

Janice L. Bossart - Curriculum Vitae

Professor of Biological Sciences
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Southeastern Louisiana University
Hammond, LA 70402

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Research Interests: Biogeography of biodiversity (genetic, species, population); ecological indicator species; ecological sustainability and biodiversity conservation; environmental gradients and ecotones; determinants of spatial genetic structure; evolutionary ecology and phenotypic plasticity of resource use; female host choice and behavioral ecology; evolution of dispersal and gene flow.

Professional Interests: STEM diversity; mentoring; environmental and science policy; equity and justice; global stewardship and international development.

Education:

Ph.D. (1993) Entomology; Interdisciplinary Program in Ecology & Evolutionary Biology –
Michigan State University
M.S. (1988) Entomology – Michigan State University
B.S. (1985) Magna cum laude – Plant and Soil Science, Basic Science –
West Virginia University

Professional web presence:

Academic Website: Currently inaccessible
ResearchGate profile: https://www.researchgate.net/profile/Janice_Bossart
Google Scholar profile: <https://scholar.google.com/citations?user=823GEW4AAAAJ&hl=en>

Professional Experience:

Southeastern Louisiana University:

2023-present Graduate Coordinator, Department of Biological Sciences
2018-2021 Dyson Professor, Department of Biological Sciences
2017-present Professor, Department of Biological Sciences
2005-2017 Associate Professor, Department of Biological Sciences

National Science Foundation:

2015-2017 Program Director, Evolutionary Processes, BIO-DEB
2016-2017 Program Director, Dynamics of Coupled Natural & Human Systems,
BIO/GEO/SBE
2016-2017 Program Director, GRFP Program
2016-2017 Cluster Leader, Evolutionary Processes, BIO-DEB

Carnegie Museum of Natural History:

2007-present Research Associate, Invertebrate Zoology

Rose-Hulman Institute of Technology:

2004-2005 Visiting Research Professor, Biology & Biomedical Engineering
2003-2004 Visiting Assistant Professor, Biology & Biomedical Engineering

College of New Jersey:

1998-2003 Assistant Professor, Biology Department

Louisiana State University:

1997-1998 Lecturer, Department of Biological Sciences,
1995-1997 Postdoctoral Research Fellow, Museum of Natural Science

University of Maryland:

1993-1995 Postdoctoral Research Associate, Department of Entomology

Grants awarded:

- 2021-2022 Louisiana Department of Wildlife & Fisheries – USFWS (\$60,368)
*A search for the imperiled Eastern Beard-Grass skipper, *Atrytone arogos arogos*.*
- 2019-2021 Louisiana Department of Wildlife & Fisheries – USFWS (\$186,509)
Wild bees in fire-managed, eastern upland longleaf pine ecosystems: assessing the effects of prescribed burns on bee communities.
- 2014-2016 Louisiana Department of Wildlife & Fisheries – USFWS (\$173,630)
The understudied, but ecologically invaluable: A comparative survey of native bee and butterfly assemblages in Tier 1 conservation habitats of the East Gulf Coastal Plain.
- 2011-2012 Lake Pontchartrain Basin Foundation – NOAA (\$50,000)
Ecological indicators of ecosystem integrity: benthic macroinvertebrate communities of the Lake Pontchartrain shoreline (award not disbursed due to Federal budget cut).
- 2007-2010 Louisiana Department of Wildlife & Fisheries – USFWS (\$118,455)
Insect assemblages of rare saline prairies.
- 2006-2010 Pontchartrain Basin Research Program – EPA (\$145,817)
Development of an index of biological integrity for Lake Pontchartrain Basin wetlands. (with CR Jackson, Co-PI)
- 2004-2009 National Science Foundation – DEB-0417367 (\$306,876)
Diversity and dynamics of forest butterflies in Ghana's indigenous sacred groves and forest reserves
- 2001-2002 National Geographic Society – (\$23,000)
Butterfly biodiversity in Ghana's sacred forests.
- 1998 AAAS Environmental Science & Engineering Policy Fellowship (declined) (\$45,000)
- 1995 Molecular Evolution Postdoctoral Fellowship, Louisiana State University (\$42,500)
- 1998-2017 Various small internal & external grants (\$78,560)
- 1990-1992 National Science Foundation, Doctoral Dissertation Improvement Grant – \$7000
Differential selection in different environments: host adaptation and the maintenance of genetic variation in a polyphagous herbivore.

