Carolina State University  
 Gordon Conference on Plant-Herbivore Interactions, Oxnard, CA (Session Chair)  
 Department of Entomology, University of Hawaii
- 1990 CIBA/GEIGY Biotechnology Center, Research Triangle Park, NC  
 Symposium on Ecology and Evolutionary Biology of the Papilionidae, V International  
 Congress of Ecology, Yokohama, Japan  
 School of Biological Sciences, University of Nebraska
- 1992 Gordon Conference on Plant-Herbivore Interactions, Oxnard, CA (Session Chair)
- 1993 Department of Ethology, Ecology and Evolution, University of Illinois  
 Department of Biology, Wake Forest University
- 1994 Mike Duke Memorial Lecture, Department of Entomology, North Carolina State University  
 Department of Biology, University of Miami  
 Symposium on Chemical Ecology, Max Plank Institute, Munich, Germany
- 1995 Department of Ecology and Evolutionary Biology, University of California, Irvine  
 Department of Ecology and Evolution, University of Chicago  
 Department of Zoology, University of Wurzburg, Germany  
 Department of Ecology and Evolutionary Biology, University of Arizona  
 Symposium on Interactions between Plant Pollinators and Herbivores, Ecological Society  
 of America meetings, SnowBird, Utah
- 1996 Section of Ecology and Systematics, Cornell University  
 Symposium on Plant-Herbivore Interactions, 5th International Congress of Systematic  
 and Evolutionary Biology, Budapest, Hungary  
 Department of Biology, Princeton University  
 National Center for Ecological Analysis and Synthesis Symposium, Santa Barbara, CA  
 (Session Chair)
- 1997 Institute of Ecology, National Autonomous University of Mexico (UNAM)  
 Center for Population Biology, University of California, Davis
- 1998 Symposium on Chemical Ecology, Max Plank Institute for Chemical Ecology, Jena,  
 Germany  
 European Science Foundation Workshop on Adaptation of Plants to Pathogens and  
 Herbivores, Kindrogan Field Center, Perthshire, Scotland.  
 Symposium on Chemical Ecology, Department of Biology, Georgia Tech.  
 University Program in Genetics Minisymposium on Quantitative Genetics, Duke

## University

- 1999 Department of Biological Science, Florida State University.  
Department of Organismic and Evolutionary Biology, Harvard University  
Keynote Speaker, Japanese Society for Population Biology Symposium, Shiga, Japan  
Department of Ecology, Evolution and Marine Science, University of California, Santa  
Barbara
- 2000 Autumn School, Crop Protection Centre, Wageningen, Netherlands.
- 2001 European Science Foundation workshop on Plant Adaptation, Jena, Germany  
Monte Lloyd Memorial Symposium, Dept. of Ecology and Evolution, University  
of Chicago  
Symposium on the Function of Anthocyanins, Botanical Society of America Annual  
Meetings, Albuquerque, NM
- 2002 Symposium on Plant Reproduction, Penn State University.  
Symposium on Plant Adaptation, Univ. of British Columbia  
Speaker, Council for the Advancement of Science Writing, St. Louis, MO  
Keynote Speaker, Entomological Society of Canada Annual Meetings, Winnipeg, CA
- 2003 Symposium on Plant-Enemy Interactions, European Society for Evolutionary Biology,  
9th Congress, Leeds, UK
- 2004 Department of Genetics, University of Georgia  
Evolution Workshop Speaker (4 lectures), Center for Population Biology, U. C. Davis  
Department of Biology, University of Rochester  
Department of Biology, Wake Forest University
- 2005 Department of Biology, UNC Greensboro  
Plenary Speaker, Swedish Ecological Society, Umea, Sweden.  
Department of Botany, University of Toronto  
Section of Integrative Biology, University of Texas, Austin  
Symposium on Plant Evolution, American Genetics Association annual meeting,  
Madison, WI
- 2006 School of Biology, University of St. Andrews (Scotland)  
Symposium on Plant Variation and Domestication, Max Plank Institute for Plant  
Breeding, Cologne, Germany.
- 2007 Department of Biology, Southeastern Louisiana University
- 2008 Department of Biological Sciences, University of Pittsburgh (graduate student speaker)  
Center for Population Biology, Univ. of California, Davis (graduate student speaker)  
Department of Plant Biology, Michigan State University (graduate student speaker)
- 2009 Department of Biology, Indiana University (IGERT speaker)  
Darwin's Legacy Symposium, Origins Institute, McMaster University (Plenary speaker)

Department of Biology, Cal. State Univ. Northridge (Distinguished speaker)  
School of Biological Sciences, University of Nebraska (University Showcase Speaker)  
Department of Ecology and Evolutionary Biology, University of Kansas (Distinguished  
Speaker series)  
Darwin-China 200 Symposium, Peking University, Beijing, China

- 2010 Department of Biology, University of Virginia.  
Meeting: New Frontiers in Plant Systematics and Evolution, Beijing, China.
- 2011 Department of Integrative Biology, University of Texas, Austin.
- 2012 School of Biology and Environmental Sciences, Stirling University, UK  
School of Biology, University of St. Andrews, UK  
Department of Biological Sciences, University of Southern California
- 2013 Department of Biology, University of Hawaii  
Jodrell Laboratory, Kew Botanical Garden  
Keynote Speaker, South East Ecological and Evolutionary Genetics Meeting  
Symposium on Molecular Mechanisms of Functional Evolution, Society for Molecular  
Biology and Evolution Annual Meeting
- 2014 Department of Ecology and Evolutionary Biology, Cornell University  
Department of Botany, University of British Columbia (graduate student speaker)
- 2015 Department of Plant Sciences, University of Oxford  
Department of Life Sciences, National Taiwan Normal University  
Forum of Biotechnology, Medicine and Molecular Evolution, Taipei, Taiwan  
Douglas Distinguished Lectures  
1. Rocky Mountain Biological Station  
2. Crested Butte Mountain Heritage Museum  
Max Planck Institute for Chemical Ecology, Jena, Germany  
Symposium on the molecular basis of adaptation and ecological speciation, European  
Society for Evolutionary Biology, Lausanne, Switzerland  
Institute for Systematic Biology, University of Zurich  
Department of Ecology and Evolutionary Biology, University of Colorado  
Department of Biology, University of Oregon
- 2016 Department of Genetics, University of Wisconsin, Madison  
Keynote Speaker, Plant Evo-Devo Symposium, Beijing, China

Note: From 2017-2021 I did not accept speaking invitations because I could not travel for family reasons.

- 2022 Department of Biological Sciences, Columbia University.

