

## CURRICULUM VITAE

### LUCINDA A. McDADE

Judith B. Friend Director of Research and Professor of Botany  
Rancho Santa Ana Botanic Garden and Claremont Graduate University  
1500 N. College Avenue  
Claremont CA 91711, USA  
Tel. 909-625-8767 ext. 234; FAX 909-626-7670  
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#### EDUCATION

Duke University, Durham, NC  
Degree: Ph.D., September, 1980; Major: Botany; Minor: Zoology  
Dissertation Title: Systematics and reproductive biology of the Central American species of the  
*Aphelandra pulcherrima* complex (Acanthaceae)  
Newcomb College of Tulane University, New Orleans, LA  
Degree: B.S., May 1975; Major: Biology

#### PROFESSIONAL HONORS

B.S. Degree, Magna cum laude (1975)  
Phi Beta Kappa (1975)  
James B. Duke Graduate Fellow, Duke University (1975-1979)  
Sigma Xi (1980)  
Nominated for University of Arizona Distinguished Professor (1994)  
President, Association for Tropical Biology (1995)  
Melinda F. Denton Memorial Lecturer, University of Washington (1998)  
President, American Society of Plant Taxonomists (2003-2004)

#### POSITIONS

Judith B. Friend Director of Research, RSABG, and Professor of Botany, Claremont Graduate University,  
Claremont, CA, Fall 2006 to present.  
Associate Curator and Chair of Botany, Academy of Natural Sciences, Philadelphia, 2001 - 2006  
Adjunct Associate Professor, University of Pennsylvania, 2001-2006.  
Associate Professor and Curator of the Herbarium, Departments of Ecology and Evolutionary  
Biology, and Plant Sciences, University of Arizona, 1992-2000 (promotion with tenure  
earned 1998).  
Adjunct Assistant Professor, Duke University, 1988-1994.  
Visiting Researcher, University of the Witwatersrand, Johannesburg, South Africa, 2000.  
Scientific Coordinator, Organization for Tropical Studies, Durham, NC, 1985-1992.  
Instructor, Department of Botany, Duke University, 1983-1985.  
Postdoctoral Fellow, Smithsonian Tropical Research Institute, Apartado 2072, Balboa, Panama,  
1980-1981.

**PUBLICATIONS** (peer reviewed; single authored by L. A. McDade unless noted; I am co-author on my students' publications only when the work is fully collaborative)

1973. Simmons, D. C. and L. A. McDade. Contribution on the spawning of *Auxis* spp. (Pisces, Scombridae) in the Atlantic Ocean. Fishery Bulletin 61:321-324.

1980. McDade, L. A. and S. Kinsman. The impact of floral parasitism in two Neotropical hummingbird pollinated plant species. Evolution 34:944-958.

1982. Three new species of *Aphelandra* (Acanthaceae) from Central America. Annals Missouri Botanical Garden 69:402-411.

## Curriculum Vitae

Lucinda A. McDade, Page 2

(Publications, continued)

1982. New species of *Justicia* and *Razisea* (Acanthaceae) from Costa Rica, with taxonomic notes. *Systematic Botany* 7:489-497.
1982. McDade, L. A. and J. G. Lundberg. A new tabular and diagrammatic method for displaying artificial hybridization data, with an example from *Aphelandra* (Acanthaceae). *Systematic Botany* 7:13-25.
1982. Sherry, T. W. and L. A. McDade. Prey selection and handling in two neotropical hover gleaning birds. *Ecology* 63:1016-1028.
1983. Pollination intensity and fruit set in *Trichanthera gigantea* (Acanthaceae). *Biotropica* 15:122-124.
1983. Long-tailed hermit hummingbird visits to inflorescence color morphs of *Heliconia irrasa* (Heliconiaceae). *Condor* 85:360-364.
1984. Systematics and reproductive biology of the Central American members of the *Aphelandra pulcherrima* complex (Acanthaceae). *Annals Missouri Botanical Garden* 71:104-165.
1984. McDade, L.A. and P. Davidar. Determinants of fruit and seed set in *Pavonia dasypetala* (Malvaceae). *Oecologia* 64:61-67.
1985. Breeding systems of Central American *Aphelandra* (Acanthaceae). *American Journal of Botany* 72:1515-1521,
1986. Protandry, synchronized flowering and sequential phenotypic unisexuality in Neotropical *Pentagonia macrophylla* (Rubiaceae). *Oecologia* 68:218-223.
1986. Lundberg, J. G. and L. A. McDade. On the South American catfish *Brachyrhamdia imitator* Myers (Siluriformes, Pimelodidae), with phylogenetic evidence for a large intrafamilial lineage. *Notulae Naturae* 463:1-25.
1988. Recognition of *Aphelandra glabrata* (Acanthaceae) from Western South America, with notes on phylogenetic relationships. *Systematic Botany* 13:235-239.
1989. Lundberg, J. G. and L. A. McDade. "Chapter 3, Systematic Ichthyology," in *Methods in Fish Biology*, P. B. Moyle and C. B. Schrock (eds.), Special Publication of the American Fisheries Society.
1990. Hybrids and phylogenetic, systematics I. Patterns of character expression in hybrids and their implications for cladistic analysis. *Evolution* 44:1685-1700.
1992. Pollinator relationships, biogeography, and phylogenetics. *BioScience* 42:21-26.
1992. Hybrids and phylogenetic systematics II. The impact of hybrids on cladistic analysis. *Evolution* 46:1329-1346.
1994. McDade, L. A., K. S. Bawa, H. A. Hespenheide, G. S. Hartshorn, eds., *La Selva: Ecology and Natural History of a Tropical Rainforest*, Chicago Univ. Press, Chicago, IL.
1994. Bawa, K. S., L. A. McDade, and H. A. Hespenheide. Introduction. Pp. 3-5 in *La Selva: Ecology and Natural History of a Tropical Rainforest*, L. A. McDade, K. S. Bawa, H. A. Hespenheide, G. S. Hartshorn (eds.), Chicago Univ. Press, Chicago, IL.

