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Biology Department
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PROFESSIONAL EXPERIENCE

Assistant Professor

Biology Department, University of Massachusetts
Amherst, MA, September 2006-present

Post Doctoral Researcher

Department of Genetics, North Carolina State University
Raleigh, NC, March 2003-August 2006
Supervisor: Michael D. Purugganan

EDUCATION

Ph.D. in Evolutionary Biology

Washington University, St. Louis, MO, January 2003
Evolution, Ecology, and Population Biology Program
Doctoral dissertation: "Molecular Evolution and Population Genetics of a Disease Resistance Locus in *Solanum pimpinellifolium*."
Advisor: Dr. Barbara A. Schaal

B.Sc. in Biology

Universidad de los Andes, Bogotá, Colombia, August 1996
Department of Biology
Thesis: "Molecular Characterization of Wild South American *Phaseolus* Species Using AFLPs"
(original title in Spanish)
Advisor: Dr. Joe Tohme

AWARDS AND HONORS

Catherine M. Lieneman Scholarship in Botany, Washington University, 2000 and 2002.

Howard A. Schneiderman Fellowship, Washington University, 1996.

Colciencias Fellowship. Colombian Institute for the Development of Science and Technology. Bogotá, Colombia. July 1996. Declined.

Lilly Teaching Fellowship. University of Massachusetts, 2008-2009.

FUNDING

NSF Plant Genome Research Program (IOS-1032023): "Genomic structure and contemporary evolution of weediness in red rice". PI: **Ana L. Caicedo**; Co-PIs: Kenneth M.

Olsen, Yulin Jia; Key Collaborators: David Gealy, Nilda Burgos. Sponsor: National Science Foundation. Amount: \$2,490,833. October 2010 - September 2014.

NSF Plant Genome Research Program (DBI-0638820): “The evolutionary genomics of invasive weedy rice”. PI: Kenneth M. Olsen; Co-PIs: **Ana L. Caicedo**, Yulin Jia. Sponsor: National Science Foundation (Plant Comparative Genome Sequencing). Amount: \$1,121,523. October 2006 - September 2010.

Dissertation Improvement Grant (DEB-0073082): “Population genetics of a plant disease resistance gene: *Cf-2* in natural populations of *Lycopersicon pimpinellifolium*”. Sponsor: National Science Foundation. Amount: \$10,000. May 2000 - December 2002.

TEACHING EXPERIENCE

Instructor, Biology Department, University of Massachusetts Amherst.
Molecular Biology of Model Systems, Spring 2007, 2008.
Tropical Field Biology, Spring 2007, 2008.
Population Genetics, Fall 2007, 2008.
Advances in Evolutionary Genomics, Spring 2010.
Topics in Plant Biology, Fall 2010.

Guest Lecturer: Department of Genetics, NC State University.
Evolutionary Genetics, Fall 2004. Instructor: Dr. Michael D. Purugganan.

Teaching Assistant, Department of Biology, Washington University.
Plants, Environment, and Civilization, Spring 2001. Instructor Dr. Barbara A. Schaal.
Evolution, Spring 2000. Instructor: Dr. Jonathan B. Losos.
Fundamentals of Biology I, Spring 1998. Instructor: Dr. Paul S.G. Stein.

Teaching Assistant, Department of Biology, Universidad de los Andes.
Introduction to Biology, Spring 1994. Instructor: Dr. Nohra de Sánchez.
Introduction to Biology, Fall 1994, Spring 1995. Instructor: Dr. Felipe Guhl.

PROFESSIONAL SERVICE

Journal Article Reviewer

American Journal of Botany; Annals of Botany; Bioinformatics; BMC Evolutionary Biology; Crop Protection; Euphytica; Evolution; Genetics; Genome; Molecular Biology and Evolution; Molecular Ecology; Molecular Ecology Notes; Molecular Phylogenetics and Evolution; New Phytologist; Plant Cell; Plant Physiology; PLoS Genetics; PloS ONE; Proceedings of the National Academy of Sciences USA; Theoretical and Applied Genetics.

Ad Hoc Grant Reviewer

Colciencias (Colombia); European Research Area - Plant Genomics (ERA-PG); National Science Foundation (NSF; DEB, DBI, IOS); Natural Environment Research Council (NERC, UK); United States - Israel Binational Science Foundation (BSF); University of Puerto Rico Institutional Research Fund (FIPI).