## Research Grants

### External Sources

Sigma Xi Grant-in-Aid of Research, 1976  
National Science Foundation Grant for Improving Doctoral Dissertation in the Field Sciences, 1976-78  
National Science Foundation Grant (in collaboration with Michael C. Singer, University of Texas), 1978-80 (\$77,000)  
National Science Foundation Grant (DEB 80-16414, Duke University), 1981-84 (\$140,000)  
National Science Foundation Grant (BSR-84-06870, Duke University), 1984-87 (\$107,000)  
National Science Foundation Grant (BSR-85-0739, Duke University), 1985-87 (\$147,525)  
National Science Foundation Grant (BSR-88-17899, Duke University), 1989-92 (\$300,021)  
National Science Foundation Grant (DEB 93-18919, Duke University), 1994-97 (\$255,000)  
USDA Competitive Grant (#9401941, Duke University), 1994-1996 (\$74,000)  
National Science Foundation Grant (DEB 96-5227, Duke University), 1997-1999 (\$140,000)  
National Science Foundation Grant (DEB 97-07223, Duke University), 1997-2000 (\$330,000)  
National Science Foundation Grant (MCB 0110596, Duke University), 2001-2004 (\$444,000)  
National Science Foundation Grant (DEB 0448889, Duke University), 2005-2009 (\$667,000)  
National Science Foundation Grant (DEB-0841521, Duke University), 2009-2014, (\$1,000,000)  
National Science Foundation Grant (DEB-1542387, Duke University), 2015-2020, (\$1,000,000)  
National Science Foundation Grant (IOS-1555434, Duke University), 2016-2019, (\$250,000)

### Dissertation Improvement Grants

National Science Foundation Grant (DEB 81-10218, Duke University), 1981-82 (submitted on behalf of D. R. Papaj)  
National Science Foundation Grant (DEB 93-22462, Duke University), 1944-96 (submitted on behalf of Rodney Mauricio)  
National Science Foundation Grant (IBN-9624051, Duke University), 1996-1998. \$8,000 (submitted on behalf of Kerry Bright)  
National Science Foundation Grant (DEB 97-01330, Duke University), 1997-1999. \$6,650 (submitted on behalf of Peter Tiffin)

National Science Foundation Grant (DEB-9800876), 1998-2000. \$5,650 (submitted on behalf of Matthew Rutter)  
National Science Foundation Grant (DEB-0073176), 2000-2002. \$10,000 (submitted on behalf of Michael Wise)  
National Science Foundation Grant (DEB-0107172), 2001-2003. \$8,800 (submitted on behalf of Joel Kniskern)  
National Science Foundation Grant (DEB-0105056), 2001-2003. \$9,000 (submitted on behalf of Becky Zufall)  
National Science Foundation Grant (DEB-0206009), 2002-2004, \$8,600 (submitted on behalf of Matthew Hahn)  
National Science Foundation Grant (DEB-0308923), 2003-2005, \$11,525 (submitted on behalf of Robin Smith)  
National Science Foundation Grant (DEB-0407838), 2004-2006, \$11,511 (submitted on behalf of Mario Vallejo-Marin)  
National Science Foundation Grant (DEB-0411807), 2004-2006, \$12,000 (submitted on behalf of David Des Marais)  
National Science Foundation Grant (DEB- 0909927), 2009-2011, \$13,400 (submitted on behalf of Robin Hopkins)  
National Science Foundation Grant (DEB- 0909927), 2009-2011, \$11,400 (submitted on behalf of Tom Chappell)  
National Science Foundation Grant (DEB-1010866), 2010-2012, \$15,000 (submitted on behalf of Carrie Wessinger)  
National Science Foundation Grant (DEB-1501094), 2014-2016, \$20,500 (submitted on behalf of Joanna Rifkin)

Internal Sources (<\$5000)

Biomedical Research Support Grant, 1978-1979  
University Research Council Grant, 1980-1981  
University Research Council Grant, 1984-1985  
University Research Council Grant, 1986-1987  
University Research Council Grant, 1987-1988  
University Research Council Grant, 1988-1989  
University Research Council Grant, 1992-1993  
University Research Council Grant, 1993-1994  
University Research Council Grant, 1999-2000  
University Research Council Grant, 2002-2003  
University Research Council Grant, 2006-2007  
University Research Council Grant, 2015-2016



## Publications

### Refereed Publications

1. Rausher, M.D. 1978. Search image for leaf shape in a butterfly. *Science* 200:1071-1073.
2. Rausher, M.D. and N. L. Fowler. 1979. Intersexual aggression and nectar defense in Chauliognathus distinguendus, Coleoptera: Cantharidae. *Biotropica* 11:96-100.
3. Rausher, M.D. 1979. Egg recognition: its advantage to a butterfly. *Animal Behaviour* 27:1034-1040.
4. Rausher, M.D. 1980. Larval habitat suitability and oviposition preference in three related butterflies. *Ecology* 60:503-511.
5. Rausher, M.D. 1980. Host abundance, juvenile survival, and oviposition preference in Battus philenor. *Evolution* 34:342-355.
6. Rausher, M.D. and P. Feeny. 1980. Herbivory, plant density and plant reproductive success: the effect of Battus philenor on Aristolochia reticulata. *Ecology* 61:905-917.
7. Rausher, M.D. 1980. Host plant selection by Battus philenor butterflies: the roles of predation, nutrition, and plant chemistry. *Ecological Monographs* 51:1-20.
8. Rausher, M.D. 1981. The effect of native vegetation on the susceptibility of Aristolochia reticulata (Aristolochiaceae) to herbivore attack. *Ecology* 62:1187-1195.
9. Rausher, M.D., D. A. MacKay, and M. C. Singer. 1982. Pre-and post-alighting host discrimination by Euphydryas editha butterflies: the behavioral mechanisms causing clumped distributions of egg clusters. *Animal Behaviour* 29:1220-1228.
10. Rausher, M.D. 1982. Population differentiation in Euphydryas editha butterflies: larval adaptation to different hosts. *Evolution* 36: 581-590.
11. Rausher, M.D. and M. R. Berenbaum. 1983. A natural occurrence of inter-tribal copulation in the Papilionidae. *J. Lepid. Soc.* 37:81-82.
12. Rausher, M.D. and D. R. Papaj. 1983. Host plant selection by Battus philenor butterflies: evidence for individual differences in foraging behavior. *Animal Behaviour* 31:341-347.
13. Rausher, M.D. and D. R. Papaj. 1983. Demographic consequences of host discrimination by Battus philenor butterflies. *Ecology* 64:1402-1410.
14. Rausher, M.D. 1983. Alteration of oviposition behavior by Battus philenor butterflies in response to variation in host plant density. *Ecology* 64:1028-1034.
15. Rausher, M.D. 1983. Conditioning and genetic variation as causes of individual variation in the oviposition behavior of the tortoise beetle Deloyala guttata. *Animal Behavior* 31:743-747.
16. Rausher, M.D. 1984. The evolution of habitat selection in subdivided populations. *Evolution* 38:596-608.

