

Annette Aiello

Address: Smithsonian Tropical Research Institute, Box 0843-030, Balboa, Ancon, Panama
Phone: Office: ++ (507) 212-8022; cell: ++ (507) 6644-2323
Email: aielloa@si.edu **Born:** New York City, New York, USA

EDUCATION

- 1975–1978 **Harvard University Graduate School of Arts and Sciences**
Ph.D. in Biology
Thesis title: A Re-examination of *Portlandia* (Rubiaceae) and Associated Taxa
Thesis advisor: Dr. Richard A. Howard, director of the Arnold Arboretum
- 1972–1975 **Harvard University Graduate School of Arts and Sciences**
M.A. in Biology
- 1968–1972 **Brooklyn College, Brooklyn, New York**
B.A. Biology, with minor in music, *magna cum laude*
- 1967 **Germain School of Photography, New York**
Certificate, with honors, in Commercial Black & White Photography,
- 1959–1961 **Juilliard School of Music, Extension Division, New York**
Basic courses in music, and private lessons in piano and composition

HONORS, AWARDS & SCHOLARSHIPS

- 1982–83 National Geographic Society Grant No. 2444-82
1972–77 Tuition Scholarship, Harvard University
1972 Honors of the Biology Department, Brooklyn College
1972 Sigma Xi, Brooklyn College
1972 Alpha Sigma Lambda, Brooklyn College
1972 Kappa Phi Award for Biology, Brooklyn College
1972 Lowenstein Award for Chemistry, Brooklyn College

AFFILIATIONS & EDITORIAL SERVICE

Affiliations:

- 2001 Association for Tropical Lepidoptera, life member (2005)
1987 Coleopterists Society
1992 New York Entomological Society (1992)
1994 North American Butterfly Association, life member (1994)
1991 Society for Research on the Lepidoptera, life member (1991)
1990 Lepidopterists Society, life member (1995)
1976 Cambridge Entomological Club, life member (1976)
1972 Sigma Xi, life member (2000)
1966 Connecticut Botanical Society, life member (2006)

Ad-hoc reviewer for:

Journal of the Lepidopterists Society
Journal of Research on the Lepidoptera

Board Membership:

2010–pres. Journal of Research on the Lepidoptera, board of editors
1998–2000 Biotropica Subject Editor
1998–2000 Xerces Society DeWind Fund Award Committee

RESEARCH EXPERIENCE

1976–2011 Smithsonian Tropical Research Institute
Thirty six years of research on Panamanian lepidopteran life histories, and behavior and defences in larvae and pupae.

1975–1978 Harvard University, Arnold Arboretum
PhD research: Revision of *Portlandia* (Rubiaceae) and Associated Taxa
Field research in Mexico and Jamaica, and herbarium studies at the Harvard University Herbaria, including specimens on loan from 40 Herbaria around the World.

1974–1975 Harvard University, Arnold Arboretum
Laboratory Assistant to Dr. R.A. Howard

1972–1973 For a Private Company
Prepared environmental impact studies, including plant identifications, habitat descriptions, and assessment of environmental value, for a private company.

PUBLICATIONS

1976. Silberglied, R. E., and **A. Aiello**. Defensive adaptations of some Neotropical long-horned beetles (Coleoptera: Cerambycidae): antennal spines, tergiversation, and double mimicry. *Psyche*, 83(3–4): 256–262.
1978. Aiello, A., and R. E. Silberglied. "Orange" bands, a simple recessive in *Anartia fatima* (Nymphalidae). *Journal of the Lepidopterists' Society*, 32(2): 135–137.
1979. Aiello, A. A reexamination of *Portlandia* (Rubiaceae) and associated taxa. *Journal of the Arnold Arboretum*, 60(1): 38–126.
1978. Aiello, A., and R. E. Silberglied. Life history of *Dynastor darius* (Lepidoptera: Nymphalidae: Brassoliniinae) in Panama. *Psyche*, 85(4): 331–345.
1980. Silberglied, R. E., and **A. Aiello**. Camouflage by integumentary wetting in bark bugs. *Science*, 207(4432): 773–775.
1979. Aiello, A. Life history and behavior of the case-bearer *Pheroeca allutella* (Lepidoptera: Tineidae). *Psyche*, 86(2-3): 125–136.
1979. Silberglied, R. E., **A. Aiello**, and G. Lamas. Neotropical butterflies of the genus *Anartia*: systematics, life histories and general biology (Lepidoptera: Nymphalidae). *Psyche*, 86(2-3): 219–260.
1980. Aiello, A. *Systropus columbianus* (Diptera: Bombyliidae) reared from larva of limacodid moth. *Entomological News*, 91(3): 89–91.
1980. Silberglied, R. E., **A. Aiello**, and D.M. Windsor. Disruptive coloration in butterflies: lack of support in *Anartia fatima*. *Science*, 209(4456): 617–619.
1980. **Aiello, A.** Life history of *Dysodia sica* (Lepidoptera: Thyrididae) in Panama. *Psyche*, 87(1-2): 121–130.
1980. **Aiello, A.** Life history of *Dismorphia amphiona beroe* (Lepidoptera: Pieridae: Dismorphiinae) in Panama. *Psyche*, 87(3-4): 171–175.

