

Biographical Sketch - LESLIE R. LANDRUM

Herbarium Curator, Department of Plant Biology, Arizona State University, Box 871601, Tempe, AZ 85287-1601.

Phone: (480) 965-4679.

Fax: (480) 965-6899.

e-mail: les.landrum@asu.edu

Education and Professional Experience:

B.S., 1969, Forest Botany, New York State College of Forestry at Syracuse University, Syracuse, New York.

M.S., 1975, Systematic Botany, University of Michigan, Ann Arbor, Michigan.

PhD., 1980, Systematic Botany, University of Michigan, Ann Arbor, Michigan.

1980 -1983, B. A. Krukoff Research Associate at the New York Botanical Garden, Bronx, New York.

1983 - 1986, Tilton Fellow at the California Academy of Sciences, San Francisco, California.

1986-1990, Herbarium Curator, Department of Plant Biology, Arizona State University, Tempe, Arizona.

1990-2003, Associate Research Scientist/Herbarium Curator, Department of Plant Biology, Arizona State University, Tempe, Arizona.

2003-present, Senior Research Scientist/Herbarium Curator, Department of Plant Biology, Arizona State University, Tempe, Arizona.

Recent Professional Activities:

Member of the Editorial Board of the Vascular Plants of Arizona Project (1988-present).

Co-editor of the Journal of the Arizona-Nevada Academy of Science, flora issues only (1991-present).

Member of the Assembly of Delegates of the Organization for Tropical Studies (1999-present).

Member of the Editorial Board of the Memoirs of the New York Botanical Garden (1985-1990 term).

Member of the Commission of the Organization for Flora Neotropica (1986-present).

Editorial Board of Flora Neotropica Monographs (1990-1995).

Member of the Systematic Botany Monographs Committee (1991-1996).

Fulbright Scholar in Paraguay and Brazil, 1995.

Member of the editorial board of Bonplandia (botanical journal in Argentina), 2003-present.

Research Interests: Several seasons of fieldwork in Latin America and Arizona. Flora and phytogeography of temperate South America, flora of Arizona, American Myrtaceae, South American Berberidaceae, theoretical aspects of phylogenetic analysis.

Teaching Activities: Trees and Shrubs of Arizona (most years); various seminars and classes taught irregularly.

Graduate Student Committees:

Past co-chair: J. Bricker, K. Rice, C. Christy, G. Imdorf, C. Shohet, J. Buegge, S. Pilversack, A. Trauth, G. Walters, E. Gilbert, A. Salywon, E. Makings.

Publications:

- 1) Donoso, C. and L. R. Landrum. Manual de identificación de especies leñosas del bosque humedo de Chile. Published by the Corporación Nacional Forestal, Santiago, Chile. 168 pages. 1974.
- 2) Landrum, L. R. Un híbrido entre Myrceugenia exsucca y Myrceugenia lanceolata. Facultad de Ciencias Forestales, Universidad de Chile. Bol. Téc. No. 30:5-10. 1975.
- 3) Landrum, L. R and T. J. Nimlos. Gradientes florales y morfología asociada del suelo de la Reserva Forestal de Malalcahuello, Chile. Facultad de Ciencias Forestales, Universidad de Chile. Bol. Téc. No. 35:1-59. 1975.
- 4) Estabrook, G. F. and L. R. Landrum. A simple test for the possible simultaneous evolutionary divergence of two amino acid positions. Taxon 24:609-613. 1975.
- 5) Donoso, C. and L. R. Landrum. Nothofagus leoni: hibridación e introgresión en poblaciones de Nothofagus obliqua y Nothofagus glauca. Facultad de Ciencias forestales, Universidad de Chile. Bol. Téc. No. 36:1-29. 1976.
- 6) Buck, W. R. and L. R. Landrum. A new species of Astomiopsis (Ditrichaceae). The Bryologist 30:359-362. 1978.
- 7) Landrum, L. R. and R. McVaugh. Calceolaria mexicana and Calceolaria tripartita in Mexico. Contr. Univ. Mich. Herb. 11(5): 284-288. 1978.
- 8) Donoso, C. and L. R. Landrum. Nothofagus leoni Espinosa, a natural hybrid between Nothofagus obliqua (Mirb.) Oerst. and Nothofagus glauca (Phil.) Krasser. N. Z. Journal of Botany 17:353-360. 1979.
- 9) Landrum, L. R. New species and new combinations in Myrceugenia (Myrtaceae). Brittonia 32(3):372-375. 1980.
- 10) Landrum, L. R. The phylogeny and geography of Myrceugenia (Myrtaceae). Brittonia 33(1):105-129. 1981.
- 11) Landrum, L. R. Book review of - Flora de la Cuenca de Santiago de Chile, by L. E. Navas. Brittonia 33(4): 497. 1981.
- 12) Landrum, L. R. A monograph of the genus Myrceugenia (Myrtaceae). Flora Neotropica Monographs 29. 137 pages. 1981.