## Curriculum Vitae

Lucinda A. McDade, Page 3

(Publications, continued)

1994. Bawa, K. S. and L. A. McDade. The Plant Community: Composition, Dynamics and Life History Processes--Commentary. Pp. 67-72 in *La Selva: Ecology and Natural History of a Neotropical Rain Forest*, L. A. McDade, K. S. Bawa, H. A. Hespeneide, G. S. Hartshorn (eds.), University of Chicago Press.
1994. McDade, L. A., and K. S. Bawa. Appendix 1. Patterns of research productivity 1951-1991. Pp.341-344 *in La Selva: Ecology and Natural History of a Neotropical Rain Forest*, L. A. McDade, K. S. Bawa, H. A. Hespeneide, G. S. Hartshorn (eds.), Univ. of Chicago Press.
1994. McDade, L. A. Appendix 2. Administration and governance. Pp.345-349 *in La Selva: Ecology and Natural History of a Neotropical Rain Forest*, L. A. McDade, K. S. Bawa, H. A. Hespeneide, G. S. Hartshorn (eds.), Univ. of Chicago Press.
1995. Hybridization and phylogenetics. Pp. 305-331 *in Experimental and Molecular Approaches to Plant Biosystematics*, P. C. Hoch and A. G. Stephenson, eds. Monographs in Systematic Botany, Missouri Botanical Garden Press.
1995. Daniel, T. F. and L. A. McDade. Additions to the Acanthaceae of Panama. *Annals Missouri Botanical Garden* 82:542-548.
1995. Species concepts and problems in practice: Insight from botanical monographs. *Systematic Botany* 20:606-622.
1996. Durkee, L. H. and L. A. McDade. Three new species of *Justicia* from Costa Rica. *Novon* 6:13-21.
1997. McDade, L. A. and M. D. Turner. Extrafloral nectaries in *Aphelandra*: Anatomy, development and systematic implications. *American Journal of Botany* 84:1-15.
1997. Hybrids and phylogenetic systematics III. Comparison with distance methods. *Systematic Botany* 22:669-683.
1999. McDade, L. A. and M. L. Moody. Phylogenetic relationships among Acanthaceae and their closest relatives: Evidence from noncoding chloroplast DNA sequences. *American Journal of Botany* 86:70-80.
1999. Slentz, S., A. E. Boyd, and L. A. McDade. Patterns of morphological differentiation among Madrean Sky Island populations of *Castilleja austromontana* (Scrophulariaceae). *Madroño* 46:100-111.
2000. McDade, L. A., S. E. Masta, M. L. Moody, and E. Waters. Phylogenetic relationships among Acanthaceae: Evidence from two genomes. *Systematic Botany* 25:105-120.
2000. Hybridization and phylogenetics: Special insights from morphology. Pp. 146-164 *in Morphological Data in Phylogenetic Analysis: Recent Progress and Unresolved Problems*, J. Wiens (ed.), Smithsonian Institution Press.
2000. McDade, L. A., T. Daniel, S. E. Masta, and K. M. Riley. Phylogenetic relationships among the tribe Justiciaeae (Acanthaceae): Evidence from molecular sequences, morphology, and cytology. *Annals of the Missouri Botanical Garden* 87: 435-458.
2001. Manktelow, M., L. A. McDade, B. Oxelman, C. A. Furness, and M.-J. Balkwill. The enigmatic tribe Whitfieldieae (Acanthaceae): Delimitation and phylogenetic relationships based on molecular and morphological data. *Systematic Botany* 26: 104-119.