1981. **Aiello, A.** Life history of *Antaeotricha* sp. (Lepidoptera: Oecophoridae: Stenomatinae) in Panama. *Psyche*, 88(1-2): 163–168.
1982. Lamas, G., R. E. Silberglied, and **A. Aiello**. *Papilio fatima* Fabricius, 1793 (Insecta, Lepidoptera): request for conservation under the plenary powers Z.N.(S.) 2351. *Bulletin of Zoological Nomenclature*, 39(1): 61–63.
1982. Robbins, R., and **A. Aiello**. Foodplant and oviposition records for Panamanian Lycaenidae and Riodinidae. *Journal of the Lepidopterists' Society*, 36(2): 65–75.
1983. Putz, F., P. Coley, K. Lu, A. Montalvo, and **A. Aiello**. Uprooting and snapping of trees: structural determinants and ecological consequences. *Canadian Journal of Forest Research*, 13(5): 1011–1020.
1984. **Aiello, A.** *Adelpha* (Lepidoptera: Nymphalidae): deception on the wing. *Psyche*, 91(1-2): 1–45.
1985. **Aiello, A.** Sloth hair: unanswered questions. Pages 213–218. In: *The Evolution and Ecology of Armadillos, Sloths, and Vermilinguas*. Edited by G. Gene Montgomery. Smithsonian Institution Press. Washington, D.C. 451 pp.
1986. **Aiello, A.**, and G. Vogt. *Tachygonidius dasypus* (Coleoptera: Curculionidae) observations on an unusual tropical weevil. *Koninklijke Nederlandse Akademie van Wetenschappen. Entomology. Proceedings C*, 89(2): 117–120.
1987. **Aiello, A.** *Genuchinus muzo* Krikken (Coleoptera: Scarabaeidae) larvae reared from a bird's nest in Panama. *Coleopterists Bulletin*, 41(3): 259–262.
1986. **Aiello, Annette**, and A. Borhidi. Two new species of the genus *Isidorea* A. Rich. (Rubiaceae) from Hispaniola. *Acta Botanica Hungarica*, 32 (1-4): 221–224.
- 1987(88). **Aiello, A.**, and K. S. Brown, Jr. Mimicry by illusion in a sexually dimorphic, day-flying moth, *Dysschema jansonis* (Lepidoptera: Arctiidae: Pericopinae). *Journal of Research on the Lepidoptera*, 26(1-4): 173–176.
1990. Scoble, M. J., and **A. Aiello**. Moth-like butterflies (Hedylidae: Lepidoptera): a summary, with comments on the egg. *Journal of Natural History*, 24(1): 159–164.
1991. **Aiello, A.** *Adelpha ixia leucas*: Immature stages, and position within *Adelpha* (Nymphalidae). *Journal of the Lepidopterist's Society*, 45(3): 181–187.
1992. Quintero Arias, Diomedes, and **Annette Aiello** (eds.). *Insects of Panama and Mesoamerica: Selected Studies*. Oxford University Press. xxii + 692 pp. [ISBN 0-19-854018-3]
1992. **Aiello, A.** Nocturnal butterflies in Panama, Hedylidae (Lepidoptera: Rhopalocera). Pp. 549–553, In: Diomedes Quintero Arias and Annette Aiello (eds.), *Insects of Panama and Mesoamerica: Selected Studies*. Oxford University Press.
1992. **Aiello, A.** Dry season strategies of two Panamanian butterfly species, *Anartia fatima* (Nymphalinae) and *Pierella luna luna* (Satyrinae) (Lepidoptera: Nymphalidae). Pp. 573–575, In: Diomedes Quintero Arias and Annette Aiello (eds.), *Insects of Panama and Mesoamerica: Selected Studies*. Oxford University Press.
1993. **Aiello, A.** How to prepare publishable reports of lepidopteran life histories. *News of the Lepidopterists' Society*, 1993(1): 6–10.
1993. **Aiello, A.**, and Ricardo Cortez. A very good rearing flask. *News of the Lepidopterists' Society*, 1993(2): 58.
1994. **Aiello, A.** "Flores silvestres del Parque Nacional Soberanía." Suplemento "Naturaleza Tropical" No.3: 1–12, *La Prensa*, Jun 22.
1995. **Aiello, A.** "Los insectos de Panamá." Suplemento "Naturaleza Tropical" No.9: 1–12, *La Prensa*, Jan 27.
1995. Harms, K.E., and **A. Aiello**. Seed-boring by tropical clearwing moths (Sesiidae): Aberrant behavior or widespread habit? *Journal of the Lepidopterists' Society*, 49(1): 43–48.
1995. **Aiello, A.** [NABA Correspondence]. *The Angelwing* 2(2): 3.
1996. **Aiello, A.**, and H.P. Stockwell. The golden-cage weevil, *Isorhinus undatus* (Champion) (Coleoptera: Curculionidae). *Coleopterists Bulletin*, 50(2): 192–194.