- 13) Landrum, L. R. The development of the fruits and seeds of Campomanesia (Myrtaceae). *Brittonia* 34(2):220-224. 1982.
- 14) Landrum, L. R. The taxonomic implications of the discovery of calyptrate species of Myrceugenia (Myrtaceae). *Brittonia* 36(2):161-166. 1984.
- 15) Landrum, L. R. A new name and new combinations in Campomanesia and Pimenta (Myrtaceae). *Brittonia* 36(3): 241-243. 1984.
- 16) Landrum, L. R. Proposal to conserve 5565 Blepharocalyx against Heteromyrtus (Myrtaceae). *Taxon* 33: 521-522. 1984.
- 17) Landrum, L. R. and D. Stevenson. Variability of Embryos in Subtribe Myrtinae (Myrtaceae). *Systematic Botany* 11: 155-162. 1986.
- 18) Landrum, L. R. The Life and Botanical Accomplishments of Boris Alexander Krukoff. *Advances in Economic Botany* 2: 1-96. 1986.
- 19) Landrum, L. R. Campomanesia, Pimenta, Blepharocalyx, Legrandia, Acca, Myrrhinium, and Luma (Myrtaceae). *Flora Neotropica Monographs* 45: 1-179. 1986.
- 20) Landrum, L. R. A new species of Campomanesia (Myrtaceae) from Brazil. *Brittonia* 39: 245-247. 1987.
- 21) Landrum, L. R. Systematics of Myrteola (Myrtaceae). *Systematic Botany* 13(1): 120-132. 1988.
- 22) Landrum, L. R. and F. Grifo. Myrcianthes (Myrtaceae) in Chile. *Brittonia* 40(3): 290-293. 1988.
- 23) Landrum, L. R. The Myrtle Family (Myrtaceae) in Chile. *Proc. Calif. Acad. Sciences* 45(12): 277-317. 1988.
- 24) Landrum, L. R. The generic position of Myrtus alternifolia and notes on Calycolpus (Myrtaceae). *Madroño* 36(1): 9-14. 1989.
- 25) Landrum, L. R. and W. P. Sharp. Seed coat characters of some American Myrtinae (Myrtaceae): Psidium and related genera. *Systematic Botany* 14(3): 370-376. 1989.
- 26) Landrum, L. R. Review of "Flora of Australia, Vol. 19, Myrtaceae - Eucalyptus, Angophora. By G. M. Chippendale." *Ann. Missouri Bot. Gard.* 76: 943-944. 1989.
- 27) Landrum, L. R. A new species of Calycolpus (Myrtaceae) from the Venezuelan Guayana. *Ann. Missouri Bot. Gard.* 76: 930-931. 1989.
- 28) Landrum, L. R. Accara: A new genus of Myrtaceae, Myrtinae from Brazil. *Systematic Botany* 15(2): 221-225. 1990.