Panels Served

National Science Foundation (NSF).

UNIVERSITY SERVICE

Departmental/Program Committees

Biology Internet Technology Committee: 2010-present.

Hiring Priorities Committee, 2007-2008; 2010-present.

Personnel Committee, 2009-2010.

Conservation Genetics Assistant Professor Search Committee (Dept. of Natural Resources Conservation), 2008-2009.

Plant Pathology/Molecular Genetics Assistant Professor Search Committee (Dept. of Plant Soil and Insect Sciences), 2007.

Organismic and Evolutionary Biology (OEB) Steering Committee, 2007-present.

OEB Seminar Committee, 2009-present.

OEB Evolutionary Core Course Committee, 2009-present.

Plant Biology (PB) Graduate Operations Committee, 2007-present.

PB Graduate Admissions Committee, 2008-present.

Plant Metabolism Assistant Professor Search Committee, 2007-2008.

Biology Greenhouse Committee, 2008-present.

Plant Biology Symposium Organizer, 2008.

Student advising/mentoring

PhD Thesis committees: Zeke Nims (PB), Carrie Thurber (PB), Sasha Tulchinsky (OEB), Ian Gillis (PB)

Masters Dissertation committees: Natalie Feliciano (PB), Enne Akor (BMB), Mini Aggarwal (PB), Jeff Chiecko (PB), Holly Bernardo (OEB)

Undergraduate Thesis committees: Jessica Reusch, Mona Salameh, Nicole Eckart, Stephanie Craig.

Graduate student rotations: Carrie Thurber (PB), Ian Gillis (PB)

RESEARCH SUPERVISION

• University of Massachusetts Amherst:

Post-doctoral Researcher: Dr. Michael Reagon, March 2007-present

PhD advisees: Carrie Thurber (PB), Ian Gillis (PB)

Undergraduate work-study: Daniela Schmieder, Spring 2007

Undergraduate independent study: Neil Kalra, Fall 2007, Spring 2008; Mario Moreira, Spring 2008; Nicole Eckart, Fall 2008-Spring 2010; Justin Nicholatos, Spring 2009-Spring 2010; Stephanie Craig, Fall 2009-Spring 2010; Lauren Bishop, Spring 2010; Rafaela Dos Santos, Summer 2010; Lauren Resnick, Fall 2010.

HHMI undergraduate intern: Mona Salameh, Fall 2007, Spring, Summer 2008; Nicole Eckart, Summer 2009.

• North Carolina State University

Undergraduate work-study student: Alexa Avalos, Spring 2004.

• Washington University

Undergraduate work-study student: Anna Pachske, Spring, Summer 2002.

Graduate rotation student: Michele Johnson, Spring 2002.

PROFESSIONAL SOCIETIES

Sigma Xi, The Scientific Honor Society
Society for the Study of Evolution
Botanical Society of America
Society for Molecular Biology and Evolution

FIELD EXPERIENCE

OTS Tropical Plant Systematics Course. Costa Rica, June-July, 2000.
Collecting Trip, Perú, December 1999-January 2000.
IV Course in Tropical Ecology and Conservation Biology, Colombia, June-July 1994.