Honors/Awards (*undergraduate researcher):

- LA EPSCoR (NSF), Supervised Undergraduate Research Experience (SURE),
with Alyssa Roddy* (2014)
- Invited Scientific Expert, Cactus Moth Program Technical Work Group (2009)
- Outstanding Faculty of the Week, Rose-Hulman Institute of Technology (2004)
- Invited Scientific Expert, Conservation International, Ghana Rapid Assessment Program (2003)
- Finalist, AAAS Diplomacy Fellowship (2003)
- Beta Beta Beta Biological Society Research Award, National Chapter,
with Karla Adesso* (2001)
- Phi Kappa Phi Honor Society Research Award, Local Chapter,
with Molly Sheridan* (2000)
- Finalist, AAAS Roger Reville Fellowship in Global Stewardship (April 1998)
- Delta Zeta Outstanding Professor, Louisiana State University (October 1997)
- Eugenia McDaniel Teaching Award, Entomology, Michigan State University (1992)
- Wooley Research Award, Entomology, Michigan State University (1990)
- Outstanding Senior, Division of Plant and Soil Sciences, West Virginia University (1985)
- Golden Key National Honor Society – (inducted 1985)
- Gamma Sigma Delta National Honor Society of Agriculture – (inducted 1984)
- Business and Professional Women's Association – Academic Scholarship (1984)

Publications (*graduate, **undergraduate):

- *Robertson, A and **J. L. Bossart** (2024) Seasonal diet change of the Florida Harvester Ant (*Pogonomyrmex badius*) and competition with the Red Imported Fire Ant (*Solenopsis invicta*).
Submitted: *Southeastern Naturalist*.

- *Simmons, S. and **J. L. Bossart** (2020) Apparent resilience to fire of native bee (Hymenoptera: Apoidea) communities from Upland Longleaf Pine Forests in Louisiana and Mississippi. *Southeastern Naturalist*. 19:567-581.
- Owens, B. E., L. Allain, E. C. Van Gorder, **J. L. Bossart**, and C. E. Carlton (2018) The bees (Hymenoptera: Apoidea) of Louisiana: an updated, annotated checklist. *Proc. Entomol. Soc. Washington*. 120:272-307.
- *Weller, M. O. and **J. L. Bossart** (2017) Insect community diversity tracks degradation and recovery of a wastewater assimilation marsh in southeast Louisiana. *Wetlands*. 37:671-673.
- Bossart, J. L.** and *Josephine B. Antwi (2016) Limited erosion of genetic and species diversity from small forest patches: Sacred forest groves in an Afrotropical biodiversity hotspot have high conservation value for butterflies. *Biological Conservation*. 198:122-134.
- Bossart, J. L.** and *J. Antwi (2013) Species-specific traits predict genetic structure but not genetic diversity of three fragmented Afrotropical butterfly species. *Conservation Genetics*. 14:511-528.
Featured in special issue on landscape genetics.
- Bossart, J. L.**, C. R. Jackson, and *R. Clark (2011) An Index of Biological Integrity for wetlands in the Lake Pontchartrain Basin. *In: Basics of the Basin 2011 – Commemorating 10 years of research*. Lake Pontchartrain Basin Foundation. Pp. 23-27.
- Bossart, J. L.** (2009) Butterflies of West Africa. Invited Book Review. *Bulletin of the Entomological Society of Canada*. 41:26-27.
- **Elbers, J. P. and **J. L. Bossart** (2009) Occurrences of forest butterflies in the farm bush savannah outside a forest reserve in Ghana, West Africa. *J. Tropical Insect Science*. 29:141-150.
- Bossart, J. L.** and E. Opuni-Frimpong (2009) Distance from edge determines fruit-feeding butterfly community diversity in Afrotropical forest fragments. *Environmental Entomology*. 38:43-52.
- Bossart, J. L.**, J. F. Fetzner Jr., and J. E. Rawlins (2007). Ghana Butterfly Biodiversity Project ©. <http://iz.carnegiemnh.org/GhanaBFly/>.
- Bossart, J. L.**, E. Opuni-Frimpong, S. Kuudaar, and E. Nkrumah (2006) Richness, abundance, and complementarity of fruit-feeding butterfly species in relict sacred forests and forest reserves of Ghana. *Biodiversity and Conservation*. 15:333-359.
Reprinted In Anthology: (2006) Arthropod diversity and conservation (D.L. Hawksworth and A.T. Bull, eds). Topics in biodiversity and conservation, Vol 1. Springer Verlag.
- Bossart, J. L.**, E. Opuni-Frimpong, S. Kuudaar, and E. Nkrumah (2005) Fruit-feeding butterfly communities of forest "islands" in Ghana: survey completeness and spatial correlates of diversity. Pp. 151-158. *In: African biodiversity: molecules, organisms, ecosystems*. Proceedings of the 5th International Symposium on Tropical Biology, Museum Koenig, Bonn, Germany (B.A. Huber, B.J. Sinclair and K-H. Lampe, eds). Springer Verlag.
- Bossart, J. L.** (2004) Butterflies: Ecology and Evolution Taking Flight. Invited Book Review. *Quarterly Review of Biology*. 79:435-436.
- Bossart, J. L.** (2004) Genes in the Environment. Invited Book Review. *Quarterly Review of Biology*. 79:307-308.
- Bossart, J. L.** (2003) Covariance of preference and performance on normal and novel hosts in a locally monophagous and locally polyphagous butterfly population. *Oecologia*. 135:477-486.
- Bossart, J. L.** and C. E. Carlton (2002) Insect conservation in America: status and perspectives. *American Entomologist*. 48:82-92.