- 29) Landrum, L. R. and C. Donoso. Ugni molinae (Myrtaceae), a potential fruit crop for regions of mediterranean, maritime, and subtropical climates. *Economic Botany* 44: 536-539. 1991.
- 30) Landrum, L. R. Chamguava: a new genus of Myrtaceae (Myrtinae) from Mesoamerica. *Systematic Botany* 16(1): 21-29. 1991.
- 31) Tucker, A. O., M. J. Maciarello, R. P. Adams, L. R. Landrum, and T. A. Zaroni. Volatile Leaf Oils of Caribbean Myrtaceae. I. Three varieties of Pimenta racemosa (Miller) J. Moore of the Dominican Republic and the commercial Bay Oil. *Journal of Essential Oil Research* 3: 323-329. 1991.
- 32) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of Caribbean Myrtaceae. II. Pimenta dioica (L.) Merr. of Jamaica. With A. O. Tucker (senior author) and M. J. Maciarello. *Journal of Essential Oil Research* 3: 195-196. 1991.
- 33) Landrum, L. R. Nomenclatural changes in Myrteola and Myrceugenia (Myrtaceae). *Brittonia* 43(3): 199-200. 1991.
- 34) Tucker, A. O., M. J. Maciarello, R. P. Adams, L. R. Landrum, and T. A. Zaroni. Volatile Leaf Oils of Caribbean Myrtaceae. III. Pimenta haitiensis (Urban) Landrum of the Dominican Republic. *Journal of Essential Oil Research* 3: 471-473. 1991.
- 35) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of Caribbean Myrtaceae. IV. Pimenta jamaicensis (Britton & Harris) Proctor of Jamaica. *Journal of Essential Oil Research* 4: 93-94. 1992.
- 36) Landrum, L. R. Vascular Plants of Arizona: Sapotaceae. *Journal of the Arizona-Nevada Academy of Science* 26(1): 34-35. 1992.
- 37) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of Caribbean Myrtaceae. V. Pimenta obscura Proctor of Jamaica. *Journal of Essential Oil Research* 4: 195-196. 1992.
- 38) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of Caribbean Myrtaceae. VI. Myrcianthes fragrans (Sw.) McVaugh of Jamaica. *Journal of Essential Oil Research* 4: 313-314. 1992.
- 39) Landrum, L. R. Mosiera (Myrtaceae) in Mexico and Mesoamerica. *Novon* 2: 26-29. 1992.
- 40) Landrum, L. R. Lectotypification of Quercus emoryi and Q. hypoleuca (Fagaceae). *Madroño* 39: 239-240. 1992.
- 41) Weyerstahl, P., H. Marschall, and L. R. Landrum. Constituents of the Leaf Extract of Amomyrtus meli (R. A. Philippi) Legrand et Kausel, A. luma (Molina) Legrand et Kausel, and of

- Amomyrtella guili (Speg.) Kausel (Myrtaceae). Flavour and Fragrance Journal 7: 247-251. 1992.
- 42) Landrum, L. R., Imdorf, G., and Boufford, D. E. Noteworthy collection, Arizona: Boehmeria cylindrica (L.) Swartz (Urticaceae). Madroño 39: 308-309. 1992.
- 43) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of American Myrtaceae. I. Blepharocalyx cruckshanksii (Hook. & Arn.) Niedenzu of Chile and B. salicifolius (H. B. K.) Berg of Argentina. Journal of Essential Oil Research 5: 333-335. 1993.
- 44) Landrum, L. R. Factors influencing the accuracy of the parsimony criterion and a proposed method for estimating true tree length. Systematic Botany 18(3): 516-524. 1993.
- 45) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of American Myrtaceae. II. Calycolpus warszewiczianus Berg of Costa Rica. Journal of Essential Oil Research 5: 561-562. 1993.
- 46) Landrum, L. R. Vascular Plants of Arizona: Fagaceae. Journal of the Arizona-Nevada Academy of Science 27(2): 203-214. 1994.
- 47) Landrum, L. R. Vascular Plants of Arizona: Aceraceae. Journal of the Arizona-Nevada Academy of Science 29(1): 2-5. 1995.
- 48) Landrum, L. R., W. D. Clark, W. P. Sharp, and J. Brendecke. Hybridization between Psidium guajava and P. guineense (Myrtaceae). Economic Botany 49(2): 153-161. 1995.
- 49) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile Leaf Oils of American Myrtaceae. III. Psidium cattleianum Sabine, P. friedrichsthalianum (Berg) Niedenzu, P. guajava L., P. guineense Sw., and P. sartorianum (Berg) Niedenzu. Journal of Essential Oil Research 7: 187-190. 1995.
- 50) Landrum, L. R. and J. Bonilla. Anther glandularity in the American Myrtinae (Myrtaceae). Madroño 43(1): 58-68. 1996.
- 51) Landrum, L. R. and M. L. Kawasaki. The genera of Myrtaceae in Brazil: an illustrated synoptic treatment and identification keys. Brittonia 49(4): 508-536, Dec. 1997.
- 52) Kawasaki, M. L. and L. R. Landrum. A rare and potentially economic fruit of Brazil: cambuci, Campomanesia phaea (O. Berg) Landrum (Myrtaceae). Economic Botany 51(4): 403-407, Dec. 1997.
- 53) Landrum, L. R. A new species of Calycolpus (Myrtaceae) from the Campos Rupestres, Minas Gerais, Brazil. Novon 8: 244-246. 1998.

