

JUAN CARLOS LÓPEZ-GUTIÉRREZ

The Holden Arboretum. 9500 Sperry Road. Kirtland, Ohio 44094
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EDUCATION

GRADUATE

Ph.D. of Sciences in Ecology (*May 2003*) Universidad Central de Venezuela. Caracas, Venezuela.
Doctoral Thesis: Role of arbuscular mycorrhizae and rhizospheric microorganisms on organic phosphorus mineralization in acid savanna soils.

UNDERGRADUATE

Bachelor of Arts Major in Biology (*May 1996*) Washington University. St. Louis, Missouri. U.S.A.

LANGUAGE TRAINING

French Language and Culture Course (*September 2003-January 2004*)

Alliance Française. Dijon, France.

Certificate from the English Program for Internationals (*July 1992*)

University of South Carolina. Columbia, South Carolina. U.S.A.

APPOINTMENTS

The Holden Arboretum. Science and Research Department. Kirtland, U.S.A.

Case Western Reserve University. Department of Biology. Cleveland, U.S.A.

Postdoctoral Fellow (*July 2007-present*).

Laboratory of Dr. David Burke.

Microbial community structure and function in the rhizosphere. Ecosystem ecology.

Pennsylvania State University. Department of Horticulture. State College, U.S.A.

Postdoctoral Fellow (*July 2004-June 2007*).

Laboratory of Dr. Roger Koide.

Causes and consequences of the structure of ectomycorrhizal fungal communities.

Temperature acclimation of ectomycorrhizal fungal respiration along a broad latitudinal gradient.

Institute National de la Recherche Agronomique-Université de Bourgogne. Dijon, France.

Postdoctoral Fellow (*May 2003-June 2004*). Laboratoire de Microbiologie et Géochimie des Sols.

Molecular signatures of soil bacterial communities using real-time PCR.

Universidad Central de Venezuela. Facultad de Ciencias. Caracas, Venezuela.

Research Assistant. (*January 2002-December 2002*).

Laboratory of Dr. Marcia Toro.

Effect of agricultural practices on arbuscular mycorrhizae and associated microbiota and their role on agrosystem sustainable development.

Verbal, Corporación Educativa. Caracas, Venezuela.

Course Coordinator (*September 2001-December 2001*).

Unidad Educativa "Colegio Los Arcos"

Part-time Teacher (*September 1998 – July 2001*)

High School student training and counseling for standardized test taking for university admission.

Verbal, Corporación Educativa. Caracas, Venezuela.

Part-time ESL Teacher/Translator (*September 1997 – December 2002*)

In-company ESL teacher. Technical and scientific Spanish-English interpreter and translator.

University of Chicago. Department of Ecology and Evolution. Chicago, U.S.A.

Research Assistant. (May 1995-August 1995).

Laboratory of Dr. Joy Bergelson.

Ecological risk assessment of transgenic plant release in native populations.

Washington University. Biology Department. St. Louis, U.S.A.

Independent Undergraduate Research. Howard Hughes/Washington University Fellow.

(January 1994-August 1994).

Laboratory of Dr. Joy Bergelson.

Effects of host stress and age on the performance of the parasitic plant *Cuscuta salina*.