- **Stracey, C. M. and **Bossart J. L.** (2002) Temporal survey of butterfly species in the Pine Barrens of New Jersey. *In: Identification and protection of reference wetland natural communities in New Jersey: Pine Barren Savannas.* (Report for NJDEP, Division of Parks and Forestry, Office of Natural Lands Management, Natural Heritage Program).
- Bossart, J. L.** and J. M. Scriber (1999) Preference variation in the polyphagous tiger swallowtail butterfly (Lepidoptera: Papilionidae). *Environmental Entomology*. 28:628-637.
- Bossart, J. L.** (1998) Genetic architecture of host use in a widely distributed, polyphagous butterfly (Lepidoptera: Papilionidae): adaptive inferences based on comparison of spatio-temporal populations. *Biological Journal of the Linnean Society*. 65:279-300.
- Bossart, J. L.** and D. Pashley Prowell (1998) Genetic estimates of population structure and gene flow: Limitations, lessons, and new directions. *Trends in Ecology and Evolution*. 13:171-212.
- Bossart, J. L.** and D. Pashley Prowell (1998) Reply from J. L. Bossart and D. Pashley Prowell. *Trends in Ecology and Evolution*. 13:360.
- Triapitsyn, S. V., R. F. Mizell, III, **J. L. Bossart**, and C. E. Carlton (1998) Egg parasitoids of glassy-winged sharpshooter, *Homalodisca coagulata* (Say) (Homoptera: Cicadellidae). *Florida Entomologist*. 81:241-243.
- Bossart, J. L.** (1995) Swallowtails of the Americas. Invited Book Review. *Quarterly Review of Biology*. 70:522-523.
- Bossart, J. L.** and J. M. Scriber (1995) Maintenance of ecologically significant genetic variation in the tiger swallowtail butterfly through differential selection and gene flow. *Evolution*. 49:1163-1171.
- Bossart, J. L.** and J. M. Scriber (1995) Genetic variation in oviposition preference in the tiger swallowtail butterfly: interspecific, interpopulation and interindividual comparisons. Pp. 183-193. *In: The swallowtail butterflies: Their ecology and evolutionary biology.* (J.M. Scriber, T. Tsubaki and R.C. Lederhouse, eds.). Scientific Publisher, Inc. Gainesville, FL.
- Bossart, J. L.** (1993) Differential selection and adaptation in different host environments: genotypic and phenotypic variation in host use traits in the tiger swallowtail butterfly, *Papilio glaucus* L. PhD Dissertation. Michigan State University. Lansing.
- Ayres, M. P., **J. L. Bossart**, and J. M. Scriber (1991) Patterns of variation in nutritional physiology: tree-feeding swallowtails of the nearctic. Pp. 85-102. *In: Forest insect guilds: patterns of interaction with their host trees.* (Y. Baranchikov and W. Mattson, eds.). *Proceedings of the Symposium of Soviet Academy of Sciences*. U.S. Forest Service.
- Hagen, R. H., R. C. Lederhouse, **J. L. Bossart**, and J. M. Scriber (1991) *Papilio canadensis* and *P. glaucus* are distinct species. *Journal of the Lepidopterists Society*. 45:245-258.
- Scriber, J. M., **J. L. Bossart**, and M. L. Snider (1991) Diagnostic alleles from electrophoresis distinguish two noctuid pest species, *Hydraecia immanis* and *H. micacea*. (Lepidoptera: Noctuidae). *Great Lakes Entomologist*. 5:91-98.
- Scriber, J. M., R. H. Hagen, R. C. Lederhouse, M. P. Ayres, and **J. L. Bossart** (1991) Plant ecotones and butterfly speciation. *Symposia Biologica Hungarica*. 39:317-326.
- Bossart, J. L.** and S. H. Gage (1990) The biology and seasonal occurrence of *Manduca quinquemaculata* (L.) and *Manduca sexta* (Haworth) (Lepidoptera: Sphingidae) in southwestern Michigan. *Environmental Entomology*. 19:1055-1059.
- Bossart, J. L.**, B. Giebink, and J. M. Scriber (1989) Electrophoretic differences between *Hydraecia immanis* and *Hydraecia micacea*. *In: Impact of Integrated Crop Management Practices on European Corn Borer and Related Stalk-boring Insects.* *Proc. NC-180 Regional Research*