*(Publications, continued)*

2001. Faivre, A. E. and L. A. McDade. Population level variation in the expression of heterostyly in three species of Rubiaceae: Does reciprocal placement of anthers and stigmas characterize heterostyly? *American Journal of Botany* 88: 841-853.
2001. Levin, R. A., R. A. Raguso, and L. A. McDade. Fragrance chemistry and pollinator affinities in Nyctaginaceae. *Phytochemistry* 57: 835-846.
2002. Schwarzbach, A. E. and L. A. McDade. Phylogenetic relationships of the mangrove family Avicenniaceae based on chloroplast and nuclear ribosomal DNA sequences. *Systematic Botany* 27: 84-98.
2003. Raguso, R.A., R.A. Levin, S.E. Foose, M.W. Holmberg, and L.A. McDade. Fragrance chemistry, nocturnal rhythms and pollination “syndromes” in *Nicotiana* (Solanaceae). *Phytochemistry*.63: 265-284.
2003. Levin, R. A., L. A. McDade, and R. A. Raguso. The Utility of Floral and Vegetative Fragrance for Phylogenetic Studies in two Genera of Nyctaginaceae. *Systematic Biology*.52: 334-351.
2004. McDade, L. A., and J. A. Weeks. Nectar in hummingbird-pollinated Neotropical plants I: Patterns of production and variability in twelve species. *Biotropica* 36 196-215
2004. McDade, L. A., and J. A. Weeks. Nectar in hummingbird-pollinated Neotropical plants II: Interactions with flower visitors. *Biotropica* 36: 216-230.
2005. McDade, L.A., C. A. Kiel, T. F. Daniel, and K. Vollesen. Phylogenetic relationships among Acantheae (Acanthaceae): Major Lineages Present Contrasting Patterns of Molecular Evolution and Morphological Differentiation. *Systematic Botany* 30: 834-862.
2006. Kiel, C.A., L. A. McDade, T. F. Daniel, and D. Champluvier. Phylogenetic delimitation of Isoglossinae (Acanthaceae: Justiceae) and relationships among constituent genera. *Taxon* 53: 683-694.
2007. Raguso, R. A., A. Kelber, M. Pfaff, R.A. Levin, and L. A. McDade. Floral biology of North American *Oenothera* sect. *Lavauxia*: Advertisements, rewards and extreme variation in floral depth. *Annals of the Missouri Botanical Garden* 94: 236-257.
2007. McDade, L. A. and E. A. Tripp. A synopsis of Costa Rican *Ruellia* (Acanthaceae), with descriptions of four new species. *Brittonia* 59: 199-216.
- In press. Daniel, T.F., L. A. McDade, M. Manktelow, and C. A. Kiel. The “*Tetramerium* Lineage” (Acanthaceae: Acanthoideae: Justiceae): Delimitation and Infra-lineage Relationships Based on cp and nrITS Sequence Data. *Systematic Botany*
- In press. Borg, A.J., L. A. McDade, and J. Schönenberger. Molecular phylogenetics and morphological evolution of Thunbergioideae (Acanthaceae). *Taxon*
- In press. McDade, L. A. and D. A. Clark. Floristic knowledge, identification, and the links to ecological and evolutionary research. (chapter in *The Scale of Floristics*, edited by D. Daly).
- In press. McIntosh, M.E., L.A. McDade, A.E. Boyd and P.D. Jenkins. Patterns of growth and mortality in the endangered Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii* L. Benson; Cactaceae) in southeastern Arizona. *Proceedings of the Fourth Southwestern Rare and Endangered Plant Conference, Las Cruces, NM, March 22-25, 2004.*

**WEB PUBLICATIONS**

2006. McDade, L.A. and C. A. Kiel. Acanthaceae. Tree of Life Web project.

<http://www.tolweb.org/Acanthaceae>

2005. McDade, L. A. and E. A. Tripp (with T. F. Daniel). Acanthaceae of La Selva Biological Station, Costa Rica. PDF available at: <http://www.rsabg.org/content/view/166/69> (also in review for web publication as part of the Vascular Flora of La Selva Biological Station)

**MANUSCRIPTS IN REVIEW**

**MANUSCRIPTS IN PREPARATION**

Phylogeny of Acanthaceae s.l.: Placement of enigmatic genera and Andrographideae (with T. F. Daniel and C. A. Kiel).

The evolution of fragrance and pollinator relationships in *Nicotiana* sect. *Alata* (with R.A. Raguso and R. A. Levin).

Justicieae revisited: Clades, grades and contrasting rates of molecular evolution (with C. A. Kiel and T. F. Daniel).

Acanthaceae of Costa Rica (treatment for the *Manual of the Flora of Costa Rica* project, B. E. Hammel and M. Grayum [eds.], (with L. H. Durkee and T.F. Daniel).