1996. Otero, L.D., and A. Aiello. Descriptions of the immature stages of *Adelpha alala* (Nymphalidae). *Journal of the Lepidopterists' Society*, 50(4): 329–336.
1997. Davies, N., A. Aiello, J. Mallet, A. Pomiankowski, and R.E. Silberglied. Speciation in two Neotropical butterflies: extending Haldane's rule. *Proceedings of the Royal Society of London. B.*, 264: 845–851.
1997. Aiello, A., and M.A. Balcázar. The immature stages of *Oxytenis modestia* (Cramer), with comments on the mature larvae of *Asthenidia* and *Homoeopteryx* (Lepidoptera: Saturniidae: Oxyteninae). *Journal of the Lepidopterists' Society*, 51(2): 105–118.
- 1996 (1997). Aiello, A. and P. Jolivet. Myrmecophily in Keroplatidae (Diptera: Sciaroidea). *Journal of the New York Entomological Society*, 104(3-4): 226–230.
1997. Vencl, F. V., and A. Aiello. A new species of leaf-mining *Oulema* from Panama (Coleoptera: Chrysomelidae: Criocerinae). *Journal of the New York Entomological Society*, 105(1/2): 40–44.
1999. Pogue, M. and A. Aiello. Description of the immature stages of three species of *Eulepidotis* Guenée (Lepidoptera: Noctuidae) with notes on their natural history. *Proceedings of the Entomological Society of Washington*, 101(2): 300–311.
- 1999 (2000). Penz, C.M., A. Aiello, and Srygley, R.B. Descriptions of early stages of *Caligo illioneus oberon* Butler, and *C. idomeneus* (L.) from the lowland rainforest of Panama (Nymphalidae, Brassolinae), with remarks on larval food plants for the subfamily. *Journal of the Lepidopterists' Society*, 1999, 53(4): 142–152.
2001. Freitas, A.V., K.S. Brown, Jr., and A. Aiello. Biology of *Adelpha mythra* feeding on Asteraceae, a novel plant family for the Neotropical Limenitidinae (Nymphalidae), and new data on *Adelpha* "Species-Group VII." *Journal of the Lepidopterists' Society*, 54(3): 97–100.
2001. Aiello, Annette. Las orugas de Panamá. Pg. 118–125, In: Stanley Heckadon-Moreno (ed.), *Panamá: Puente Biológico: Las Charlas Smithsonian del Mes: 1996–1999*. Instituto Smithsonian de Investigaciones Tropicales, Balboa, Republica de Panamá. xx + 233 pp. [ISBN 9962-614-01-5]
2002. Dasmahapatra, Kanchon, Michael J. Blum, Annette Aiello, Stuart Hackwell, Neil Davies, Eldridge P. Bermingham, James Mallet. Inferences from a rapidly moving hybrid zone. *Evolution*, 56(4): 741–753.
2003. Aiello, A. and A. Solis. Defense mechanisms in Pyralidae & Choreutidae: fecal stalactites and escape holes, with remarks about cocoons, camouflage and aposematism. *Journal of the Lepidopterists' Society*, 57(3):168–175.
2004. Aiello, A. and V. Becker. Display of the "peacock moth," *Brenthia* spp. (Choreutidae: Brenthiinae). *Journal of the Lepidopterists' Society*, 58(1):55–58.
2004. Van Bael, Sunshine A., Annette Aiello, Anayansi Valderrama, Enrique Medianero, Mirna Samaniego, and S. Joseph Wright. General herbivore outbreak following an El Niño-related drought in a lowland Panamanian forest. *Journal of Tropical Ecology*, 20(6):625–633.
2004. Yack, Jayne E., Tiffany A. Timbers, William E. Conner, Annette Aiello, Frank C. Schroeder. Defensive flocculent emissions in a tiger moth, *Homoeocera stictosoma* Arctiidae: Arctiinae). *Journal of the Lepidopterists' Society*, 58(3):173–177.
2005. Aiello, Annette, Vicente Rodríguez Gracia, Vitor Osmar Becker, & Olga of Greece. *Mariposas (Lepidoptera) de Bahía Honda e Isla de Canales de Tierra (Veraguas, Panamá)*. Moths and butterflies (Lepidoptera) from Bahía Honda and Canales de Tierra Island (Veraguas, Panama). Pp. 493–570 (Chapter 9), In: Castroviejo, Santiago & Alicia Ibáñez (eds), *Estudios sobre la biodiversidad de la región de Bahía Honda (Veraguas, Panamá)*. Studies on the Biodiversity of the Bahía Honda region (Veraguas, Panama). Biblioteca de Ciencias 20. Consejo Superior de Investigaciones Científicas. Instituto de España. Real Academia de Ciencias Exactas, Físicas y Naturales. Madrid. 835 pp.
2006. Aiello, Annette. *Arthropods of Tropical Forests: Spatio-temporal Dynamics and Resource Use in the Canopy*, by Basset, Yves, Vojtech Novotny, Scott E. Miller, and Roger L. Kitching (eds). [Book Review]. *European Journal of Entomology*, 103:253–254.
2006. Aiello, Annette. *Adelpha erotia erotia* form "lerna" (Nymphalidae): exploring a corner of the puzzle. *Journal of the Lepidopterists' Society*, 60(4): 181–188.