Technical Committee.

Bossart, J. L. (1987) Consequences of intraspecific host quality on the ecology of two specialist phytophages, *Manduca quinquemaculata* and *Manduca sexta*, (Lepidoptera: Sphingidae). MS Thesis. Michigan State University. Lansing.

Publications – In Preparation:

Bossart, J. L. et al (2024) Temporal diversity in native bee assemblages of longleaf pine ecosystems. Intended for *Environmental Entomology*.

Published Abstracts:

Bossart, J. L., E. Pigott, and S. Simmons (2020) *Native bee communities in a threatened fire-dependent, fire-managed ecosystem.*

Bossart, J. L. and J. Antwi (2018) *Conserving biodiversity: is species diversity an effective proxy for intrapopulation genetic diversity?* II Joint Congress on Evolutionary Biology.

Bossart, J. L. (2018) Winners, losers, and nestedness of species assemblages: butterfly assemblages in Afrotropical forest relicts. Ecological Society of America 103rd Annual Meeting.

Bossart, J. L. and J. Antwi (2015) Species and genetic diversity are minimally correlated across a highly fragmented landscape and largely independent of habitat patch size. Ecological Society of America 100th Annual Meeting.

Bossart, J. L. and J. Antwi (2013) Small sacred groves retain the bulk of biodiversity found in much larger forest reserves. Proc. XXVI International Congress of Conservation Biology.

Bossart, J. L. (2009) The value of indigenous forest reserves to biodiversity conservation. Ecological Society of America 94th Annual Meeting.

Bossart, J. L. (2008) Winners and losers in a transformed landscape: butterfly diversity in remnant Afrotropical forests. Proc. XXIII International Congress of Entomology.

Bossart, J. L., E. Opuni-Frimpong, S. Kuudaar, E. Nkrumah (2006) Butterfly assemblages in Afrotropical forest fragments: distance from edge determines community composition. Ecological Society of America 91st Annual Meeting.

Bossart, J. L. (2003) Species assembly rules and nestedness of butterfly communities in long-protected relict forests of Ghana. Ecological Society of America 88th Annual Meeting.

Bossart, J. L. (2002) Temporal diversity of frugivorous butterflies in Ghana's sacred forests. Ecological Society of America 87th Annual Meeting.

Bossart, J. L. (1996) Evolutionary consequences of habitat fragmentation on butterfly populations. Proceedings V International Congress of Systematic and Evolutionary Biology.