Plant phenological patterns in tropical dry forest with bimodal annual rainfall: Rio Mayo Basin, Northwestern Mexico (with P. D. Jenkins and M. Fishbein)

Phylogenetic patterns of character evolution in Rubiaceae (A.E. Faivre, M.J. Clauss, and LAM)

**BOOK REVIEWS**

1991. Lundberg, J. G. and L. A. McDade. Approaches to Systematics (Review of *Principles of Systematic Zoology* by E. Mayr and P. D. Ashlock). *Science* 253:458-459.

1994. McDade, L. A., M. Fishbein, and P. D. Jenkins. Review of *The Families of Flowering Plants: Interactive identification and information retrieval*, Version 1.0, by L. Watson and M. J. Dallwitz. *Quarterly Review of Biology* 69:579-580.

1998. Hedin, J., and L.A. McDade. Review of *Flórula de las Reservas Biológicas de Iquitos, Perú*. *Tropinet* 9:3.

1998. McDade, L.A. Review of *Flora of the Venezuelan Guayana, Volume 4 Caesalpiniaceae - Ericaceae*. *Tropinet* 9: 3-4.

1999. Johnson, K.J., and L.A. McDade. Review of *Horticultural Flora of South-Eastern Australia*. *Quarterly Review of Biology* 74:228-229.

2002. McDade, L.A. Biotechnology in agriculture: Good or bad? (Review of *Lords of the Harvest*, by D. Charles). *BioScience* 52: 532-534.

**GRANT SUPPORT** (In addition to the following research grants, I submitted, was awarded and administered numerous grants on behalf of the Organization for Tropical Studies during my career with that organization)

Current:

National Science Foundation. 2008-2010. REVSYS Collaborative Research: Relationships, Character Evolution, and Biogeographic Patterns in the Phylogenetically Pivotal Lineage Nelsonioideae (Acanthaceae s.l.). \$80,000 (RSABG portion only)

Fletcher Jones Foundation. 2008-2010. Pre-doctoral and Post-doctoral Scholars at Rancho Santa Ana Botanic Garden. \$250,000

National Science Foundation. 2007-2011. REVSYS Collaborative Research: Untangling the passionflower vines: phylogeny, species diversification, and character evolution in *Passiflora* subg. *Decaloba* (Passifloraceae). \$526,405 (RSABG portion only)

National Science Foundation. 2006-2008. Virtual Types: A project to digitize and image the types and authentic specimens at the Herbarium of the Academy of Natural Sciences (PH). \$263,959

Past (last ten years only):

Institute of Museum and Library Services. 2003-2005. Provision of optimum environment for the plant collection at the Academy of Natural Sciences, Philadelphia (PH). \$49,788

## Curriculum Vitae

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- National Science Foundation. 2002-2005. Behind closed doors: New cabinetry for the herbarium of the Academy of Natural Sciences, Philadelphia (PH). \$462,016. (+ REU & RET supplements, \$18,750)
- National Science Foundation, 2001-2005. Phylogenetics of Acanthaceae: A nested approach to resolving relationships of Acanthaceae and their closest relatives. \$166,954.
- National Science Foundation, 2001-2004. Evolution of growth form and phytochemical consequences in *Adenia* (Passifloraceae), \$9,971 (doctoral dissertation improvement grant for D. Hearn)
- National Science Foundation. 1999-2002. Tropical fungal endophyte diversity and ecology. \$6600 (doctoral dissertation improvement grant for A. E. Arnold).
- National Science Foundation. 1999-2002. Pattern and process in the evolution of hawkmoth pollination: Evidence from floral attractants and rewards. \$227,000 (co-PI R. A. Raguso) (plus REU supplements totaling \$10,000).
- National Science Foundation. 1999-2001. A mobile storage system for the University of Arizona Herbarium (ARIZ). \$136,587.
- National Science Foundation. 1997-2000. Application of Molecular Data to Plant Evolutionary Biology: Phylogenetics of Acanthaceae, Hybrid Zones, and Differentiation among Plants of the Madrean Sky Islands of Southwestern North America. \$43,000 (plus REU supplement \$5,125).
- National Science Foundation. 1996-2001. Research Training Group in the Analysis of Biological Diversification. \$898,252 (PI J. G. Lundberg; I was one of several Key Faculty Participants and was active in the RTG in a number of ways; I wrote the Education section for the successful proposal).
- Mellon Foundation, 1999. Support for Symposium on Tropical Plant Phenology, International Botanical Congress, St. Louis, \$16,000 (co-PI P. Morellato).
- National Science Foundation, 1995-1997. Improvement of the Vascular Plant Collection, University of Arizona Herbarium. \$124,338. (plus REU supplements totaling \$16,125)