17. Rausher, M.D. 1984. Tradeoffs in performance on different hosts: evidence from within- and between-site variation in the beetle *Deloyala guttata*. *Evolution* 38:582-595.
18. Alexander, H.M., J. Antonovics, and M.D. Rausher. 1985. Relationship of phenotypic and genetic variation in *Plantago lanceolata* to disease caused by *Fusarium moniliforme* var. *subglutinans*. *Oecologia* 65:89-93.
19. Fowler N.R. and M.D. Rausher. 1985. The effects of herbivory, competitors, and their interaction on *Aristolochia reticulata*. *Ecology* 66:1580-1587.
20. Rausher, M.D. 1985. Variability for host preference in insect populations: mechanistic and evolutionary models. *Journal of Insect Physiology* 31:873-889.
21. Rausher, M.D. 1986. Competition for oviposition sites in *Battus philenor* butterflies. *Florida Entomologist* 69:63-78.
22. Rausher, M.D. and R. Englander. 1987. The evolution of habitat preference. II. Evolutionary genetic stability under soft selection. *Theoretical Population Biology* 31: 116-139.
23. Papaj, D.R. and M.D. Rausher. 1987. Components of conspecific host-discrimination behavior in the butterfly, *Battus philenor*. *Ecology* 68:245-253.
24. Rausher, M.D. and F.J. Odendaal. 1987. Switching and the pattern of host use by *Battus philenor* butterflies *Ecology* 68:869-877.
25. Simms, E.L. and M.D. Rausher. 1987. Costs and benefits of the evolution of plant defense against herbivory. *Amer. Nat.* 130:570-581.
26. Odendaal, F.J., M.D. Rausher, B. Benrey, and J. Nunez-Farfan. 1987. Predation by *Anolis* lizards on *Battus philenor* raises questions about butterfly mimicry systems. *Journal of the Lepidopterists' Society* 41:141-144.
27. Papaj, D.R. and M.D. Rausher. 1987. Genetic differences and phenotypic plasticity as causes of variation in oviposition preference in *Battus philenor*. *Oecologia* 74:24-30.
28. Rausher, M.D. 1988. Is Coevolution dead? *Ecology* 64:898-901.
29. Pilson, D., and M. D. Rausher. 1988. Clutch size adjustment by a swallowtail butterfly. *Nature* 333:361-363
30. Rausher, M.D. and E.L. Simms. 1989. The evolution of resistance to herbivory in *Ipomoea purpurea*. I. Attempts to detect selection. *Evolution*. 43:563-572.
31. Simms, E.L. and M.D. Rausher. 1989. The evolution of resistance to herbivory in *Ipomoea purpurea*. II. Natural selection by insects and costs of resistance. *Evolution* 43:573-585.
32. Pilson, D., and M.D. Rausher. 1989. In response to Tartar. *Oikos* 55:136-137.
33. Edelman-Keshet, L., and M.D. Rausher. 1989. The effects of inducible defenses on herbivore populations. I. Mobile, non-selective herbivores in continuous time. *Amer. Nat.* 133:787-810.
34. Odendaal, F.J. and M.D. Rausher. 1990. Eggload influences search intensity, host selectivity and clutch size in *Battus philenor* butterflies. *J. Insect Behavior* 3:183-193.
35. Turchin, P., F.J. Odendaal, and M.D. Rausher. 1991. Quantifying insect movement in the field. *Environ. Entomol.* 20:955-963.

36. Rausher, M.D. 1992. The measurement of selection on quantitative traits: biases due to environmental covariances between traits and fitness. *Evolution* 46:616-626.
37. Rausher, M.D., K. Iwao, E.L. Simms, N. Ohsaki, and D. Hall. 1993. Induction and the cost of resistance in *Ipomoea purpurea*. *Ecology* 74:20-29.
38. Rausher, M.D. and J.D. Fry. 1993. Effects of a locus affecting floral pigmentation in *Ipomoea purpurea* on female fitness components. *Genetics* 134:1237-1247.
39. Simms, E.L. and M.D. Rausher. 1993. Patterns of selection on parasite resistance in *Ipomoea purpurea*. *Evolution* 47:970-976.
40. Rausher, M.D., D. Augustine, and A. Vanderkooi. 1993. Absence of pollen discounting in genotypes of *Ipomoea purpurea* exhibiting increased selfing. *Evolution* 47:1688-1695.
41. Hougen-Eitzman, D. and M.D. Rausher. 1994. Interactions between herbivorous insects and plant-insect coevolution. *American Naturalist* 143:677-697.
42. Pilson, D. and M. D. Rausher. 1995. Clumped distribution patterns in goldenrod aphids: genetic and ecological mechanisms. *Ecol. Entom.* 20:75-83.
43. Fineblum, W.L. and M.D. Rausher. 1995. Tradeoff between resistance and tolerance to herbivore damage in a morning glory. *Nature* 377:517-520.
44. Brandon, R.N. and M.D. Rausher. 1996. Testing adaptationism: a comment on Orzack and Sober. *Amer. Nat.* 148:189-201.
45. Rausher, M.D. 1996. Genetic analysis of coevolution between plants and their natural enemies. *Trends in Genetics* 12:212-217.
46. Fry, J.D., and M.D. Rausher. 1997. Selection on a floral color polymorphism in the tall morning glory (*Ipomoea purpurea* L.): transmission success of the alleles through pollen. *Evolution* 51:66-78.
47. Mojonier, L., and M.D. Rausher. 1997. Selection on a floral color polymorphism in the common morning glory (*Ipomoea purpurea*): The effects of overdominance in seed size. *Evolution* 51:608-614.
48. Fineblum, W.L., and M.D. Rausher. 1997. Do genes influencing floral pigmentation also influence resistance to herbivores and pathogens? The *W* locus in *Ipomoea purpurea*. *Ecology* (70:1646-1654).
49. Mauricio, R., M.D. Rausher, and D.S. Burdick. 1997. Variation in the defense strategies of plants: are resistance and tolerance mutually exclusive? *Ecology* 78:1301-1311.
50. Iwao, K., and M.D. Rausher. 1997. Evolution of plant resistance to multiple herbivores: quantifying diffuse coevolution. *American Naturalist* 149:316-335.
51. Mauricio, R., and M.D. Rausher. 1997. Experimental manipulation of putative selective agents provides evidence for the role of natural enemies in the evolution of plant defense. *Evolution* 51:1435-1444.
52. Tiffin, P.R., R.E. Miller, and M.D. Rausher. 1998. Control of expression on patterns of anthocyanin structural genes by two loci in the common morning glory. *Genes and Genetic Systems* 73:105-110.