PUBLICATIONS

Journal papers

- Mather, K.A., J. Molina, J.M. Flowers, S. Rubinstein, B.L. Rauh, A. Lawton-Rauh, **A.L. Caicedo**, K.L. McNally, M.D. Purugganan. Migration, isolation and hybridization in island populations: The case of Madagascar rice. *Molecular Ecology*, 19: 4892-4905.
- Thurber, C.S, M. Reagon, B.L. Gross, K.M. Olsen, Y. Jia, and **A.L. Caicedo**. 2010. Molecular evolution of shattering loci in U.S. weedy rice. *Molecular Ecology*, 19: 3271-3284.
- Gross, B.L., M. Reagon, S.C. Hsu, **A.L. Caicedo**, Y. Jia, and K.M. Olsen. 2010. Seeing red: the origin of grain pigmentation in US weedy rice. *Molecular Ecology*, 19: 3380-3393.
- Reagon, M., C.S. Thurber, B.L. Gross, K.M. Olsen, Y. Jia, and **A.L. Caicedo**. 2010. Genomic patterns of nucleotide diversity in divergent populations of U.S. weedy rice. *BMC Evolutionary Biology*, 10: 180.
- Lee, S, S. Costanzo, Y. Jia, K.M. Olsen, and **A.L. Caicedo**. 2009. Evolutionary dynamics of the genomic region around the blast resistance gene *Pi-ta* in AA genome *Oryza* species. *Genetics*, 183. 1315-1325.
- **Caicedo, A.L.**, C. Richards, I.M. Ehrenreich, and M.D. Purugganan. 2009. Complex rearrangements lead to novel chimeric gene fusion polymorphisms at the *Arabidopsis thaliana* *MAF2-5* flowering time gene cluster. *Molecular Biology and Evolution*, 26: 699 - 711.
- **Caicedo, A. L.** 2008. Geographic diversity cline of *R* gene homologs in wild populations of *Solanum pimpinellifolium* (Solanaceae). *American Journal of Botany* 95: 393-398.
- Mather, K.A., **A.L. Caicedo**, N.R. Polato, K.M. Olsen, S. McCouch and M.D. Purugganan. 2007. The extent of linkage disequilibrium in rice (*Oryza sativa* L.). *Genetics* 177: 2223-2232.
- **Caicedo, A.L.** *, S.H. Williamson *, R.D. Hernandez, A. Boyko, A. Fledel-Alon, T.L. York, N. Polato, K.M. Olsen, R. Nielsen, S. McCouch, C.D. Bustamante, and M.D. Purugganan. 2007. Genome-wide patterns of nucleotide polymorphism in domesticated rice. *PLoS Genetics* 3: 1745-1756. *shared authorship
- Olsen, K.M., **A.L. Caicedo**, and Y. Jia. 2007. Evolutionary genomics of weedy rice in the U.S.A. *Journal of Integrative Plant Biology* 49, 811-816.

- Korves, T.M., K.J. Schmid, **A.L. Caicedo**, C. Mays, J.R. Stinchcombe, M.D. Purugganan, and J. Schmitt. 2007. Fitness effects associated with the major flowering time gene *FRIGIDA* in *Arabidopsis thaliana* in the field. *American Naturalist* 169, E141-E157.
- Olsen, K.M., **A.L. Caicedo**, N. Polato, A. McClung, S. McCouch, M.D. Purugganan. 2006. Selection under domestication: Evidence for a sweep in the rice *Waxy* genomic region. *Genetics* 173: 975-983.
- Stinchcombe, J.R., **A.L. Caicedo**, R. Hopkins, C. Mays, M.D. Purugganan, and J. Schmitt. 2005. Vernalization sensitivity in *Arabidopsis thaliana*: the effects of latitude and *FLC* variation. *American Journal of Botany* 92: 1701-1707.
- **Caicedo, A.L.** and M.D. Purugganan. 2005. Comparative plant genomics: frontiers and prospects. *Plant Physiology* 138: 545-547.
- **Caicedo, A.L.** and B.A. Schaal, 2004. Heterogeneous evolutionary processes affect *R* gene diversity in natural populations of *Solanum pimpinellifolium*. *Proceedings of the National Academy of Sciences USA* 101: 17444-17449.
- **Caicedo, A.L.**, J.R. Stinchcombe, K.M. Olsen, J. Schmitt and M.D. Purugganan, 2004. Epistatic interaction between the *Arabidopsis FRI* and *FLC* flowering time genes generates a latitudinal cline in a life history trait. *Proceedings of the National Academy of Sciences USA* 101: 15670-15675.
- **Caicedo, A.L.** and B.A. Schaal, 2004. Population structure and phylogeography of *Solanum pimpinellifolium* inferred from a nuclear gene. *Molecular Ecology* 13: 1871-1882.
- Schaal, B.A., J.F. Gaskin, and **A.L. Caicedo**, 2003. Phylogeography, haplotype trees, and invasive plant species. *Journal of Heredity* 94: 197-204.
- Kover, P.X. and **A.L. Caicedo**, 2001. The genetic architecture of disease resistance in plants and the maintenance of recombination by parasites. *Molecular Ecology* 10: 1-16.
- **Caicedo, A.L.**, B.A. Schaal, and B.N. Kunkel, 1999. Diversity and molecular evolution of the *RPS2* resistance gene in *Arabidopsis thaliana*. *Proceedings of the National Academy of Sciences USA* 96: 302-306.
- **Caicedo, A.L.**, E. Gaitan, M.C. Duque, O. Toro, D.G. Debouck, J. Tohme, 1999. AFLP fingerprinting of *Phaseolus lunatus* L. and related wild species from South America. *Crop Science* 39: 1497-1507.