### **INVITED LECTURES** (last 10 years only) (Also numerous lectures to classes at Duke, Arizona and U.

- Penn., and public lectures on tropical plants and deforestation to community groups)
1998. --University of Minnesota, St. Paul.  
--University of Texas, Austin.  
--Florida International University, Miami.  
--University of Washington, Seattle.
- 1999.--Academy of Natural Sciences, Philadelphia.  
--1st Annual meeting of the South African Society for Systematic Biology, Stellenbosch, So. Africa.  
--Ohio State University, Columbus.  
--Cornell University, Ithaca, NY.  
--Symposium: Phylogenetics of Lamiales, International Botanical Congress, St. Louis, MO.  
--Symposium: Phylogenetic perspectives on the evolution of bird pollination. Congreso de Ornitología Neotropical, Monterey Mexico (with A.E. Boyd and M. Manktelow)  
--University of Wisconsin, Madison
- 2000.--University of the Witwatersrand, Johannesburg, South Africa.  
--Kirstenbosch Botanical Garden, Cape Town, South Africa.  
--University of Pennsylvania, Philadelphia
- 2001.--Michigan State University, East Lansing, MI.
- 2002.--Tulane University, New Orleans, LA  
--University of No.Dakota, Grand Forks, ND  
--University of Maryland, College Park, MD  
--Uppsala University, Uppsala, Sweden  
--University of Pennsylvania, Philadelphia, PA  
--Harvard University, Cambridge, MA
- 2003.--Villanova University, Philadelphia, PA  
--Field Museum of Natural History, Chicago, IL
- 2004.--George Washington University, Washington, DC  
--University of Arizona, Tucson (Special Lecture commemorating the opening of a new facility for the University herbarium)
- 2005.—Amherst College, Amherst. MA  
--University of So. Carolina, Columbia, SC  
--University of California, Davis.

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### *(Invited Lectures, continued)*

- University of Stockholm, Sweden
- 2006.—U. Massachusetts, Amherst
- Rancho Santa Ana Botanic Garden, Claremont, CA
- Joint Sciences Department, Claremont Colleges, Claremont, CA
- Washington State University, Pullman WA
- 2007. --Harvey Mudd College, Claremont, CA
- California Polytechnic University, Pomona CA
- 2008. – Key Note Speaker, South African Society for Systematic Biology, National Meeting, Drakensville, KwaZulu-Natal, South Africa
- UCLA, Los Angeles, CA

### **PAPERS AND POSTERS PRESENTED AT SCIENTIFIC MEETINGS** (last 10 years only) (Invited papers presented in symposia at scientific meetings, 1995, 1996, 1999 listed above as **Invited Lectures**)

- 1997. Phylogenetic relationships among Acanthaceae: Evidence from nuclear and chloroplast genomes. Amer. Soc. Plant Tax., Montreal, Quebec, Canada (LAM and M.L. Moody).
- 1998. Unraveling Justiciaeae (Acanthaceae). Amer. Soc. Plant Tax., Baltimore, MD (LAM, T.F. Daniel and S. Masta)
- 1999. Pattern and process in the evolution of hawkmoth-pollination. International Botanical Congress, St. Louis, MO (R.A. Raguso, R.A. Levin and LAM).
- 1999. Evolutionary diversification of morphology and growth habit within Rubiaceae. International Botanical Congress, St. Louis, MO (A.E. Faivre, M.J. Clauss, and LAM)
- 2000. The relationship between floral fragrance, phylogeny, and hawkmoth-pollination in Nyctaginaceae. Botany 2000, Portland, OR (R.A. Levin, R.A. Raguso, and LAM)
- 2000. Phylogenetic relationships within the enigmatic tribe Justiciaeae (Acanthaceae). Botany 2000, Portland, OR (LAM, T.F. Daniel, and K.M. Riley).
- 2001. Delimitation and subdivision of “justicioids” (Acanthaceae, Justiciaeae). Botany 2001, Albuquerque, NM (LAM, T.F. Daniel, K. Balkwill, A.M. Martin).
- 2001. The utility of floral and vegetative fragrance for phylogenetic inference in three genera of Nyctaginaceae. Botany 2001, Albuquerque, NM (R.A. Levin and LAM)
- 2002. Phylogenetic relationships among Acantheae (Acanthaceae): Taxonomic, biogeographic and morphological implications. Botany 2002, Madison, WI. (LAM, T.F. Daniel, S.E. Foose).
- 2003 Acantheae (Acanthaceae) with an emphasis on relationships among the Old World plants with remarkable one-lipped corollas. Botany 2003, Mobile, AL (LAM, T.F. Daniel, C.A. Kiel, and K. Vollesen)
- 2003. Training techie tools for the anatomy trade: Automated anatomy characterization using artificial neural nets. Botany 2003, Mobile, AL (D. Hearn, LAM)
- 2004. Saving America's Natural History Treasures. Natural Science Collections Alliance Annual Meeting, Washington, DC (McCourt, R.M., J. K. Gelhaus, E. B. Daeschler, L. A. McDade, and G. Rosenberg).
- 2004. Lessons in Integrated Pest Management: The Herbarium of The Academy of Natural Sciences, Philadelphia. Society for Preservation of Natural History Collections (SPNHC), Annual Meeting, New York City (S. W. Eisenman, J.A. Macklin, LAM).
- 2004. Phylogenetic patterns among New World Acantheae: Widespread polyphyly and poor resolution present a marked contrast with Old World Acantheae. Botany 2004, Snowbird, UT (LAM, T.F. Daniel, C.A. Kiel).
- 2004. The phylogeny of *Adenia* Forsskal (Passifloraceae), new species, and a new combination. Botany 2004, Snowbird, UT (D. Hearn, LAM).
- 2004. Phylogenetic Relationships within the Subtribe Isoglossinae (Acanthaceae). Botany 2004, Snowbird, UT (C.A. Kiel, T.F. Daniel, LAM).
- 2004. Mixing up floral traits: Radiation of Andean *Echinopsis ancistrophora* (Cactaceae). Botany 2004, Snowbird, UT (B.O. Schlumpberger, LAM, R.A. Raguso).
- 2005. Molecular systematics and patterns of morphological evolution in Thunbergioideae (Acanthaceae). International Botanical Congress, Vienna Austria (A. J. Borg, LAM, J. Schonenberger)