53. Chang, S.-M. and M.D. Rausher. 1998. Frequency-dependent pollen discounting contributes to maintenance of a mixed mating system in the common morning glory *Ipomoea purpurea*. *American Naturalist* 152:671-683.
54. Chang, S.-M. and M.D. Rausher. 1999. The role of inbreeding depression in maintaining the mixed mating system of the common morning glory, *Ipomoea purpurea*. *Evolution* 53: 1366-1376.
55. Rausher, M.D. and S.-M. Chang. 1999. Stabilization of mixed-mating systems by differences in the magnitude of inbreeding depression for male and female fitness components. *American Naturalist* 155: 242-248
56. Miller, R.E., M.D. Rausher and P.S. Manos. 1999. Phylogenetic systematics of *Ipomoea* (*Convolvulaceae*) based on ITS and waxy sequences. *Systematic Botany* 24: 209-227
57. Rausher, M.D., R.E. Miller and P. Tiffin. 1999. Patterns of evolutionary rate variation among genes of the anthocyanin biosynthetic pathway. *Molecular Biology and Evolution* 16:266-274.
58. Tiffin, P. and M.D. Rausher. 1999. Genetic constraints and selection acting on tolerance to herbivory in the common morning glory, *Ipomoea purpurea*. *American Naturalist* 154: 700-716.
59. Underwood, N., and M.D. Rausher. 2000. The effects of host-plant quality on herbivore population dynamics in a model system. *Ecology* 81: 1565-1576.
60. Subramaniam, B., and M.D. Rausher. 2000. Balancing selection on a floral polymorphism. *Evolution* 54: 691-695.
61. Kniskern, J., and M. D. Rausher. 2001. Two modes of host-enemy coevolution. *Population Ecology* 43: 3-14.
62. Paulsen, S., and M. D. Rausher. 2001. Floral color polymorphism in *Ipomoea purpurea*: biased inheritance of the dark allele is not a general explanation for its maintenance. *Journal of Heredity* 96: 491-495.
63. Rausher, M. D. 2001. Coevolution and plant resistance to natural enemies. *Nature* 411: 857-864.
64. Stinchcombe, J. R., and M. D. Rausher. 2001. Diffuse selection on resistance to deer herbivory in the ivyleaf morning glory, *Ipomoea hederacea*. *The American Naturalist* 158: 376-388.
65. Underwood, N., and M. D. Rausher. 2002. Comparing the consequences of induced and constitutive plant resistance for herbivore population dynamics. *American Naturalist* 160: 20-30.
66. Underwood, N., M. D. Rausher, and W. Cook. 2002. The role of cystein proteinase inhibitors in induced and constitutive resistance to Mexican bean beetles in soybeans. *Oecologia* 131: 211-219.
67. Stinchcombe, J. R., M. T. Rutter, D. S. Burdick, P. Tiffin, M. D. Rausher, and R. Mauricio. 2002. Testing for environmentally induced bias in phenotypic estimates of natural selection: theory and practice. *American Naturalist* 160: 511-523.

68. Stinchcombe, J. R., and M. D. Rausher. 2002. Evolution of tolerance to deer herbivory: modification caused by the abundance of insect herbivores. *Proceedings of the Royal Society of London (Biological Sciences)* 269: 1241-1246.
69. Hahn, M. W., M. D. Rausher, and C. W. Cunningham. 2002. Distinguishing between selection and population expansion in an experimental lineage of Bacteriophage T7. *Genetics* 161: 11-20.
70. Zufall, R. A., and M. D. Rausher. 2003. The genetic basis of a flower-color polymorphism in the common morning glory, *Ipomoea purpurea*. *Journal of Heredity* 94: 442-448.
71. Lu, Yingqing, and M. D. Rausher. 2003. Evolutionary rate variation in anthocyanin pathway genes. *Molecular Biology and Evolution* 20: 1844-1853.
72. Coberly, L. C., and M. D. Rausher. 2003. Analysis of a chalcone synthase mutant in *Ipomoea purpurea* reveals a novel function for flavonoids: amelioration of heat stress. *Molecular Ecology* 12: 1113-1124.
73. Fehr, C., and M. D. Rausher. 2004. Effects of variation at the flower-color locus on mating system parameters in *Ipomoea purpurea*. *Molecular Ecology* 13: 1839-1847.
74. Zufall, R.A. and M.D. Rausher. 2004. Genetic changes associated with floral adaptation restrict future evolutionary potential. *Nature* 428: 847-850.
75. Mendelson, T. C., B. D. Inouye, and M.D. Rausher. 2004. Patterns in the evolution of reproductive isolation and the genetics of speciation. *Evolution* 58: 1424-1433.
76. Rutter, M. T., and M.D. Rausher. 2004. Natural selection on extrafloral nectar production in *Chamaecrista fasciculata*: the costs and benefits of a mutualism trait. *Evolution* 58: 2657-2668.
77. Fornoni, J., J. Núñez-Farfán, P. L. Valverde, and M. D. Rausher. 2004. Evolution of mixed strategies of plant defense allocation against natural enemies. *Evolution* 58: 1685-1695.
78. Chang, S.-M., Y. Lu, and M. D. Rausher. 2005. Neutral Evolution of the Non-binding Region of the Anthocyanin Regulatory Gene *Ipmyb1* in *Ipomoea*. *Genetics* 170: 1967-1978.
79. Kniskern, J. M., and M. D. Rausher. 2006. Environmental variation mediates the deleterious effects of *Coleosporium ipomoeae* on its host, *Ipomoea purpurea*. *Ecology* 87: 675-685.
80. Kniskern, J. M., and M. D. Rausher. 2006. Major-gene resistance to the rust pathogen *Coleosporium ipomoeae* is common in natural populations of *Ipomoea purpurea*. *New Phytologist* 171: 137-144.
81. Vallejo-Marin, M., and M. D. Rausher. 2007. The role of male flowers in andromonoecious species: energetic costs and siring success in *Solanum carolinense*. *Evolution* 61: 404-412.
82. Kniskern, J. M., and M. D. Rausher. 2007. Natural selection on a polymorphic disease-resistance locus in *Ipomoea purpurea*. *Evolution* 61: 377-387.
83. Smith, R. A., and M. D. Rausher. 2007. Close clustering of anthers and stigma in *Ipomoea hederacea* enhances prezygotic isolation from *I. purpurea*. *New Phytologist* 173: 641-647.

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85. Vallejo-Marin, M., and M. D. Rausher. 2007. Selection through female fitness helps to explain the maintenance of male flowers. *American Naturalist* 169: 563-568
86. Streisfeld, M. A., and M. D. Rausher. 2007. Relaxed constraint and evolutionary rate variation between the basic helix-loop-helix (bHLH) floral anthocyanin regulators in *Ipomoea*. *Molecular Biology and Evolution* 24: 2816-2826.
87. Smith, R. A., and M. D. Rausher. 2008. Experimental evidence that selection favors character displacement in the ivyleaf morning glory. *American Naturalist* 171: 1-9.
88. Rausher, M. D. 2008. Evolutionary transitions in floral color. *Int. J. Plant Sci.* 169: 7-21.
88. Lau, J. A., R. E. Miller, and M. D. Rausher. 2008. Selection through male function favors smaller floral display size in the common morning glory, *Ipomoea purpurea* (Convolvulaceae). *American Naturalist* 172: 63-74.
89. Rausher, M. D., Y. Lu, and K. Meyer. 2008. Variation in Constraint vs. Positive Selection as Explanation for Evolutionary Rate Variation among Anthocyanin Genes. *J. Mol. Evol.* 67: 137-144.
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91. Des Marais, D. L., and M. D. Rausher. 2008. Gene duplication of an anthocyanin pathway gene provides evidence for release from adaptive constraint. *Nature* 454: 762-765.
92. Bright, K. L., and M. D. Rausher 2008. Natural selection on a leaf-shape polymorphism in the ivyleaf morning glory (*Ipomoea hederacea*). *Evolution* 62: 1978-1990.
93. Smith, R. A., and M. D. Rausher. 2008. Selection for character displacement is constrained by the genetic architecture of floral traits in the ivyleaf morning glory. *Evolution* 62: 2829-2841.
94. Streisfeld, M. A., and M. D. Rausher. 2009. Altered *Trans*-regulatory control of gene expression in multiple anthocyanin genes contributes to adaptive flower color evolution in *Mimulus aurantiacus*. *Molecular Biology and Evolution* 26: 433-444.
95. Johnson, M. T. J., S. D. Smith, and M. D. Rausher. 2009. Plant sex and the evolution of plant defenses against herbivores. *PNAS* 106: 1079-1084.
96. Streisfeld, M. A., and M. D. Rausher. 2009. Genetic changes contributing to the repeated evolution of red floral pigmentation in *Ipomoea*. *New Phytologist* 183: 751-763.
97. Des Marais, D. L., and M. D. Rausher. 2010. Parallel evolution in the origin of hummingbird pollinated flowers in *Ipomoea*. *Evolution* 64: 2044-2054
98. Johnson, M. T. J., S. D. Smith, and M. D. Rausher. 2010. The effects of plant sex on range distribution and allocation to reproduction. *New Phytologist* 186: 769-779
99. Wright, K. M., and M. D. Rausher. 2010. The evolution of control and distribution of adaptive mutations in a metabolic pathway. *Genetics* 184: 483-502

