

Curriculum Vitae  
Mónica Arakaki-Makishi

Postdoctoral Research Associate  
Department of Ecology and Evolutionary Biology  
Brown University  
80 Waterman St., Box G-W  
Providence, RI 02912

Phone: (401) 863-6882  
E-mail: monica\_arakaki@brown.edu

Research Associate  
Museo de Historia Natural  
Av. Arenales 1256, Apdo. 14-0434  
Lima 14, Peru

**Education**

2008            Ph.D. Plant Systematics, University of Florida, Gainesville.  
2002            M.A. Plant Biology, University of Texas, Austin.  
1999            Professional degree of Biologist, San Marcos University, Lima, Peru.  
1995            B.S. Biology, San Marcos University, Lima, Peru.

**Research Experience**

2009-present    Phylogenetic studies in the Portulacineae (Caryophyllales).  
Brown University. Supervisor: Erika J. Edwards.  
2007-2008       Research Assistant, Molecular and Cytogenetic Studies of Esociforms. Florida  
Museum of Natural History – Ichthyology Dept. Supervisor: Dr. Andrés López.  
2006-2007       Research collaborator, Phylogenetic studies of the genus *Paspalum* (Poaceae,  
Panicoideae). Florida Museum of Natural History. In collaboration with Dr. P.  
Speranza, Univ. de La República, and Dr. G. Rua, Univ. de Buenos Aires.  
May-Aug 2005    Research Assistant, Tree of Life Web Project. Florida Museum of Natural History.  
Supervisor: Dr. Pamela Soltis.  
May-Aug 2004    Research Assistant, Organization of DNA collection, Tree of Life Project. University  
of Florida. Supervisor: Dr. Douglas Soltis.  
May-Aug 2003    Research Assistant, Paleobiology Database, Deep Time Project. Florida Museum of  
Natural History. Supervisor: Dr. Hongshan Wang.  
May-Aug 2000    Research Assistant, BIOTICA Mexican Biodiversity Database Project. Herbarium  
University of Texas (TEX). Supervisor: Dr. José Panero.  
Feb-Mar 1998    Research Assistant, Rapid Reference Collection. Herbarium of The Field Museum of  
Chicago. Supervisor: Dr. Robin Foster.  
Sept-Oct 1997    Research Assistant, Analysis and identification of Peruvian plants. Herbarium of The  
Field Museum of Chicago. Supervisor: Dr. Robin Foster.  
1997-1998       Member of Conservation International's RAP (Rapid Assessment Program) team:  
Evaluation of Biodiversity in the Cordillera Vilcabamba Region, Cuzco, Peru.  
Evaluation of Biodiversity in Pampas del Heath-Madidi National Park, Bolivia.  
Supervisors: Dr. Robin Foster and Dr. Thomas Schulemberg.  
1996-1998       Research Assistant on various projects at Museum of Natural History, San Marcos  
University, Lima: Botanical research in the zone with lack of information E11, high  
elevation Andes of Tacna; Seasonal variation in the vegetation of Lomas de Lachay,  
Lima; Monitoring the biological impact of El Niño Phenomenon on coastal resources

- and shallow marine areas of Peru; Aquatic and riparian flora of the Yanachaga-Chemillen National Park, Pasco; Lichen diversity Flora of the Nasca Valley, Ica; Study of human impacts on natural resources in the central arid coast of Peru. Supervisor: Mag. Asunción Cano.
- 1995-1999 Flora and vegetation of River Ilo-Moquegua basin and Lomas of Ilo. Thesis to obtain the Professional title of Biologist. Supervisor: Mag. Asunción Cano.
- 1995-1996 Analyses of botanical archaeological remains. Museo Contisuyo, Moquegua, Peru. Supervisors: Dr. Bruce Owen and Dr. Karen Wise.

### Supplemental Education

- June 2008 Conservation Genetics. Organization for Tropical Studies (OTS). Palo Verde Biological Station-Santa Rosa National Park, Costa Rica.
- June 1997 Rapid Assessment Program (RAP) training. Conservation International. Pampas del Heath (Peru) and Madidi National Park (Bolivia).