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*(Contributed papers and posters, continued)*

2005. Bird Pollination has evolved multiple times in the *Tetramerium* group (*Tetramerium* Lineage, Justiceae, Acanthaceae). Botany 2005, Austin, TX (C. A. Kiel, M. Manktelow, T. F. Daniel, K. Andreasen, P.-H. Holmqvist, LAM).
2005. Floral Resupination in Acanthaceae: Taxonomic and Geographic Distributions, Expression, and Possible Functions. Botany 2005, Austin, TX (T. F. Daniel, LAM)
2005. Molecular phylogenies reveal multiple origins for distinctive pollen types in Acanthaceae. Botany 2005, Austin, TX (LAM, C. A. Kiel, T. F. Daniel)
2006. Relationships among the major lineages of Acanthaceae s.l.: The Big Picture. Botany 2006, Chico, CA (LAM, T.F. Daniel, C.A. Kiel).
2006. The species-rich and biologically diverse “justicioids” (Acanthaceae: Justiceae): phylogeny, biogeography, and morphological evolution. Botany 2006, Chico, CA (C.A. Kiel, LAM, T.F. Daniel).
2006. Molecular systematics and patterns of morphological evolution in Thunbergioideae (Acanthaceae). A.J. Borg, LAM, J. Schonenberger.
2007. Justiceae revisited: Increased taxon sampling and characters support a new lineage and more “justicioid” Diclipterinae. Botany 2007, Chicago, IL (LAM, C.A. Kiel, T.F. Daniel).

**Memberships:** American Society of Plant Taxonomists, Association for Tropical Biology, Associates of OTS, Botanical Society of America, California Botanical Society, Philadelphia Botanical Club, Society for Conservation Biology, Society for the Study of Evolution, Society for Systematic Biology

**TEACHING** *(not including independent studies, undergraduate honors independent research, and graduate research)*

Duke University:

Fall, Spring 1983-1985: *Ecology and Society* (lecture course for non-majors)

Fall 1989: *Gender and Science* (seminar course)

Organization for Tropical Studies:

*Tropical Biology: An Ecological Approach*, Costa Rica, 1979, 1982, 1983, 1984, 1988, 1989, 1989, 1990, 1990, 1991, 1991, 1993, 1995, 2002, 2004, 2005

*Tropical Plant Systematics*, 1994, 2002, 2004

University of Arizona:

Fall 1993-2000: *Analysis of Biological Diversification* (lecture course)

*Plant Evolutionary Biology* (seminar course)

Spring 1993-2000

*Systematic Botany* (lecture + lab course)

*Plant Evolutionary Biology* (seminar course)

University of Pennsylvania:

Spring 2004

*Phylogenetic Biology* (lecture + computer workshop course)

RSABG & CGU:

Fall 2006 – Present, every semester

*Seminar in Systematic Botany* (guide student participation in Program seminar series)

Spring 2007

*Plant Reproductive Biology* (seminar course)

Fall 2007

*Plant Families* (seminar course)

*Readings in Plant Systematics* (seminar course)

Spring 2007

*Plant Reproductive Biology*

*Readings in Plant Systematics* (seminar course)