- 2007. Aiello, A.** y Keith Brown. Mimetismo por ilusión en una mariposa nocturna de vuelo diurno y de dimorfismo sexual, *Dysschema jansonis* (Lepidoptera: Arctiidae: Pericopinae), pages 105–108 in Leigh, Egbert Giles, Edward Allen Herre, Jeremy B.C. Jackson, Fernando Santos-Granero (eds). *Ecología y Evolución en los Trópicos*. Primera edición 2006. Panamá, Editora Nova Art, S.A.
- 2007.** Davies, Neil, **Annette Aiello**, James Mallet, Andrew Pomiankowski, and Robert Elliot Silberglied. La especiación en dos mariposas neotropicales: extensión de la regla de Haldane, pages 413–421 in Leigh, Egbert Giles, Edward Allen Herre, Jeremy B.C. Jackson, Fernando Santos-Granero (eds). *Ecología y Evolución en los Trópicos*. Primera edición 2006. Panamá, Editora Nova Art, S.A.
- 2006. Aiello, A.**, and F. V. Vencl. One plant, two herbivore strategies: *Lema insularis* (Chrysomelidae: Criocerinae) and *Acorduloceridea compressicornis* (Pergidae: Acordulocerinae) on *Dioscorea mexicana* (Dioscoreaceae), with observations on a *Lema* co-mimic. *Journal of the New York Entomological Society* 114(3): 144–156.
- 2008.** Davis, Donald, Diomedes Quintero A., Roberto Cambra T., & **Annette Aiello**. "Biology of a new Panamanian bagworm moth (Lepidoptera: Psychidae) with predatory larvae, and eggs individually wrapped in setal cases. *Annals of the Entomological Society of America* 101(4): 689–702.
- 2009.** Helson, J.E., T.L. Capson, T. Johns, **A. Aiello**, & D.M. Windsor. Ecologically-guided bioprospecting: the use of aposematic insects as indicators of possible activity against diseases in tropical rain forest plants. *Frontiers in Ecology and the Environment* 2009; 7(3): 130–134.
- 2010.** Emilio Guerrieri, Martinus E. Huigens, Catalina Estrada, Jozef B. Woelke, Marjolein De Rijk, Nina E. Fatouros, **Annette Aiello**, & John S. Noyes, "*Ooencyrtus marcelloi* sp. nov. (Hymenoptera: Encyrtidae), an egg parasitoid of Heliconiini (Lepidoptera: Nymphalidae: Heliconiinae) on passion vines (Malpighiales: Passifloraceae) in Central America." *Journal of Natural History* 44(1-2):81–87.
- 2003 (2010).** Robert K. Robbins, **Annette Aiello**, Julie Feinstein, Amy Berkov, Astrid Caldas, Robert C. Busby, & Marcelo Duarte. "A tale of two species: detritivory, parapatry, and sexual dimorphism in *Lamprospilus collucia* and *L. orchidia* (Lycaenidae: Theclinae: Eumaeini)." *Journal of Research on the Lepidoptera* 42:64–73.
- 2010.** Milla Suutari, Markus Majaneva, David P. Fewer, Bryson Voirin, **Annette Aiello**, Thomas Friedl, Adriano G. Chiarello and Jaanika Blomster, "Molecular evidence for a diverse green algal community growing in the hair of sloths and a specific association with *Trichophilus welckeri* (Chlorophyta, Ulvophyceae)." *BMC Evolutionary Biology* 10:86 [12 pages].
- 2010.** Vigneron, Jean Pol, Priscilla Simonis, **Annette Aiello**, Annick Bay, Donald M. Windsor, Jean-Francois Colomer, and Marie Rassart. "Reverse color sequence in the diffraction of white light by the wing of the male butterfly *Pierella luna* (Nymphalidae: Satyrinae)." *Physical Review E* 82, 021903 [8 pages].
- 2010.** **Aiello, Annette**, Edwin Domínguez Núñez & Henry P. Stockwell. "Nothing is perfect: Biodegradable Packing Material as Food and Transportation for a Museum Pest, *Lasioderma serricorne* (Coleoptera: Anobiidae)." *Coleopterists Bulletin*, 64(3):256–257.
- 2011.** Connahs, Heidi, **Annette Aiello**, Sunshine Van Bael, & Genoveva Rodríguez Castañeda. "Caterpillar abundance and parasitism in a seasonally dry versus wet tropical forest of Panama." *Journal of Tropical Ecology*, 27(1):51–58.
- 2011.** Aiello, Annette. "Reflections on viewing Lepidoptera specimens: A mirror device." *News of the Lepidopterists' Society*, 53(4):111.
- 2013.** Domínguez Núñez, Edwin & **Annette Aiello**, "Leaf-hoppers (Homoptera: Cicadellidae) that probe human skin: a review of the world literature and nineteen new records, from Panama." *Terrestrial Arthropod Reviews* 6(2013):201–225.
- 2015.** Annette Aiello. "*Oncideres* Serville Key to Too Few: 34 Species Lost." *The Coleopterists Bulletin* 69(1):60.
- 2015.** Seymoure & Aiello, "Keeping the band together: evidence for false boundary disruptive coloration in a butterfly." *Jour Evol Biology*, 28(2015):1618–1624. doi: 10.1111/jeb. 12681