### Teaching Experience

#### Teaching Assistant:

- Molecular Systematics Lab, Plants in Human Affairs Lab, Integrated Principles of Biology Lab I (University of Florida).
- Survey of the Plant Kingdom Lab, The Human Body (University of Texas).
- General Botany, Plant Physiology, Plant Geography (San Marcos University, Lima).

#### Invited Lecturer:

- Systematics of Cactaceae (San Marcos University, Department of Botany).
- Diversity and taxonomy of Peruvian cacti (Peruvian Cactus and Succulent Society).
- Molecular Techniques for Systematic Studies (San Marcos University, Department of Zoology).

#### Field Course Instructor:

- Tropical Plant Taxonomy (Tambopata Research Center, Madre de Dios, Peru).

### Publications

- Arakaki, M., Christin, P.-A., Nyffeler, R., Lendel, A., Eggli, U., Ogburn, R. M., Spriggs, E., Moore, M. J. and E. J. Edwards. 2011. Contemporaneous and recent radiations of the world's major succulent plant lineages. *Proceedings of the National Academy of Sciences* 108(20): 8379-8384.
- Christin, P.-A., Osborne, C. P., Sage, R. F., Arakaki, M. and E. Edwards. 2011. C<sub>4</sub> eudicots are not younger than C<sub>4</sub> monocots. *Journal of Experimental Botany* 62(9): 3171-3181.
- Rua, G. H., Speranza, P. R., Vaio, M. and M. Arakaki. 2010. A phylogenetic analysis of the genus *Paspalum* (Poaceae) based on cpDNA and morphology. *Plant Systematics and Evolution* 288(3-4): 227-243.
- Arakaki, M., Soltis, D. E., Soltis, P. and P. Speranza. 2010. Characterization of polymorphic microsatellite loci in *Haageocereus* (Trichocereae, Cactaceae). *AJB Primer Notes & Protocols in the Plant Sciences* 97(3): e17-e19.
- López-Vinyallonga, S., Arakaki, M., Garcia-Jacas, N., Susanna, A., Gitzendanner, M., Soltis, D. E. and P. S. Soltis. 2010. Isolation and characterization of novel microsatellite markers for *Arctium minus* (Compositae). *AJB Primer Notes & Protocols in the Plant Sciences* 97(2): e4-e6.
- Arakaki, M., Soltis, D. E. and P. Speranza. 2007. New chromosome counts and evidence of polyploidy in *Haageocereus* and other taxa of tribe Trichocereae (Cactaceae). *Brittonia* 59(3): 290-297.
- Edwards, C. E., Arakaki, M., Quintana-Ascencio, P. F., Soltis, D. E. and P. Soltis. 2007. Isolation and characterization of microsatellite loci from the endangered highlands scrub hypericum (*Hypericum cumulicola*). *Molecular Ecology Notes* 7:1135-1137.