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### ADVISING, STUDENTS

Masters Students

Current: Ms. Sula Vanderplank, Claremont Graduate University; Ms. Carrie Kiel, Claremont Graduate University)

Degree Completed: Mr. David Shindelman (M. Sc. in Biology, August 1996; Currently a secondary school science teacher in Navajo Co., AZ)

Ms. Michelle McMahan (M. Sc. in EEB, December 1996) (Ph.D., Washington State Univ., 2002; currently a postdoc at U. California Davis)

Mr. Philip Jenkins (M. Sc. in EEB, May 1999) (Currently Assistant Curator, U. AZ. Herbarium)

#### Ph.D. Students - Degree Completed

Dr. Amy E. Faivre (EEB, Dec. 1998) (Currently Assistant Professor, Cedar Crest College, PA)

Dr. Rachel A. Levin (EEB, Dec. 2000) (Currently a postdoctoral fellow at Amherst College, MA.)

Dr. Amy Boyd (EEB; May 2001) (Currently Assistant Professor, Warren Wilson College, NC)

Dr. A. Elizabeth Arnold (EEB, Dec 2002) (Currently Assistant Professor, University of Arizona)

Dr. David Hearn (EEB, Dec. 2004) (Currently postdoctoral fellow, University of Arizona, AZ)

Service on Graduate Committees (Current only): Duke U. (1), Claremont Graduate University (4)

### ADVISING, POSTDOCTORAL ASSOCIATES

Dr. Alice Hempel (NSF Minority Postdoctoral Fellowship, 1997-1998; Current position: Associate Professor, Texas A. & M. Kingsville)

Dr. Robert Raguso (NSF RTG Postdoctoral Fellow, 1998; funded on NSF grant, McDade & Raguso co-PIs, 1999; Current position: Associate Professor, U. So. Carolina).

Dr. Mariette Manktelow (Fulbright plus several forms of support from the Swedish government, 1998-2000; Current position: Research Associate, Uppsala University).

Dr. Michelle Zjhra (NSF Postdoctoral Fellowship, 1998-2000; Current position: Assistant Professor, Georgia State University)

Dr. Shawn Krosnick (NSF Research Grant, 2007-present)

### PROFESSIONAL SERVICE:

National Science Foundation: Panel Member, Assembling the Tree of Life, 2005, 2007; Systematic Biology, 2003, 2004; Participant, Workshop on "A Decadal Vision for Taxonomy and Natural History Collections," 2003; Committee Member, Long Term Ecological Research 20 Year Program Review, 2001; Participant, Workshop on Morphobank, 2001; Participant, Workshop on Biodiversity Observatory Network, 1999; Member, Committee of Visitors, Long-Term, Projects, 1997; Member, Site Visit Committee, 1996; Panel Member, Research Collections in Systematics and Ecology (RCSE) Program, 1994,1997; Member, Advisory Committee, Partnerships for Enhancing; Expertise in Taxonomy (PEET) Program, 1994.

American Society of Plant Taxonomists: Associate Editor, Systematic Botany (1994-1996); Councilor (1995-1997), Honors Committee (member, 1994-1995; chair, 1995-1996), Investment Committee (1998-present), Nominations Committee (2001); President-elect (2002), President (2003-2004), Past-president (2004-2005)

Association for Tropical Biology & Conservation: Councilor (1991-1992), President (1995), Chair of Nominating Committee (1996,1997), Associate Editor for Biotropica (2001-2004); Chair of ad hoc committee to recruit a new editor for Biotropica (2002-2003)

Botanical Society of America: Member, Steering Committee, Botany for the Next Millennium Committee (1993-1995).

Organization for Tropical Studies: Member, Palo Verde Biological Station Advisory Committee, Costa Rica (1993-1996); Member, Strategic Planning Committee (1997).

Philadelphia Botanical Club: Vice President (2004-2005)

Society for Systematic Biology: Councilor (1993-1995; 2001-2003); Chair, Budget Committee, 1996; Chair, Long-Range Planning Committee (1996-1997); Awards Committee (1998)

Systematics 2000 Committee: Member, Subcommittee on Phylogenetic Analysis (1992-1993)

## Curriculum Vitae

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Southwestern Research Station: Portal, AZ (American Museum of Natural History): Member, Scientific Advisory Committee, 1994-1996.

External Reviewer for Promotion and Tenure of faculty at other universities (seven for promotion to full professor, eight for promotion and tenure, two for hire with tenure).