100. Majetic, C. J., M. D. Rausher, and R. A. Raguso. 2010. The pigment-scent connection: do mutations in regulatory vs. structural genes differentially alter floral scent production in *Ipomoea purpurea*? *South African Journal of Botany* 76: 632-642.
101. Streisfeld, M. A., and M. D. Rausher. 2011. Population genetics, pleiotropy, and the preferential fixation of mutations during adaptive evolution. *Evolution* 65: 629-642.
102. Hopkins, R. and M. D. Rausher. 2011. Identification of two genes causing reinforcement in the Texas wildflower *Phlox drummondii*. *Nature* 469: 411-415
103. Stresifeld, M. A., Liu, D., and M. D. Rausher. 2011. Predictable patterns of constraint among anthocyanin regulating transcription factors in *Ipomoea*. *New Phytologist*. 191: 264-274.
104. Smith, S. D., and M. D. Rausher. 2011. Gene loss and parallel evolution contribute to species difference in an ecologically important floral trait. *Mol. Biol. Evol.* 28: 2799-2810.
105. Baucom, R. S., S-M Chang, J. M. Kniskern, M. D. Rausher and J. R. Stinchcombe. 2011. Morning glory as a powerful model in ecological genomics: tracing adaptation through both natural and artificial selection. *Heredity*. 2011: 1-9
106. M. T. J. Johnson, R. G. FitzJohn, S. D. Smith, M. D. Rausher, and S. P. Otto. 2011. Loss of sexual recombination and segregation is associated with increased diversification in evening primroses. *Evolution* 65: 3230–3240.
107. Hopkins, R., D. A. Levin, and M. D. Rausher. 2011. Molecular signatures of selection on reproductive character displacement of flower color in *Phlox drummondii*. *Evolution* 66: 469–485
108. Chappell, T., and M. D. Rausher. 2011. Genetics of resistance to the rust fungus *Coleosporium ipomoea* in three species of morningglory (*Ipomoea*). *Plos One* 6: e28875
109. Hopkins, R., and M. D. Rausher. 2012. Pollinator-mediated selection on flower color allele drives reinforcement. *Science* 335: 1090-1092
110. Wessinger, C. A., and M. D. Rausher. 2012. Lessons from flower color evolution on targets of selection. *Journal of Experimental Botany* 63: 5741-5749. (Flowering Newsletter review).
111. Smith, S. D., S. Wang, and M. D. Rausher. 2013. Functional evolution of an anthocyanin pathway enzyme during a flower color transition. *Molecular Biology and Evolution* 30: 602-612.
112. Olson-Manning, C. F., Lee, C-R., Rausher, M. D., Mitchell-Olds, T. 2013. Evolution of flux control in the glucosinolate pathway in *Arabidopsis thaliana*. *Molecular Biology and Evolution* 30: 14-23.
113. Rausher, M. D. 2013. The evolution of genes in branched metabolic pathways. *Evolution*. 67: 34-48.
114. Martins, T. R., Berg, J. J., Blinka, S., Rausher, M. D., and Baum, D. A. 2013. Precise spatio-temporal regulation of the anthocyanin biosynthetic pathway leads to petal spot formation in *Clarkia gracilis* (Onagraceae). *New Phytologist*. 197: 958-969.

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117. Duncan, T. M., and M. D. Rausher. 2013. Evolution of the selfing syndrome in *Ipomoea*. *Frontiers in Plant Science: Plant Evolution and Development*. doi: 10.3389/fpls.2013.00301
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119. Hopkins, R., and M. D. Rausher. 2014. The cost of reinforcement: selection on flower color in allopatric populations of *Phlox drummondii*. *The American Naturalist* 183: 693-710.
120. Wessinger, C. A., L. C. Hileman, and M. D. Rausher. 2014. Identification of major QTLs underlying floral pollination syndrome divergence in *Penstemon*. *Philosophical Transactions of the Royal Society. B.* 369: 29130349
121. Hopkins, R., R. F. Guerrero, M. D. Rausher, and M. Kirkpatrick. 2014. Strong reinforcing selection in a Texas Wildflower. *Current Biology* 24: 1995-1999.
122. Wessinger, C. A. and M. D. Rausher. 2015. Ecological transition predictably associated with gene degeneration. *Molecular Biology and Evolution* 32: 347-354.
123. Rausher, M. D., and L. F. Delph. 2015. Commentary: When does understanding phenotypic evolution require identification of the underlying genes? *Evolution* 69: 1655-1664.
124. Rausher, M. D., and J. Huang. 2015. Prolonged Adaptive Evolution of a Defensive Gene in the Solanaceae. *Molecular Biology and Evolution* 33: 143-151.
125. Wessinger, C. A., C. C. Freeman, M. E. Mort, M. D. Rausher, and L. C. Hileman. 2016. Multiplexed shotgun genotyping resolves species relationships within North American genus *Penstemon*. *American Journal of Botany* 103: 912-922.
126. Chappell, T. M., and M. D. Rausher. 2016. Evolution of host range in *Coleosporium ipomoeae*, a plant pathogen with multiple hosts. *PNAS* 113: 5346-5351.
127. Wise, M. J., and M. D. Rausher. 2016. Costs of resistance and correlational selection in the multi-herbivore community of *Solanum carolinense*. *Evolution* 70: 2411-2420.
128. Martins, T. R., P. Jiang, and M. D. Rausher. 2016. How petals change their spots: *cis*-regulatory re-wiring in *Clarkia* (Onagraceae). *New Phytologist* 216: 510-518.