Bossart, J. L. and J. Mark Scriber (1990) Differential selection and gene flow: the evolution of host use patterns in *Papilio glaucus*. Proceedings IV International Congress of Systematic and Evolutionary Biology.

Bossart, J. L. and J. Mark Scriber (1988) Heterogeneity, heterozygosity, and heterosis in *Papilio glaucus*: evidence from laboratory hybrid studies. Proceedings XVIII International Congress of Entomology.

Invited Research Seminars:

35 total (1994-2023)

Conference Presentations:

62 conference presentations, as presenter or co-presenter

Graduate Student Training:

Advisees: 13 since 2005

Graduate Supervisory Committee Member: 24 since 2005

Undergraduate Student Researchers:

33 since 1999

Teaching Experience (post PhD) – (# of times taught):

Southeastern Louisiana University

- GBIO 691 Graduate Seminar, various topics – (3)
- GBIO 485/585 Conservation Biology (Lecture & lab) – (8)
- GBIO 409/509 General Entomology (Lecture & lab) – (2)
- GBIO 405/505 Evolution (Lecture) (5)
- GBIO 395 Ecology – (17)
- GBIO 397 Ecology Lab – (18)
- GBIO 441 Senior Seminar – (17)
- GBIO 341 Professional Aspects of Biology – (20)
- GBIO 154 General Biology Lab – (1)

Rose-Hulman Institute of Technology

- AB 330 Evolution (Lecture & lab) – (1)
- AB 320 Ecology (Lecture & lab) – (1)
- AB 310 Plant Structure & Function (Lecture & lab) – (1)
- AB 130 Evolution & Diversity (Lecture & lab) – (1)
- AB 101 Essential Biology (Lecture) – (2)

The College of New Jersey

- BIO 499 Independent Study (12 students total)
- BIO 498 Biological Senior Seminar – (5)
- BIO 463 Conservation Biology (Lecture & lab) – (2)
- BIO 371 Evolution (Lecture & lab) – (3)
- BIO 261 Ecology & Field Biology (Lecture & lab) – (3)
- BIO 182 Principles of Biology II (Lecture & lab) – (3)

Louisiana State University

- Introduction to Biology – (6)
- Coevolution – (1)

Professional Service:

Panelist:

- NSF: 2006, 2008 (twice), 2010, 2012, 2013, 2015, 2021, 2022
- USAID PEER: 2016

Editorships:

- Academic Editor, PLoS ONE
- Guest Editor: Northeastern Naturalist

Ad hoc Peer Reviews:

Granting Agencies: Regular reviewer for NSF; also California Department of Food and Agriculture, Civil Research Development Fund – RFBR, Israel Science Foundation, Louisiana Agricultural Experiment Station Hatch Project, National Academy of Sciences/PEER Program, National Fish & Wildlife Federation, NERC (United Kingdom), USDA, US Civilian Research & Development Foundation.

Journals: *African Entomology, Animal Conservation, Annals Entomological Society of*

America, Biodiversitas, Biodiversity and Conservation, Biological Conservation, Canadian J. of Zoology, Coleopterists' Bulletin, Conservation Biology, Conservation Genetics, Ecological Applications, Ecology, Ecology Letters, Entomologia Experimentalis et Applicata, Environmental Entomology, Environmental Monitoring & Assessment, Evolution, Genetica, Great Lakes Entomologist, Heredity, Insect Conservation & Diversity, Insect Science, Insect Conservation & Diversity, International J. of Biodiversity, J. of Economic Entomology, J. of Tropical Ecology, Molecular Ecology, Oecologia, Oikos, PLoS ONE, Proc. Entomological Society of Washington, Sida, Trends in Ecology & Evolution, Wetlands.

Books: *Ecology*, D. B. Botkin, Prentice Hall; *Butterflies of West Africa*, published in Bulletin of the Entomological Society of Canada; *Butterflies: Ecology and Evolution Taking Flight*, published in Quarterly Review of Biology; *Genes in the Environment*, published in Quarterly Review of Biology; *Swallowtails of the Americas*, published in Quarterly Review of Biology.

NSF PO Outreach Sessions:

As leader, Society for the Study of Evolution (2017).