- 2015.** Yves Basset, Héctor Barrios, Simon Segar, Robert B. Srygley, Annette Aiello, Andrew D. Warren, Francisco Delgado, James Coronado, Jorge Lezcano, Stephany Arizala, Marleny Rivera, Filonila Perez, Ricardo Bobadilla, Yacksecari Lopez, José Alejandro Ramirez, "The Butterflies of Barro Colorado Island, Panama: Local Extinction since the 1930s." *PLoS ONE* 10(8): e0136623.
doi:10.1371/journal.pone.0136623
- 2015.** Raudsepp-Hearne, Ciara, Annette Aiello, Ahmed Hussein, Maria V. Heller, Timothy Johns, and Todd L. Capson. "Differential Sequestration of a Cytotoxic Vismione from the Host Plant *Vismia baccifera* by *Periphoba arcae* and *Pyrrhopyge thericles*." *Journal of Chemical Ecology* 41(9):816—821 DOI:10.1007/s10886-015-0614-6
- 2015.** Aiello, Annette. Tropical caterpillar addiction. In: Dyer, Lee A. and Forister, Matthew L., *The lives of lepidopterists*. Springer International Publishing, pp.91-102.
- 2016.** Aiello, Saltonstall, & Young. "*Brachyplatys vahlii* (Fabricius, 1787), an introduced bug from Asia: first report in the Western Hemisphere (Hemiptera: Plataspididae: Brachyplatidinae)." *BioInvasions Record* 5(1):7–12.
- 2016.** Brashears, Jake, Annette Aiello, and Brett Seymoure. "Cool bands: Wing bands decrease rate of heating, but not equilibrium temperature in *Anartia fatima*." *Journal of Thermal Biology* 56:100-108.