External Review Committee: Graduate Program in Botany, Claremont Graduate Colleges (1997); Carnegie Museum of Natural History (1998)

External Examiner: three Ph.D. candidates, one Master's candidate, University of the Witwatersrand and University of Cape Town, South Africa

Reviewer of Proposals for: National Science Foundation, National Geographic Society, NSERC (Canada), Organization for Tropical Studies, National Research Foundation (South Africa)

Reviewer of Manuscripts for: Acta Zoológica Mexicana (México), Aliso, American Journal of Botany, American Midland Naturalist, American Naturalist, Annals Missouri Botanical Garden, Annals of Botany, Australian Systematic Botany, Biological Journal of the Linnean Society (UK), Biotropica, Bothalia (So. Africa), Brittonia, Bulletin of the British Museum, Cladistics, Ecology, Evolution, Evolutionary Ecology, Lundellia, Novon, Plant Systematics and Evolution (Austria), Proceedings California Academy of Sciences, Revista de Biología Tropical (Venezuela), Selbyana, Signs, Systematic Biology, Systematic Botany, Trends in Ecology and Evolution; Academic Press, Smithsonian Institution Press, University of Arizona Press, University of California Press, University of Chicago Press, University of Texas Press.

## INTRAMURAL SERVICE

Rancho Santa Ana Botanic Garden, Claremont, CA

Director of Research (RSABG) and Chair of the Botany Program (Claremont Graduate University), 2006 to present

Claremont Graduate University, Claremont, CA

Member, Faculty Executive Committee, 2006 to present

Member (acting chair, Fall 2007), Institutional Review Board, 2007 to present

Academy of Natural Sciences, Philadelphia

Chair, Department of Botany, 2000 to 2006

Acting Director, Laboratory of Molecular Systematics & Ecology, 2005--2006

Acting Vice President for Biodiversity (shared with two other curators in interim period), 2002--2003

Organizer, Phylogenetics Discussion Group, 2000 to 2006

Collaboration with Public Programs staff on many activities, including behind-the-scenes activities and plant walks for members, 2001 to 2006

Seminar program organizer, Fall 2002, 2004

Science Council Member, 2003 - 2005

University of Arizona

Department (Ecology & Evolutionary Biology): Graduate Policy Committee (chair, 95-2000), , Greenhouse Committee (92-99, chair 95-96), Field Stations Committee (92-99), Brochure Committee (92-93), Committee (ad hoc) to revise the graduate handbook (94-96), Steering Committee (93-94, 96-97). (Plant Sciences): Undergraduate Committee (92-93, 93-94)

University:

Curator of the University of Arizona Herbarium (ARIZ), 92-2000

Member, ad hoc committee to establish the U.AZ campus as an arboretum, 1999.

Member, Undergraduate Biology Research Participation (UBRP) program selection committee, 98-99

Member, Graduate Studies Committee for the Master's Program in General Biology, 96-98.

Executive Committee Member, NSF Research Training Grant in the Analysis of Biological Diversification, 94-97.

U. Arizona representative to Board of Directors, Organization for Tropical Studies, 1994-2000

Panel Member, Small Grants Program, 1994

## EXTRAMURAL SERVICE:

To Community:

Provide answers to numerous queries about plants, Philadelphia, Tucson, RSABG, on-going

Tucson Botanical Garden: Lectures to docents, annual 1992 – 1998

## Curriculum Vitae

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Girl Scouts of Pima County:

Demonstration of techniques in pollination biology, 1999.

To Nation/World:

Founder and Associate Editor emeritus of TropiNet newsletter; published quarterly by the Association for Tropical Studies, Organization for Tropical Studies and Smithsonian Biodiversity Program; distributed to thousands of scientists, students and conservationists in US and abroad; 1988 to 2000.

Organized workshops in Costa Rica on environmental issues in developing countries for US Congressional staff members and Latin American decision makers, 1988-1992.

### **OTHER PROFESSIONAL EXPERIENCE AND SKILLS**

Fieldwork (1976-present): Collecting and studying reproductive biology of tropical and subtropical Acanthaceae, Arizona, Mexico, Guatemala, Belize, El Salvador, Honduras, Nicaragua, Costa Rica, Panama, Venezuela, Colombia, Ecuador, Brazil, South Africa, Madagascar.

Administration

Rancho Santa Ana Botanic Garden, Claremont CA, Director of Research and Chair of the Botany Program, Claremont Graduate University (includes managing the graduate program, Botany Department, RSA library and RSA-POM herbarium)

Academy of Natural Sciences, Philadelphia, Curator of the Herbarium and Chair, Department of Botany (includes managing budget and staff).

University of Arizona, Curator the Herbarium (included managing two fulltime assistant curators).

Organization for Tropical Studies, Scientific Coordinator, 1985-1992 (responsibilities included preparation, submission and administration of grants from private foundations; administration of research awards to graduate students; hiring of faculty for, and coordination of, OTS' educational programs in Costa Rica; development and editing of newsletter for tropical biologists, Tropinet).

Station Manager, La Selva Biological Station, Organization for Tropical Studies, Costa Rica, 1977-1978.

Languages: Spanish, French, Portuguese (reading, limited speaking), German (reading)