129. Rausher, M. D. 2017. Selfing, local mate competition, and reinforcement. *American Naturalist* 189: 87-104.
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131. Wessinger, C., J. Kelly, J. Peng, M. Rausher, and L. Hileman. 2018. QTL skimming: a fast approach to map loci generating quantitative variation in natural populations. *Molecular Ecology Resources* 2018: 1-13.
132. Feng, C., C. Feng, M. Kang, and M. D. Rausher. Genetic architecture of quantitative flower and leaf traits in a pair of sympatric sister species of *Primula*. *Heredity* 122: 864-876.
133. Rifkin, J. L., A. S. Castillo, I. T. Liao, Rifkin, J., A. and M. D. Rausher. 2019. Gene flow, divergent selection and resistance to introgression in two species of morning glories (*Ipomoea*). *Molecular Ecology* 28: 1709-1729.
134. Rifkin, J. L., I. T. Liao, A. S. Castillo and M. D. Rausher. 2019. Multiple aspects of the selfing syndrome of the morning glory *Ipomoea lacunosa* evolved in response to selection: A  $Q_{st}$ - $F_{st}$  comparison. *Ecology and Evolution* 9: 7712-7725.
135. Wessinger, C. A., M. D. Rausher, and L. C. Hileman. 2019. Adaptation to hummingbird pollination is associated with reduced diversification in *Penstemon*. *Evolution Letters* 3: 521-533.
136. Muñoz-Rodríguez, P., Carruthers, T., Wood, J. R. I., Williams, B. R. M., Weitemier, K., Kronmiller, B., Goodwin, Z., Sumadijaya, A., Anglin, N. L., Filer, D., Harris, D., Rausher, M. D., Kelly, S., Liston, A., and R. W. Scotland. 2019. A taxonomic monograph of *Ipomoea* integrated across phylogenetic scales. *Nature Plants* 5: 1136–1144.
137. Duncan, T. M., and M. D. Rausher. 2020. Selection favors loss of floral pigmentation in a highly selfing morning glory. *Plos One* 15(4): e0231263.
138. Feng, C., Wang, J., Wu, L., Kong, H., Yang, L., Feng, C., Wang, K., Rausher, M. and M. Kang. 2020. The genome of a cave plant, *Primulina huaijiensis*, provides insights into adaptation to limestone karst habitats. *New Phytologist* 227: 1249-1263.
139. Ohsaki, N., Ohata, M., Sato, Y., and M. D. Rausher. 2020. Host-plant choices determined by reproductive interference between closely related butterflies. *American Naturalist* 196: 512-523.
140. Ostevik, K. L., J. L. Rifkin, H. Xia, and M. D. Rausher. 2021. Morning glory species co-occurrence is associated with asymmetrically decreased and cascading reproductive isolation. *Evolution Letters* 5: 75-85.

141. Canavar, O. and M. D. Rausher. 2021. Molecular analysis of structural genes involved in flavonoid biosynthesis in natural colored cotton. *Crop Science* 61: 1117-1126.
142. Lin, Rong-Chien and M. D. Rausher. 2021. R2R3-Myb genes control petal pigmentation patterning in *Clarkia gracilis* ssp. *Sonomensis* (Onagraceae). *New Phytologist* 229: 1147-1162.
143. Lin, Rong-Chien and M. D. Rausher. 2021. Ancient gene duplications, rather than polyploidization, facilitate diversification of petal pigmentation patterns in *Clarkia gracilis* (Onagraceae). *Molecular Biology and Evolution* 38: 5528–5538.
144. Rifkin, J. L., G. Cao, and M. D. Rausher. 2021. Genetic architecture of divergence: the selfing syndrome in *Ipomoea lacunosa*. *American Journal of Botany* 108: 2038–2054.
145. Canavar, O. and M. D. Rausher. 2021. Differences of flavonoid structural genes preferentially expressed in brown and green naturally colored cotton. *Turkish J. Agriculture and Forestry* 45: 266-272.
146. Liao, I. T., J. L. Rifkin, G. Cao, and M. D. Rausher. 2021. Modularity and selection of nectar traits in the evolution of the selfing syndrome in *Ipomoea lacunosa* (Convolvulaceae). *New Phytologist* 233: 1505-1519.
147. Nasar, S., K. Ostevik, G. Murtaza, and M. D. Rausher. 2022. Morphological and molecular characterization of variation in common bean (*Phaseolus vulgaris* L.) germplasm from Azad Jammu and Kashmir, Pakistan. *PLOS One* 17: e0265817.
148. Yi, H., J. Wang, J. Wang, M. Rausher and M. Kang. 2022. Genomic insights into inter- and intraspecific mating system shifts in *Primulina*. *Molecular Ecology* (in press).
149. I. T. Liao, A. H. Fulford, K. L. Ostevik, and M. D. Rausher. 2022. Crossability and genetic characterization of a North American representative of *Ipomoea grandifolia* (Convolvulaceae), a member of *Ipomoea* series *Batatas*. *Systematic Botany* 47: 817-831.
150. García, Y., K. L. Ostevik, J. Anderson, M. D. Rausher, and A. L. Parachnowitsch. Floral scent divergence across an elevational hybrid zone with varying pollinators. *Oecologia* (in press).
151. Gao, Z., Y. Liang, Y. Wang, X. Yang, J. Chen, M. D. Rausher, and T. Shi. 2022. Expression inheritance and constraints on cis- and trans- regulatory mutations underlying lotus color divergence. *Plant Physiology* (in press).

### Book Chapters

1. Rausher, M.D. 1983. The Ecology of host selection behavior in phytophagous insects. in R. F. Denno and M. S. McClure, eds. *Variable Plants and Herbivores in Natural and Managed Systems*. Academic Press, New York. pp. 223-257.

2. Papaj, D.R. and M.D. Rausher. 1983. Individual variation in host location by phytophagous insects. in S. Ahmad, ed. *Herbivore Insects: Host Seeking Behavior and Mechanisms*. Academic Press, New York, New York. pp. 77-124.
3. Rausher, M.D. 1992. Natural selection and the evolution of plant-insect interactions. Pp. 20-88 in B.D. Roitberg and M.B. Isman (eds.). *Evolutionary Perspectives in Insect Chemical Ecology*. Routledge, Chapman, and Hall, New York.
4. Simms, E.L. and M.D. Rausher. 1992. Quantitative Genetics. Pp. 42-68 in R.S. Fritz and E.L. simms (eds.). *Ecology and Evolution of Plant Resistance*. The University of Chicago Press.
5. Rausher, M.D. 1993. The evolution of habitat preference: avoidance and adaptation. pp. 259-283 in K.C. Kim and B.A. McPherson, editor. *Evolution of Insect Pests: The Pattern of Variations*. John Wiley and Sons, New York, New York.
6. Rausher, M.D. 1995. Behavioral ecology of oviposition in the pipevine swallowtail, *Battus philenor*. pp. 53-62 In J.M. Scriber, Y. Tsubaki, and R.C. Lederhouse (eds.). *Ecology and Evolutionary Biology of the Papilionidae*. Scientific Publishers, Washington.
7. Rausher, M. D. 2006. The evolution of flavonoids and their genes. In, E. Grotewold (ed.). *The Science of Flavonoids*. Springer.
8. Smith, S. D., Miller, R. E., Otto, S. P., FitzJohn, R. G., and M. D. Rausher. 2010. The effects of flower color transitions on diversification rates in morning glories (*Ipomoea* subg. *Quamoclit*, Convolvulaceae). In *Darwin's Heritage Today: Proceedings of the Darwin 200 Beijing International Conference*, Peking University Press.