In Press:

Aiello, Annette and Victor Young. "*Hylesia umbrata* (Saturniidae: Hemileucinae): A Mystery." Accepted for publication in *Journal of the Lepidopterists' Society*, 14 June 2017.

Popular Science:

• More than 100 reviews of botanical and entomological works, published in "The Book Review" section of *Library Journal*, 1972–2012.

TALKS & PRESENTATIONS

- 2013** (31 Jul). "Common Butterflies of Panama: A Photo Guide." Training for BCI tour guides, STRI, Tupper.
- 2012** (4 Dec). "STRI All Panama Insect Taxonomic Database." *I Encuentro de Entomólogos de Panamá, Universidad de Panamá.*
- 2012** (8 Mar). "*Adelpha* butterflies: Piecing a corner of the puzzle." *SEPAN (Sociedad de Entomología de Panamá).*
- 2007** (3 May). "*Pierella luna* (Nymphalidae: Satyridae): Un romance de varias dimensiones." Teacher training course.
- 2007** (28 Jun). "*Pierella luna* (Nymphalidae: Satyridae): Males are from Lineland; Females are from Flatland." STRI, Science Symposium.
- 2007** (3 May). "*Pierella luna* (Nymphalidae: Satyridae): Males are from Lineland; Females are from Flatland." *II ELEN: II Encontro sobre Lepidoptera Neotropicais*, STRI, Panama.
- 2005** (19 Apr). "*Adelpha mesentina* group (Nymphalidae): Piecing a Corner of the Puzzle: with Comments on Larval Mimicry." *I ELEN: I Encontro sobre Lepidoptera Neotropicais*, Brasil, Campinas.
- 2003** (24 Jun). "Mini-microlepidopteran life histories: We're still at the 'Oh-my stage.'" Costa Rica, Santa Rosa National Parque, Caterpillar Biodiversity Workshop.
- 2002** (10 Jan). Panama Audubon Club, Curundu, Panama. "El mundo secreto de las mariposas panameñas."
- 2001** (3 May). "Panamanian caterpillars I have known." Connecticut Butterfly Association, Agricultural Research Station, New Haven, Connecticut.