- 54) Landrum, L. R. A book review of "William H. Emory: Soldier-Scientist," by L. David Norris, James C. Milligan, and Odie B. Faulk. University of Arizona Press. *Journal of Arizona-Nevada Academy of Science* 31(2): 139-141. 1999.
- 55) Landrum, L. R. Revision of *Berberis* (Berberidaceae) in Chile and adjacent Argentina. *Annals of the Missouri Botanical Garden* 86: 793-834. 1999.
- 56) Landrum, L. R., and A. Rand. Anther glandularity in the American Eugeniinae (Myrtaceae). *Rojasiana* 5(1): 1-13. 1999.
- 57) Tucker, A. O., M. J. Maciarello, L. R. Landrum, and M. L. Kawasaki. Volatile leaf oils of *Calycolpus australis* Landrum (Myrtaceae). *Journal of Essential Oil Research* 12: 149-150. 2000.
- 58) Landrum, L. R. What has happened to descriptive systematics? What would make it thrive? *Systematic Botany* 26(2): 438-442. 2001.
- 59) Tucker, A. O., M. J. Maciarello, A. Salywon, and L. R. Landrum. Volatile leaf oils of *Calypttranthes sintenisii* Kiaersk. (Myrtaceae). *Journal of Essential Oil Research* 13: 427-428. 2001.
- 60) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. Volatile leaf oils of *Myrcianthes coquimbensis* (Gay) Landrum & Grifo, (Myrtaceae). *Journal of Essential Oil Research* 14: 40-41. 2002.
- 61) Landrum, L. R. Two new species of *Campomanesia* (Myrtaceae) from Espirito Santo and Bahia, Brazil. *Brittonia* 53(4): 534-538. 2002.
- 62) Landim, M. F. and L. R. Landrum. The genus *Campomanesia* (Myrtaceae) in Atlantic Rainforest fragments in Sergipe, Northeast region of Brazil. *Sida* 20(1): 205-214. 2002.
- 63) Holst, B., L. R. Landrum and F. Grifo. Myrtaceae in: J. A. Steyermark et al., *Flora of the Venezuelan Guayana*, 7:1-99. 2003.
- 64) Landrum, L. R. Berberidaceae in: C. Marticorena & R. Rodriguez, *Flora de Chile* 2(2): 1-23 & 79-81. 2003.
- 65) Landrum, L. R.. A revision of the *Psidium salutare* complex (Myrtaceae). *Sida* 20(4): 1449-1469. 2003.
- 66) Kim, Young-Dong, Sung-Hee Kim, Leslie R. Landrum. Taxonomic and phytogeographic implications from ITS phylogeny in *Berberis* (Berberidaceae). *Journal of Plant Research* (Tokyo) 117(3): 175-182. 2004.
- 67) Landrum, L. R. Review of "Robert FitzRoy, captain to Charles Darwin's evolution," By Peter Nichols, HarperCollins Publishers. *Taxon* 53(1): 240-241. 2004.