Book Chapters

- **Caicedo, A.L.** and I. Peralta. *In press*. Basic information on the plant. *In* B. Liedl, J. Labate, J. Stommel, A. Slade, S. Hurst (ed.) *Tomato (Genomics of Fruit and Vegetable Crops series)*, Science Publishers, NH.
- Labate, J.A., S. Grandillo, T. Fulton, S. Muños, **A.L. Caicedo**, I. Peralta, Y. Ji, R.T. Chetelat, et al. (39 authors in total). 2007. Tomato. p. 1-125. *In* C. Kole (ed.) *Genome*

mapping and molecular breeding in plants: Volume 5 Vegetables. Springer Publishing Co., NY.

INVITED SEMINARS

Invited Departmental seminars

- Natural Science Department, Colby Sawyer College, New London, NH, March 2010.
- Department of Ecology and Evolution, Stony Brook University, Stony Brook, NY, November 2009.
- Microbial and Plant Genomics Institute, University of Minnesota, St. Paul, MN, November 2009.
- Genetics Graduate Program, University of New Hampshire, Durham, NH, February 2008.
- Laboratoire Ecologie, Systématique, Evolution, UMR ENGREF-CNRS 8079, Bât. 360, Université Paris-Sud, 91405 Orsay Cedex, France, June 2007.
- Biology Department, University of Massachusetts, Boston, MA, April 2007.
- Molecular Cell Biology Graduate Program, University of Massachusetts, Amherst, MA, November 2006.
- Plant Biology Graduate Program, University of Massachusetts, Amherst, MA, October 2006.
- Dale Bumpers National Rice Research Center, Stuttgart, AR, May 2006.
- Biology Department, University of Massachusetts, Amherst, MA, February 2006.
- Department of Ecology and Evolutionary Biology, University of California, Irvine, CA, January 2006.
- Department of Biology, University of Kentucky, Lexington, KY, December 2005.
- Department of Ecology and Evolutionary Biology, University of California, Los Angeles, CA, December 2005.
- Department of Integrative Biology, University of Texas, Austin, TX, November 2005.
- Boyce Thompson Institute for Plant Research, Ithaca, NY, October 2005.
- Biology Department, Amherst College, Amherst, MA, February 2005.
- Department of Biology, University of Massachusetts, Amherst, MA, December 2004.
- Museo de Historia Natural, Lima, Perú, January 2000.

Invited symposia

- **Caicedo A.L.** How to evolve a weed: the origins of weedy rice in the U.S. Minority Affairs - Plant Systems and Genomic Biology Minisymposium, Plant Biology 2010 - ASPB annual meeting. Palais des Congrès, Montréal, Canada, August 2010.
- **Caicedo, A.L.** The Origin Of Weediness In U.S. Red Rice. Weedy and Invasive Plant Genomics workshop, Plant and Animal Genome XVIII Conference. Town & Country Convention Center, San Diego, CA, January 2010.
- **Caicedo, A.L.** Crops and weeds: some evolutionary genomics applications (original title in Spanish). I Simposio Red Colombiana de Biología Evolutiva - COLEVOL. Universidad de los Andes, Bogotá, Colombia, November 2008.
- **Caicedo, A.L.** Genome-wide patterns of nucleotide polymorphism in domesticated rice. Genetics of Crop Domestication. The Banbury Center, Cold Spring Harbor Laboratory, New York, U.S.A., October 2007.