### Book Reviews

1. Rausher, M.D. 1980. The Chemistry of Coevolution. *Science* 207:973-974. (Book review).
2. Rausher, M.D. 1983. Population Ecology: A Unified Study of Animals and Plants. *American Scientist* 70:539-540. (Book review)
3. Rausher, M.D. 1983. Coevolution: A general theory. *Ecology* 64:964-965. (Book review).
4. Rausher, M.D. 1984. Plants and Herbivores. *Science* 226:827-828. (Book review).
5. Rausher, M.D. 1985. Insects on plants. *American Scientist* 73:291-292. (Book review).
6. Rausher, M.D. 1988. Plant-insect interfaces. *Ecology* 69:295-296. (Book review)

### Publications by Students and Postdocs

My students and postdocs have independently published more than 55 papers on work done in our lab. References to these papers can be found at our lab web site:

<http://www.duke.edu/~mrausher/>

## University Service

UFCAS Curriculum Committee, 1981-1983.  
Academic Council (Alternate Member), 1982-1983.  
University Schedule Committee, 1985-1986.  
Graduate School Executive Committee, 1990-1994.  
Luce Fellowship Committee, 1991-1992, 1994.  
Genomic and Computational Biology Center shared resource advisory committee. 2017.

## Departmental Services

Spending Committee (Chair), 1980-1982.  
Seminar Committee (Chair), 1980-1987.  
Director, Zoology Field Station, 1980-1988, 1992-1995.  
Space and Facilities Committee (Chair), 1985.  
Conner Tenure Committee, 1985.  
Director of Graduate Studies, 1986-1990.  
Executive Committee (Zoology Department), 1989-1990.  
Curriculum and Admissions Committee, University Program in Genetics, 1987-1990,  
1991-1993.  
Speakers Committee, University Program in Genetics, 1990-1992.  
Evolution Search Committee (Chair), 1993.  
William Morris Reappointment Committee, 1994.  
Chair (Dept. of Zoology), 1995-2000.  
Wilson Tenure Committee, 2000.  
Graduate Affairs Committee, 2002-2004, 2009-present  
Rob Jackson Promotion Committee, 2002.  
Richard Fehon Promotion Committee, 2003  
Tom Mitchell-Olds Tenure Committee, Chair, 2004  
Greg Wray Promotion Committee, 2004  
Compensation Committee, 2004-2005, 2013  
Bill Morris Promotion Committee (Chair), 2005  
Departmental Executive Committee, Fall 2005-2010.  
Ron Grunwold review committee, 2005  
John Mercer review committee, Chair, 2007  
Mohamed Noor Promotion committee, Chair, 2007  
John Willis Promotion committee, 2007.  
Promotions Review Committee 2007-2010, 2012.  
Steve Haase Promotion Committee, 2008-2009.  
Graduate Affairs Committee 2017-present  
Amy Goldberg reappointment committee 2021

## **Courses Taught**

### Lecture Courses:

Animal Diversity (Fall semester, 1978-1984, 1986-1988)  
Insect Behavior (Fall semester, 1980, 1982, 1984, 1986) (co-taught with William Conner)  
Evolutionary Mechanisms (Graduate) (Spring, 1991 and Fall 1992 co-taught); (Spring 1994, 1995, 1997, 1999, 2001, 2004, 2018, Fall 2014; taught alone)  
Principles of Evolution (Spring, 1992, 1993, 1994, 1995, 1996 co-taught); (Spring, 1998, 2000, 2003, 2005 taught alone)  
Evolutionary Genetics (Graduate) (Fall, 1995, 1996, 1997, 1998, 1999, 2000, 2002, 2003, 2004)  
Ecology and Evolution (co-taught Fall 2005, 2006, Spring 2008, 2009)  
Genetics and Evolution (co-taught Fall 2010, 2011, 2012, 2013, 2016, 2017, Spring 2015)  
Molecular Biology, Genetics, and Evolution (co-taught Spring 2019, 2020, 2021)  
Graduate Statistics (Spring 2012, 2013, 2015)

### Graduate Seminars:

Plant-Insect Interactions (Fall, 1979).  
Predator-Prey Interactions (Spring, 1980).  
Evolutionary Biology of Social Behavior (Spring, 1981).  
Quantitative Genetics (Spring, 1982, 1986, 1988, 1991, Fall, 1994).  
Molecular Biology and Evolution (Spring, 1983).  
Speciation (Spring, 1984; Fall, 1991).  
"The Genetics of Natural Populations" (Spring, 1989).  
Insect Ecology and Evolution (Spring, 1990).  
Genetic Variation (Fall, 2007, 2008)  
Natural Selection (Fall, 2009; Spring 2014; Fall 2021)  
Plant Evolutionary Genetics (co-taught, Fall, 2011)

### Weekly Seminar and Discussion Groups:

PopBio (1979-present; with several members of Biology faculty; 30-40 graduate students and postdocs).

## **Training Record**

### Ph.D. Students

Helen Miller-Alexander. (1982). (Botany, Co-chair). Faculty, University of Kansas.  
*Demograph of and intraspecific variation in Plantago lanceolata in relation to infection by the fungus Fusarium moniliforme var. subglutinans.*

Sara Via. (1983). Faculty, University of Maryland  
*Genotype-environment interaction in natural populations: variation in host use by a polyphagous herbivore.*

- Diane R. Campbell. (1983). Faculty, University of California, Irvine.  
*Pollinator sharing and reproduction in a forest herb.*
- Daniel R. Papaj. (1984). Faculty, University of Arizona.  
*Causes of variation in host discrimination behavior in the butterfly, *Battus philenor*.*
- Peter Turchin. (1985). Faculty, University of Connecticut.  
*The effect of host-plant dispersion on movement of Mexican bean beetle (*Epilachna varivestis*).*
- Diana Pilson. (1990). Faculty, University of Nebraska.  
*Genetic variation in aphids as a determinant of distribution and abundance patterns.*
- David Eitzman. (1991). Faculty, Carlton College.  
*Interactions between herbivore species with respect to plant fitness and evolution of plant resistance.*
- Wendy Fineblum. (1991). Risk Analyst, USDA APHIS  
*Mechanisms of resistance to herbivorous insects in the morning glory, *Ipomoea purpurea*.*
- Susan Paulsen. (1992). (Co-chair). Postdoctoral Associate, University of North Carolina.  
*Constancy of genetic variance-covariance matrices for wing-color patterns in *Precis* butterflies.*
- Marcy Speer. (1992). Director, Duke Center for Human Genetics, Duke University Medical Center. (deceased)  
*Presymptomatic and prenatal diagnosis in myotonic dystrophy by genetic linkage studies.*
- Banumathi Subramaniam. (1994). Faculty, University of Massachusetts.  
*Maintenance of a polymorphism for flower color in the morning glory, *Ipomoea purpurea*.*
- Keisuke Iwao. (1995). Faculty, St. Andrews University, Japan.  
*Pairwise vs. diffuse selection on resistance in *Ipomoea lacunosa*.*
- Rodney Mauricio. (1995). Faculty, University of Georgia.  
*The evolution of biochemical resistance to herbivores and pathogens in the annual plant, *Arabidopsis thaliana*.*
- Mary Malik. (1996). (Co-chair). Clinical Postdoc, Rehab. Medicine, U. Washington Sch. Medicine (now in private practice)  
*The genetics and evolution of somatic self/non-self recognition in the oyster mushroom, *Pleurotus ostreatus*.*
- Laura Mojonier (1996). Instructor, University of Illinois.  
*Natural selection on seed size in the common morning glory, *Ipomoea purpurea*.*
- Nora Underwood. (1997). Faculty, Florida State University.  
*Population biology of inducible plant defenses.*
- Shu-Mei Chang. (1997). Faculty, University of Georgia.  
*Natural selection on anther-stigma distance in the common morning glory, *Ipomoea purpurea*.*
- Kerry Bright. (1998). Biology Program Advisor, University of Montana.  
*Maintenance of genetic variation for leaf shape in *Ipomoea hederaceae*.*
- Peter Tiffin. (1999). Faculty, University of Minnesota.  
*Evolution of tolerance to herbivores in morning glories.*
- Tamra Mendelson. (2000). Faculty, University of Maryland, Baltimore County.  
*Quantification of the rate of evolution of sexual isolation in darters.*