As leader/organizer, XXV International Congress - Entomological Society of America (2016)

Session Chair:

Entomological Society of America (2012)

Entomological Society of America (2010)

Ecological Society of America (2012)

Entomological Society of America (2009)

Ecological Society of America (2006)

Student Session Judge:

Society for the Study of Evolution (2017)

Entomological Society of America (2010)

Ecological Society of America (2003)

Entomological Society of America (2000)

Invited Speaker: Symposium on Environmental Racism – The College of New Jersey, African American Studies Department (2002)

Symposium Organizer: The College of New Jersey, Community Learning Day, Political/social aspects of environmental sustainability (2001)

Graduate Student Symposium Organizer: North Central Branch-Entomological Society of America, Ethical issues in Entomology (1990)

Departmental/University Service:

- Member, Faculty Search Committee (2021-22)
- Member, Department Head Search Committee (2020-21)
- Scholars Showcase (2020, 2022, 2023)
- Biology Seminar Chair (2011-spring 2105, spring 2018-Fall 2020)
- Chair, Faculty Search Committee (2018-2019)
- Member, Department Head Search Committees (2011-12, 2012-13)
- Chair, Southeastern Louisiana Ecology and Evolutionary Biology Group (SLEEB) Eminent Speaker Series (2010)
- Graduate Applicant Screening Committee (2009-2019)
- Vision Committee (2007-present)
- Space Committee (2006-present)
- Curriculum Committee (2006-present)
- College of Science and Technology, President's Award of Excellence Committee (2006-2013)

- Science and Technology Award for Research (STAR) Committee (2006-2013)

Community Outreach:

- Region VIII Science Fair Judge (2005-2014, 2017)
- Public Seminar, Science on Tap Series (2014) – on insects and their ecological importance
- WHMD radio interview (2014) – on insects and their ecological importance
- Southeastern’s TV Channel, Backyard Wonders show – filmed segment on insects as ecological indicators of ecosystem health (2012)
- The Nature Conservancy (2009), longleaf pine savanna restoration
- Public Seminar, Christwood Retirement Center (2009) – Ghana, fragmented forests, butterflies

Media Coverage:

- A University release on the native bee project was picked up by the Associated Press and appeared in local, regional, and national newspapers, and on regional newscasts (2015)
- Interviewed by the Hammond Daily Star and the Lion’s Roar (Southeastern’s student newspaper) for stories on the native bee project (2015)
- Interviewed by MIT SCOPE Correspondent, Leslie Behr, for essay on Sacred Conservation published in *SCOPE, Student Publication of the Graduate Program in Science Writing at MIT* (2013)

Field Experience:

Domestically, I have extensive field experience in Florida, Georgia, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, and Pennsylvania. My international field experiences include two weeks in Belize on a biodiversity survey project of beetles at Rio Bravo Conservation Area (with C. E. Carlton), ten days in South Africa collecting and inventorying butterflies, and a full year of on-the-ground field experience in Ghana in conjunction with my research of butterfly communities in transformed landscapes.

Professional Affiliations:

Ecological Society of America
Entomological Society of America
Society for Conservation Biology
Society for the Study of Evolution

Personal History and Interests:

I was born in New York, but view the mid-Atlantic region as home, having moved with my family to five different states in the region before the age of 17. Five additional states and four repeat states were added to my interstate moves list as a consequence of career moves. I embarked on my professional studies as a single parent, six years post high school graduation. Parental responsibilities caused me to put my professional goals temporarily on hold the two years following completion of my doctoral program. Professionally, I seek opportunities that are challenging; foster creativity and critical thinking; and promote and value independence, collaboration, and transfer of knowledge. I also try to apply my professional expertise, in part, towards efforts to address socioeconomic challenges that underlie environmental degradation and ecologically unsustainable practices. These goals, coupled with my love of adventure and discovery, explain how I came to be studying insect communities in Africa and the threatened and/or degraded ecosystems of Louisiana.

I jog regularly and have run many half marathons; like to attend art exhibit openings and to explore both natural and unnatural (e.g., midtown Manhattan) settings with friends and family; volunteer on educational, environmental, and social issues; listen to music of all types from Grunge to African High Life to Mozart; and think New Orleans is one of the coolest cities ever.

References (available upon request)