- **Caicedo, A.L.** Crops and weeds: insights from plant population genomics. Conférences Jacques Monod: Environmental genomics: from individual genomes to genomes of complex communities. Station Biologique, Roscoff, France, June 2007.
- **Caicedo, A.L., S. H. Williamson, R. Nielsen, S. McCouch, C. D. Bustamante, M. D. Purugganan.** The patterns of nucleotide polymorphism in the domesticated rice genome. The 5th Okazaki Biology Conference: Speciation and Adaptation - Ecological Genomics of Model Organisms and Beyond. National Institute for Basic Biology, Okazaki and Yamaha Resort Tsumagoi, Kakegawa, Japan, March 2007.
- **Caicedo, A.L.** Genomic patterns of polymorphism in domesticated rice (*Oryza sativa*) and its wild ancestor (*O. rufipogon*). CNRS Course in Residence: High-throughput Molecular Biology Methods in the Environmental Sciences. Station Biologique de Roscoff, France, September 2005.
- Schaal, B.A. and **A.L. Caicedo.** Genetic variation in disease resistance: *Arabidopsis* and *Solanum*. Annual Symposium: Genes in Ecology, Ecology in Genes. Overland Park, KS, U.S.A., November 2003.
- **Caicedo, A.L.** and B.A. Schaal. Population genetics of the *Cf-2* disease resistance gene in wild populations of *Lycopersicon pimpinellifolium*. European Science Foundation Workshop: Adaptation of Plant Populations to Environmental Insult. University of Newcastle, Newcastle upon Tyne, United Kingdom, July 2001.

CONTRIBUTED PRESENTATIONS AND POSTERS

- **A.L. Caicedo.** The evolutionary genomics of U.S. weedy rice. **Oral Presentation.** Annual meeting of the Society of Molecular Biology and Evolution. Barcelona, Spain, June 2008.
- Olsen, K.M., **A.L. Caicedo,** and Y. Jia. Evolutionary genomics of invasive weedy rice. **Poster.** Plant and Animal Genome XV Conference. Town & Country Convention Center, San Diego, CA, January 2007.
- **Caicedo, A.L.** and M.D. Purugganan. The levels and patterns of polymorphism in the rice genome. **Oral presentation.** Annual meeting of the Society of Molecular Biology and Evolution. Tempe, AZ, June 2006.
- **Caicedo, A.L., S. Williamson, N. Polato, A. Fledel-Alon, S. McCouch, C. Bustamante, and M.D. Purugganan.** Genomic patterns of polymorphism in *Oryza sativa* and *O. rufipogon*. **Poster.** 5th International Rice Genetics Symposium. Manila, Philippines, November 2005.
- **Caicedo, A.L.** and M.D. Purugganan. The population genomics of domesticated rice (*O. sativa*) and its wild ancestor. **Oral presentation.** Annual meeting of the Society for the Study of Evolution. University of Alaska, Fairbanks, AK, June 2005.
- **Caicedo, A.L.** and M.D. Purugganan. The molecular basis of a latitudinal cline in *Arabidopsis thaliana* flowering time. **Oral presentation.** Annual meeting of the Society for the Study of Evolution. Colorado State University. Fort Collins, CO, June 2004.

- Purugganan, M.D., S. McCouch, R. Nielsen, C. Bustamante, B. Gardner, **A.L. Caicedo**, and K.M. Olsen. Evolutionary genomics of rice. **Poster**. Plant and Animal Genome XII Conference. Town & Country Convention Center, San Diego, CA, January 2004.
- **Caicedo, A.L.** Molecular evolution and population genetics of the *Cf-2* locus in *Solanum pimpinellifolium*. **Poster**. Gordon Conference: Evolutionary & Ecological Functional Genomics Colby-Sawyer College, New London, NH, August 2003.
- **Caicedo, A.L.** Genética poblacional de un locus de resistencia en poblaciones naturales de *Solanum pimpinellifolium*. **Poster**. VIII Congreso Latinoamericano de Botánica. Cartagena, Colombia, October 2002.
- **Caicedo, A.L.** and B.A. Schaal. Population genetics of a disease resistance locus in *Lycopersicon pimpinellifolium*. **Oral presentation**. Annual meeting of the Society for the Study of Evolution. University of Illinois. Champaign-Urbana, IL, June 2002.
- **Caicedo, A.L.** and B.A. Schaal. Comparative population genetics of a neutral locus and a disease resistance gene in *Lycopersicon pimpinellifolium*. **Poster**. Annual meeting of the Society for the Study of Evolution. University of Tennessee, Knoxville, TN, June 2001.
- **Caicedo, A.L.**, M.C. Duque, E. Gaitán, O. Toro, D. Debouck, and J. Tohme. AFLP characterization of wild South American *Phaseolus* species. **Poster**. Annual meeting of the Society for the Study of Evolution. Washington University, St. Louis, MO, June 1996.