- 68) Landrum, L. R. and A. Salywon. Systematics of *Amomyrtus* (Burret) D. Legrand et Kausel (Myrtaceae). *Bonplandia* 13: 1-9. 2004.
- 69) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. 2005. The essential oil of desert-lavender, *Hyptis emoryi* Torrey (Lamiaceae). *Journal of Essential Oil Research* 17: 223-224.
- 70) Tucker, A. O., M. J. Maciarello, and L. R. Landrum. 2005. The essential oil of Mojave desert rue, *Thamnosma montana* Torr. & Frém. (Rutaceae), from Arizona. *Journal of Essential Oil Research* 17: 366-367.
- 71) Landrum, L. R. 2005. A revision of the *Psidium grandifolium* complex (Myrtaceae). *Sida* 21(3): 1335-1354.
- 72) Landrum, L. R. 2005. Two new species of Myrtaceae from South America. *Novon* 15:442-446.
- 73) Landrum, L. R., L. Dugan, S. Whitcomb, J. Anderson, D. Damrel, and F. E. Northam. 2005. Noteworthy collections, Arizona: *Oncosiphon piluliferum* (L. f.) Kallersjo (Asteraceae). *Madroño* 52: 270-274.
- 74) Landrum, L. R. 2006. Book Review of “Variación Intraespecifica en las especies arbóreas de los bosques templados de Chile y Argentina,” by C. Donoso, A. Premoli, L. Gallo, and R. Ipinza. Editorial Universitaria, Santiago, Chile. ISBN 956-11-1702-9. *Economic Botany* 60:198.
- 75) Landrum, L. R. and M. Sobral. 2006. *Psidium cauliflorum* (Myrtaceae), a new species from Bahia, Brazil. *Sida* 22(2): 927-929.
- 76) Tucker, A. O., M. J. Maciarello, A. Salywon, and L. R. Landrum. 2007. The essential oils of *Mosiera enrhengergii* (O. Berg) Landrum (Myrtaceae) originally from Mexico and *M. longipes* (O. Berg) Small from Florida. *Journal of Essential Oil Research* 19:1-2.
- 77) Landrum, L. R. 2007. Prologo 2, p. 10, in Donoso, C. *Las especies arboreas de los bosques templados de Chile y Argentina. Autoecologia*. 678 pp. Marisa Cuneo Ediciones, Valdivia, Chile.
- 78) Landrum, L. R. and F. R. Barrie. 2007. *Calycolpus*, *Pimenta*, *Psidium*, and *Ugni* (Myrtaceae), in Hammel, B. E., M. H. Grayum, C. Herrera, and N. Zamora, *Manual de Plantas de Costa Rica*, vol. IV, pp.731, 772-773, 777-781, 784.
- 79) Salywon, A. M. and L. R. Landrum. 2007. *Curitiba* (Myrtaceae): A new genus from the Planalto of southern Brazil. *Brittonia* 59(4): 301-307.
- 80) Dugan, L. E., M. F. Wojciechowski, L. R. Landrum. 2007. A Large Scale Plant Survey: efficient vouchering with identification through morphology and DNA analysis. *Taxon* 56(4): 1238-1244.

81) Landrum, L. R. and L. S. Funch. 2008. Two New Species of *Psidium* (Myrtaceae) from Bahia, Brazil. *Novon* 18: 74-77.

82) Landrum, L. R. 2008. Two New Species of *Calycolpus* (Myrtaceae) from Brazil. *Brittonia* 60(3): 252-256.

Publications in press:

Landrum, L. R. Myrtaceae for the Chihuahuan Desert Flora. 3 manuscript pages. Accepted by Dr. James Henrickson, Editor.

Landrum, L. R. Myrtinae (Myrtaceae) of Mesoamerica. 40 manuscript pages. Accepted by the Missouri Botanical Garden Flora of Mesoamerica project.

Funch, L. S., Landrum, L. R., Ibrahim, M., Mazine, F. F. 2008. Myrtaceae. In Giuliatti, A. M., Queiroz, L. P., Rapini, A. & Silva, J. M. C. (eds.) **Catálogo de espécies de plantas raras no Brasil**. Conservation International - Brasil / Universidade Estadual de Feira de Santana.

Tucker, A. O., M. J. Maciarelo, R. C. Brown, L. R. Landrum, D. Lafferty. In press. Essential Oils from the oleo-gum-resins of Elephant Tree or *torote* (*Bursera microphylla* A. Gray, Burseraceae) from Arizona. *Journal of Essential Oil Research*.

Published abstracts:

Why is embryo structure of taxonomic importance in the tribe Myrteae (Myrtaceae)? *J. Arizona-Nevada Acad. of Sci.* 22: 14. 1987.

Phytogeographic relationships of the Myrtaceae of Chile. *Amer. J. Bot.* 74(abstracts): 741. 1987.

Identification of leaf flavonoides from guava (*Psidium guajava* L., Myrtaceae) using HPLC with diode array detection. With W. D. Clark. *Amer. J. Bot.* 75(abstracts): 129. 1988.

Definitive seed coat characters of *Psidium*. With W. Sharp. *Amer. J. Bot.* 75(abstracts): 188. 1988.

Evidence for the possible hybrid origin of *Quercus dunnii* (Fagaceae). *J. Arizona-Nevada Acad. of Sci.* 24: 14. 1989. With G. Owens and W. Sharp.

Hybridization between *Psidium guajava* and *Psidium guineense* (Myrtaceae). *J. Arizona-Nevada Acad. of Sci.* 24: 13. 1989. With W. Sharp.

A revision of the genus *Crinodendron* (Elaeocarpaceae). *J. Arizona-Nevada Acad. of Sci.* 24: 12. 1989. With J. Bricker as senior author.