- 2001** (3 May). "The World of Panamanian insects." Connecticut Butterfly Association, Agricultural Research Station, New Haven, Connecticut.
- 1999** (13 Aug). Un método visual para la enseñanza de los 15 grupos de insectos más comunes. Congreso Nacional de Ciencia y Tecnología.
- 1999** (13 Aug). Un método visual para la enseñanza de los 15 grupos de insectos más comunes. Congreso Nacional de Ciencia y Tecnología.
- 1997** (20 Oct). Caterpillar polymorphism. University of Panama.
- 1997** (11, 12 Jul). The Lepidopterists' Society, 50th Anniversary Meeting, Yale University. WORKSHOP: "Rearing Tropical Lepidoptera."
- 1996** (30 Oct). Parque Natural Metropolitano, Curundu, Panama. Charla Smithsonian del Mes, "Las Orugas de Panamá."
- 1993** (11 Feb). Panama Audubon Club, Balboa, Panama. "Insects of Panama."
- 1990** (14 Jun). Panama Audubon Club, Balboa, Panama. "Lives of Tropical Insects."
- 1984** (13 Sep). Panama Audubon Club, Balboa, Panama. "*Adelpha* Butterflies: Deception on the Wing."
- 1984** (8 May). Smithsonian Tropical Research Institute, Ancon, Republic of Panama. "*Adelpha* Butterflies: Deception on the Wing."
- 1983** (13 Jan). Panama Audubon Club, Balboa, Panama. "Panamanian Caterpillars I Have Known."
- 1981** (10 Nov). Smithsonian Tropical Research Institute, Ancon, Republic of Panama. "The Diverse World of Panamanian Caterpillars."
- 1981** (17 Apr). Biological Laboratories, Harvard University, Cambridge, Massachusetts. "The Diverse World of Panamanian Lepidoptera Caterpillars."
- 1980** (14 Oct). Cambridge Entomological Club, Biological Laboratories, Harvard University. "Behavior of Daddy-long-legs in Panama."
- 1980** (15 Aug). Smithsonian Tropical Research Institute, Barro Colorado Island, Panama. "The Diverse World of Panamanian Caterpillars."
- 1980** (14 Aug). Panama Audubon Club, Balboa, Panama. "The Diverse World of Panamanian Caterpillars."
- 1980** (8 Jan). Cambridge Entomological Club, Biological Laboratories, Harvard University. "Caterpillars I Have Known: The Diverse World of Panamanian Lepidopteran Larvae."
- 1978** (14 Nov). Cambridge Entomological Club, Biological Laboratories, Harvard University. "The Case of the Bathroom Moth."
- 1978** (14 Nov). Cambridge Entomological Club, Biological Laboratories, Harvard University. "The Case of the Bathroom Moth."
- 1977** (24 Feb). Harvard University Herbaria. Seminar in Botany. "*Portlandia* (Rubiaceae): Unravelling of a Catch-all Genus."

TEACHING & OUTREACH

Teaching

- Training for BCI tour guides:**
- 2013 •100 Common Butterflies of Panama: A Photo Guide
- Teacher training**
- 2007 •*Pierella luna* (Nymphalidae: Satyridae): Un romance de varias dimensiones
- STRI: Programa de Capacitación para Guías de Turismos Patromonial:** Instructor
- 1999 •Introduction to Insects of Panama
- Eco-Tours, Panama:**
- 1991–1993 •Bilingual Guide Course (25 hours), "Insects of Panama"
- 1993–1994 •"Roads" Scholar Tourist Program
- Panama Canal College Summer School:** Instructor
- 1982 •General Botany (Biology 1040), 7 weeks

- Harvard University Extension Division: Instructor**
- 1980–1981 • Instructor in Biology of Insects (Biology E-115c)
- Harvard University Extension Division: Teaching Assistant**
- 1974 • Introductory Botany
- 1975 • Introductory Genetics
- Harvard University: Teaching Assistant**
- 1972–1973 • Introductory Biology (Natural Sciences 5) (George Wald *et al.*)
- 1973–1974 • Invertebrate Biology (Biology 10a) (Herbert Levi)
- 1974–1977 • Biology of Arthropods (Biology 127a) (Robert Silberglied)
- 1974–1975 • Summer School Botany (Biology S1a)

Outreach

- 2007 • Organized and hosted an international Lepidoptera conference, *Encontro sobre Lepidoptera Neotropicais (II ELEN, 2007)* at STRI, Panama.
- 1998–pres. • Provide insect identifications for the public, local newspapers, STRI, and others.
- 1997–1998 • Designed and constructed Insect Exhibit at STRI Tupper Center Exhibit Hall: "Los Insectos: Amigos y Enemigos."
- 1994–1995 • Wrote two supplements (nos 3 and 9) for the local newspaper, *La Prensa*, one on wildflowers, the other on insects.
- 1992 • Wrote text for Wildflower Exhibit at STRI Tupper Center Exhibit Hall: "Flores Silvestres del Parque Nacional Soberanía,"
- 1992 • Prepared "Información para Guías de Exhibiciones," providing botanical background for wildflower exhibit guides.

ADMINISTRATION & ORGANISATION

- 2007–pres. Supervise an assistant who is digitizing the insect collections and doing collection curatorial work.
- 1984–pres. Manager of STRI Insect Collections.
- 1974–1977 Insectary Manager (for Dr. R.E. Silberglied), Biological Laboratories, Harvard University.

OTHER INTERESTS

- I am interested in the learning process, and, faced with the challenge of teaching the basic insect orders to prospective guides who did not read or write in any language, I devised a visual method of teaching that has proven successful with students of all literacy levels.
- Classical music.
- Natural History Photography.