- Arakaki, M., Ostolaza, C., Cáceres, F. and J. Roque. 2006. Cactaceae endémicas del Perú. *In*: B. León, J. Roque, C. Ulloa-Ulloa, N. Pitman, P. Jørgensen and A. Cano (eds.). El Libro Rojo de las Plantas Endémicas del Perú. *Revista Peruana de Biología*, especial issue 13(2):193-219.
- Soltis, P., Soltis, D. and M. Arakaki. 2006. core Caryophyllales. Caryophyllales sensu stricto. Version 07 June 2006. URL: [http://tolweb.org/core\\_Caryophyllales/20965/2006.06.07](http://tolweb.org/core_Caryophyllales/20965/2006.06.07) in The Tree of Life Web Project, <http://tolweb.org/>
- Soltis, P., Soltis, D. and M. Arakaki. 2006. non-core Caryophyllales. Polygonales. Version 07 June 2006. URL: [http://tolweb.org/non-core\\_Caryophyllales/20968/2006.06.07](http://tolweb.org/non-core_Caryophyllales/20968/2006.06.07) in The Tree of Life Web Project, <http://tolweb.org/>
- Soltis, D., Soltis, P. and M. Arakaki. 2006. Saxifragales. Version 27 February 2006. URL: <http://tolweb.org/Saxifragales/20698/2006.02.27> in The Tree of Life Web Project, <http://tolweb.org/>
- Arakaki, M., Panero, J. and B. Crozier. 2003. Relaciones taxonómicas en el género peruano *Weberbauerocereus* Backeb. (Cactaceae). *QUEPO* 17: 62-72.
- Arakaki, M. and A. Cano. 2003. Composición florística de la cuenca del Río Ilo-Moquegua y Lomas de Ilo, Perú. *Revista Peruana de Biología* 10 (1): 5-19.
- Arakaki, M. 2002. Técnicas de colección y preparación de especímenes de cactáceas para herbario y estudios taxonómicos II. *QUEPO* 16:34-39.
- Arakaki, M. 2001. Técnicas de colección y preparación de especímenes de cactáceas para herbario y estudios taxonómicos. *QUEPO* 15:38-45.
- Cano, A., Arakaki, M., Roque, J., La Torre, M. I., Refulio, N. and C. Arana. 2001. Flora vascular en las Lomas de Ancón y Carabayllo (Lima, Perú) durante El Niño 1997-98. *In*: J. Tarazona, W. E. Arntz and E. Castillo de Maruenda (eds.). El Niño en América Latina: Impactos Biológicos y Sociales. Consejo Nacional de Ciencia y Tecnología, Lima.
- Arakaki, M. and A. Cano. 2001. Vegetación y estado de conservación de la Cuenca del Río Ilo-Moquegua, Moquegua, Perú. *Arnaldoa* 8(1): 49-63.
- Alonso, L. E., Alonso, L., Schulemberg, T. S. and F. Dallmeier (eds.). 2001. RAP Working Paper 12: A Biological and Social Assessment of the Northern Cordillera Vilcabamba, Perú. University of Chicago Press, Chicago.
- Arakaki, M. 1999. Microherbario de las plantas de Moquegua (Perú). Field Museum of Chicago, Environmental and Conservation Programs. URL: <http://www.fieldmuseum.org/plantguides/microherbaria.asp>.
- Cano, A., Young K., León B., La Torre M., Arakaki M. and J. Roque. 1998. Estudio comparativo de la flora vascular de los principales humedales de la zona costera del Departamento de Lima, Perú. *In*: Cano A. and K. Young (eds.) Los Pantanos de Villa, Biología y Conservación, Museo de Historia Natural, serie de divulgación N° 11.
- Young, K., León B., Cano A., La Torre M., Arakaki, M. and J. Roque. 1997. Botanical exploration and conservation in Peru: The plants of Cerro Blanco, Nazca. *Biollania*, especial edition N° 6. Bio Centro - Asomuseo, Smithsonian Institution, Caracas.

### Abstracts and Presentations

- Arakaki, M., Christin, P.-A., Nyffeler, R., Lendel, A., Eggli, U., Ogburn, R. M., Spriggs, E., Moore, M. J. and E. J. Edwards. Contemporaneous and recent radiations of the world's major succulent plant lineages. Presented at Evolution 2011, Norman, Oklahoma.
- Arakaki, M., Nyffeler, R., Eggli, U., Ogburn, M., Spriggs, E., Christin, P.-A. and E. Edwards. 2010. Phylogenetic relationships in the Portulacineae (Caryophyllales) –combining phylogenomic and directed PCR approaches. Presented at Botany 2010, Providence, Rhode Island.
- Arakaki, M., Nyffeler, R., Moore, M., Christin, P.-A. and E. Edwards. Using plastid genomic data to date the origin of the cacti. Presented at Botany 2010, Providence, Rhode Island.