Use of flavonoids to detect pure *Psidium guajava* L. in a hybrid swarm with *Psidium guineense* Sw. (Myrtaceae). *Amer. J. Bot.* 76(6): 190. 1989. With Brendecke, J. W. (senior author) and W. D. Clark.

Taxonomy and distribution of oaks (*Quercus* Fagaceae) in Arizona. *Arizona-Nevada Acad. of Sci.* 26: 21. 1991. With W. P. Sharp.

Volatile Leaf Oils of American Myrtaceae. I. *Blepharocalyx cruckshanksii* (Hook. & Arn.) Niedenzu of Chile and *B. salicifolius* (H. B. K.) Berg of Argentina. With A. O. Tucker (senior author) and M. J. Maciarelo. *XIX Sposium Internacional de Química de Productos Naturales 1.* 1992. (Special supplement of *Rev. Latinoamer. Quím.*).

Testing the parsimony criterion with models of homoplasious evolution. *Arizona-Nevada Acad. of Sci.* 28(proc. suppl.): 27. 1993.

Genera of the American Myrtinae (Myrtaceae). *XVI International Botanical Congress Abstracts*, p. 276. 1999. With Andrew Salywon.

Phylogenetic relationships of the berry fruited Myrtaceae as inferred from ITS sequences. <http://www.botany2002.org/section12/abstracts/239.shtml> 2002. With A. Salywon (senior author) and N. Snow.

Phylogenetic relationships of Myrtaceae as inferred from nrDNA ITS sequence data. *Botany 2004*, Snowbird, Utah. 2004. <http://www.botanyconference.org/engine/search/index.php?func=detail&aid=795>. With Salywon, A. (senior author), N. Snow, M. F. Wojciechowski, and J. Csizmadi.

Seed germination strategies investigated using computer simulations. With Lafferty, D. (senior author). *XVII International Botanical Congress Abstracts*: 104. 2005.

Gilbert, E.E., R. Schroeder, L. Landrum, and C. Gries. 2006. *Specimen Based Virtual Flora Model for Arizona*. SPNHC-NSCA 2006 Joint Annual Meeting, 23-27 May, Poster Session. Albuquerque, New Mexico.

Schroeder, R., Gilbert, E.E., L. Landrum, and C. Gries. 2006. *SEINet: The Southwest Environmental Information Network*. SPNHC-NSCA 2006 Joint Annual Meeting, 23-27 May, Poster Session. Albuquerque, New Mexico.

Grants:

1977: National Science Foundation Dissertation Improvement Grant of \$8,611 for field study of the genus *Myrceugenia* (Myrtaceae).

1981: National Science Foundation Grant of \$25,089 for monographic study of the genera *Acca*,

Blepharocalyx, Campomanesia, Luma, and Pimenta (Myrtaceae).

1987: Arizona State University, Research Incentive Award of \$10,000 for studies of Myrtinae (Myrtaceae).

1988: National Geographic Society of \$7,932 for studies of Mesoamerican Myrtinae (Myrtaceae).

1989: Smithsonian Institution, Short Term Visitor Award of \$1350.

1989: National Science Foundation Grant of \$100,000 for "Support for the Arizona State University Herbarium." Landrum as PI, Drs. Pinkava, Nash, and Pigg as co-PI's.

1990: Arizona State University Minigrant of \$500 for field studies and herbarium visits for the study of Fagaceae, Aceraceae, and Sapotaceae in Arizona.

1992: National Geographic Society of \$14,740 for studies of *Berberis* (Berberidaceae) in Chile.

1995: Fulbright Scholars American Republics Regional Research Award (ca. \$25,000).

1998-2003: ASU CLAS support for an RA and publication costs for the Vascular Plants of Arizona Project in the Journal of the Arizona-Nevada Academy of Science. This amounts to ca. \$20,000 per year.

1998-2003: Small grants to support the herbarium from the CAP LTER.

2003: National Science Foundation Grant of \$470,291 for "Completion and coordination of databases of Arizona vascular plant specimens at Arizona State University (ASU), University of Arizona (ARIZ), and Northern Arizona University (ASC)" Landrum as PI, Drs. McLaughlin, Ayers, and McCartney as co-PI's.

2003: BLM grant for \$20,000 for "Flora of the San Pedro Riparian National Conservation Area," Dr. J. Stromberg as PI, E. Makings (graduate student), and Landrum as co-PI's.