- John Stinchcombe. (2001). Faculty, University of Toronto.  
*Coevolution of the ivyleaf morning glory (*Ipomoea hederacea*) and its natural enemies.*
- Matthew Rutter. (2002). Faculty, College of Charleston.  
*The evolution of mutualism and cost-benefit analysis: geographic variation in the extrafloral nectar traits of *Chamaecrista fasciculata*.*
- Caitlin Coberly. (2003). Private Sector.  
*Detecting patterns of selection on the A locus affecting flower color in *Ipomoea purpurea*.*
- Michael Wise. (2003). Visiting Assistant Professor, Roanoke College.  
*Pairwise vs. diffuse coevolution among *Solanum carolinense* and its insect herbivores.*
- Rebecca Zufall. (2003). Faculty, University of Houston.  
*Anthocyanin biosynthesis and the evolution of red flowered *Ipomoea*.*
- Matthew Hahn (2003). Faculty, Indiana University.  
*Genetic architecture of flower-differences in *Ipomoea* species.*
- Joel Kniskern (2004). Director of Next Generation Breeding, Driscolls.  
*Evolution of a disease-resistance polymorphism in *Ipomoea purpurea*.*
- Robin Smith (2005). Science writer, Duke University Press.  
*Pollinator-mediated interspecific competition and selection on floral traits associated with selfing in a self-compatible morning glory.*
- Mario Vallejo (2005) Faculty, University of Stirling, UK.  
*Sex ratio evolution in *Solanum carolinense*: stabilizing and frequency-Dependent selection acting on both male and female fitness components.*
- David des Marais (2008). Faculty, Massachusetts Institute of Technology.  
*Evolution of tandem duplicates at the DFR locus in morning glories.*
- Kevin Wright (2010) (Co-Advisor). Principal Data Scientist, Calico.  
*Genetics of adaptation to heavy metals in *Mimulus*.*
- Thomas Chappell (2010). Faculty, Texas A&M University.  
*Genetics of coevolution between morning glories and a rust pathogen.*
- Robin Hopkins (2010). Faculty, Harvard U.  
*The evolution of reproductive character displacement in *Phlox*.*
- Tanya Kossler (2013). Faculty, Wake Community College.  
*Maintenance of a flower-color polymorphism in *Ipomoea lacunosa*.*
- Carrie Wessinger (2013). Faculty, U. South Carolina.  
*Genetics of parallel flower color evolution in *Penstemon*.*
- Joanna Rifkin (2017). Postdoctoral Associate, University of Toronto.  
*Evolutionary genetics of prezygotic isolation between two *Ipomoea* species*
- Jamie Wagner (2019)  
*Community assembly in the fauna of deep sea vents.*
- Rong-Chien Lin (2020). Postdoctoral Associate, Biodiversity Center, Academia Sinica  
*Evolutionary genetics of floral patterns*
- Irene Liao (2021). Postdoctoral Associate, UCLA.  
*Evolutionary genetics of nectar volume and scent production in a selfing plant*
- Kimberly Stanton (expected 2022)  
*Evolutionary development of *Clarkia* flowers.*
- Karla Sosa (expected 2022).

*Evolution of mating systems in the fern genus Cheilanthes.*  
Jonathan Colen (expected 2024).  
*Processes responsible for introgression in Ipomoea cordatotriloba.*  
Gongyuan Cao (expected 2024).  
*Molecular evolution of threonine deaminase in the Brassicaceae: a novel defense against insect herbivores.*

#### Postdoctoral Trainees

Ellen Simms. (1984-1988). Faculty, University of California-Berkeley  
Francois Odendaal. (1985-1990). Director, EcoAfrica  
James Fry. (1989-1991). Faculty, University of Rochester.  
Susan Paulsen. (1994-1997).  
Shu-Mei Chang. (1997-1998). Faculty, University of Georgia.  
Nora Underwood. (1997-1998). Faculty, Florida State University.  
Richard Miller. (1995-2001). Faculty, Southeastern Louisiana University  
Verena Lu. (2001-2003). Faculty, Institute of Botany, Chinese Academy of Sciences  
Diana Wolf. (2001-2004). Faculty, University of Alaska  
Matt Streisfeld. (2005-2009). Faculty, University of Oregon  
Stacey Smith (2006-2010). Faculty, University of Colorado  
Marc Johnson (2007-2008). Faculty, University of Toronto  
Robin Hopkins (2011-2012). Faculty, Harvard University  
Talline Martins (2011-2014). Director, Graduate Professional Development, U. Florida  
Peng Jiang (2015-2018).  
Kate Ostevik (2016-2021). Faculty, U. C. Riverside

#### Visiting Scholars

Robert Fritz, Vassar College  
Naota Ohsaki. Kyoto University  
Qingfeng Wang. Wuhan Botanical Garden, CAS  
Ming Kang. South China Botanical Garden, CAS  
Shuqi Fang. Nanchang University  
Xiang-wen Fang. Lanzhou University  
Xiao-Fang Yu. Sichuan Agricultural University  
Junmin Li. Institute of Ecology, Taizhou University

#### M.A. and M.S. Students

Deirdre Kuhl. (1982). Research Scientist, Glaxo-Wellcome.  
*No thesis.*  
Edward V. Simpson. (1987). Computer Programmer, Duke University Medical Center.  
*Response to artificial selection for high fecundity on two host plants of the tortoise beetle, Deloyala guttata.*  
Christianna Williams. (1989). Graduate Student, University of California-Berkeley.



- No thesis.*
- Lori Oh. (1993).  
*A screening for intraspecific variation in the chloroplast tRNA leucine intron of Ipomoea purpurea.*
- Yongjun He (1999)  
*Cloning and sequencing of structural genes of the anthocyanin pathway in Ipomoea obscura.*
- Jie Huang (2013)  
*A Preliminary Study of Threonine Deaminase Duplication in Solanaceae*
- Allan Castillo (2018)  
*Molecular evolution of a defensive gene*