- Arakaki, M., Soltis, D. E., Soltis P. S. and P. Speranza. 2010. Population genetics of the Peruvian-Chilean genus *Haageocereus* (Cactaceae). Presented at VI Southern Connection Congress, Bariloche, Argentina.
- Arakaki, M., Ogburn, M., Spriggs, E. and E. Edwards. Update on evolutionary relationships in the Portulacineae from the analysis of nuclear Phytochromes A, B, and C. Presented at Botany 2009, Snowbird, Utah.
- Arakaki, M., Soltis, D. E. and P. Soltis. Systematics of tribe Trichocereae (Cactaceae) and population genetics of *Haageocereus*. Presented at Evolution 2008, Minneapolis, Minnesota.
- Lopez, J. A., Arakaki, M. and P. Rab. Retrotransposon diversity and genome size changes in esociform fishes. Presented at Evolution 2008, Minneapolis, Minnesota.
- Rua, G., Speranza, P., Arakaki, M. and M. Vaio. 2007. Phylogenetic studies of the genus *Paspalum* (Poaceae, Panicoideae) based on sequences of four chloroplast regions. Presented at VII Reunión Argentina de Cladística y Biogeografía. Buenos Aires, Argentina.
- Speranza, P., Rua, G., Arakaki, M. and M. Vaio. 2007. Phylogenetic analyzes of the genus *Paspalum* (Poaceae) based on morphology and cpDNA sequence data. Presented at XII Jornadas de la Sociedad Uruguaya de Biociencias, Montevideo, Uruguay.
- Arakaki, M., Soltis, D. E. and P. Soltis. Use of microsatellites to examine intergeneric hybridization *Haageocereus* x *Espostoa*, and population structure in *Haageocereus*. Presented at Botany 2005, Austin, Texas.
- Arakaki, M., Panero, J. and B. Crozier. Systematics of the Peruvian genus *Weberbauerocereus* (Trichocereae, Cactaceae). Presented at Botany 2003, Mobile, Alabama.
- Arana, C., Cano, A., Salinas, L., Ramírez, R., Roque, J., Arakaki, M., La Torre, M. and A. Ramírez. 2003. Dinámica de la vegetación de las Lomas de Lachay (Lima, Perú). Presented at I Congreso Internacional de Científicos Peruanos, Lima, Perú.
- Cano, A., Arana, C., La Torre, M. I., Roque, J., Arakaki, M. and N. Refulio. 1999. Diversidad florística de las lomas de Lachay (Lima) durante el evento "El Niño 1997-98". Presented at Primer Encuentro de la Red de Impacto Biológico de los Eventos El Niño (RIBEN).
- Cano, A., Ramírez, R., Arana, C., Severino, R., Alban, J., Shiga, B., La Torre, M. I., Arakaki, M., Roque, J., Caro, K., Córdova, S. and J. Duárez. 1997. Observaciones sobre el impacto del "turismo ecológico" en la Reserva Nacional de Lachay. Presented at VII Reunión Científica del Instituto de Ciencias Biológicas Antonio Raimondi, ICBAR-UNMSM.
- Cano, A., La Torre M. I., León, B., Young, K. R., Arakaki, M. and J. Roque. 1995. Avances en el estudio de la flora y vegetación del valle del río Nasca, Ica. Presented at V Reunión Científica del Instituto de Ciencias Biológicas Antonio Raimondi, ICBAR-UNMSM.
- Suni, L., Díaz, L., Mendoza, H., Rosa, R., Terrazas, A. and M. Arakaki. 1993. Evaluación del camote (*Ipomoea batatas*) bajo condiciones de déficit hídrico. Presented at III Reunión Científica del Instituto de Ciencias Biológicas Antonio Raimondi, ICBAR-UNMSM.

### Service to the Profession

Ad-hoc reviewer for American Journal of Botany, Caribbean Journal of Sciences, International Journal of Plant Sciences, Polibotánica, Revista Peruana de Biología, and National Science Foundation GSS (Geography and Spatial Sciences) Program.

Member of Botanical Society of America Graduate Student Research Award Committee (2010-2013).

### Grants and Awards

2010 American Genetics Association Grant for participation in VI Southern Connection Congress, Bariloche, Argentina.

2008 American Genetics Association Tuition Aid Scholarship, through OTS.  
2007 Outstanding International Graduate Student Award, University of Florida.  
2006 National Science Foundation Dissertation Improvement Grant, PI Douglas Soltis.  
2004 Botanical Society of America Graduate Student Research Award.  
2004 Cactus and Succulent Society of America Research Grant.  
2004 Chicago Board of Trade Endangered Species Grant, PI Carlos Ostolaza.  
2004 International Association for Plant Taxonomy Research Grant.  
2003 American Society of Plant Taxonomists Graduate Student Research Grant.  
2000 David Bruton Jr. Graduate Fellowship, University of Texas at Austin.  
1999 Fulbright-Laspau Scholarship.