PUBLICATIONS

- Bergelson, J.; Purrington, B.; Palm, C.J. and **López-Gutiérrez, J.C.** 1996. Cost of resistance: a test using transgenic *Arabidopsis thaliana*. Proc. R. Soc. Lond. B. 263:1159-1663.
- **López-Gutiérrez, J.C.**; Toro, M. and López-Hernández, D. 2001. Micorrizas arbusculares y actividades enzimáticas en la rizósfera de *Trachypogon plumosus* Ness en tres sabanas de suelos ácidos. Acta Biológica Venezolana. 21: 49-57.
- Frost, A.; **López-Gutiérrez, J.C.** and Purrington, C.B. 2003. Fitness of *Cuscuta salina* (Convolvulaceae) parasitizing *Beta vulgaris* (Chenopodiaceae) grown under different salinity regimes. Am. J. Bot. 90:1032-1037.
- **López-Gutiérrez, J.C.**; Toro, M. and López-Hernández, D. 2004. Arbuscular mycorrhiza and enzymatic activities in the rhizosphere of *Trachypogon plumosus* in three acid savanna soils. Agric. Ecosys. Environ. Special Issue: Soil functioning under pastures in intertropical areas. 103:405-411.
- **López-Gutiérrez, J.C.**; Henry, S.; Hallet, S.; Martin-Laurent, F.; Catroux, G. and Philippot, L. 2004. Quantification of a novel group of nitrate reducing bacteria in the environment by real-time PCR. J. Microbiol. Methods. 57:399-407
- **López-Gutiérrez, J.C.**; Toro M. and López-Hernández, D. 2004. Seasonality and organic phosphorus mineralization in rhizospheric acid savanna soils. Soil Biol. Biochem. 10:1675-1684.
- Martin-Laurent, F.; Cornet, L.; Ranjard, L., **López-Gutiérrez, J.C.**; Philippot, L.; Scharwitz, C.; Chaussod, R.; Catroux, G. and Soulas, G. 2004. Evidence for missing link between atrazine-degrading activity, atrazine-degrading genetic potential and global structure of soil microbial communities in three French agricultural soils. FEMS Microbiol. Ecol. 48:425-435.
- Henry, S.; Baudoin, E.; **López-Gutiérrez, J.C.**; Martin-Laurent, F.; Brauman A. and Philippot, L. 2004. Quantification of denitrifying bacteria in soil by *nirK* gene targeted real-time PCR. J. Microbiol. Methods. 59(3):327-335.
- **López-Gutiérrez, J.C.**; Philippot, L. and Martin-Laurent, F. 2005. Impact of maize mucilage on atrazine mineralization and *atzC* abundance. Pest. Manag. Sci. 61:838-844.
- **López-Gutiérrez, J.C.**; Malcolm, G.M.; Eissenstat, D.M. and Koide, R.T. Variation in respiratory response to temperature by ectomycorrhizal fungi from contrasting latitudes. Oecologia. (In review)
- Malcolm, G.M.; **López-Gutiérrez, J.C.**; Eissenstat, D.M. and Koide R.T. Acclimation to temperature and temperature sensitivity of metabolism by ectomycorrhizal fungi. Glob. Change Biol. (In review)
- Malcolm, G.M.; **López-Gutiérrez, J.C.** and Koide R.T. Respiratory acclimation to temperature by decomposer communities in red pine (*Pinus resinosa*) litter at different times of year. Soil Biol. Biochem. (In preparation)

HONORS AND AWARDS

- **Award from the Venezuelan Research Promotion System (SPI).** Category: Level I.
January 2007 - December 2008.
- **Award from the Venezuelan Research Promotion System (SPI).** Category: Level I.
January 2005 - December 2006.
- **FEMS Young Scientist Travel Grant.** Federation of European Microbiological Societies.
July 2003.
- **Postdoctoral Fellow from the Burgundy Region.** INRA-Université de Bourgogne.
May 2003 – May 2004.
- **Doctoral Thesis Qualified as "Excellent" by the Jury.** Postgrado de Ecología. Facultad de Ciencias. Universidad Central de Venezuela.
May 2003.
- **Award to the Best Poster for Thesis Projects in Ecology.** Veinte años de Investigación de los Postgrados en Biología, Menciones Ecología y Zoología. Universidad Central de Venezuela.
September 28th 2001.
- **Award from the Venezuelan Research Promotion System (SPI).** Category: Candidate.
July 1998 - July 2001.
- **Doctoral Scholarship Program from Comisión Nacional de Ciencia y Tecnología.**
October 1996 – June 2002.
- **Howard Hughes Fellow for Undergraduate Research at Washington University.**
May 1994 - August 1994
- **Undergraduate Scholarship Galileo Program from Fundación Gran Mariscal de Ayacucho.**
August 1991 - May 1996

ADMINISTRATIVE AND ACADEMIC DUTIES

International Society of Food Agriculture and Environment (ISFAE)

Vice Chair. Subsection: Microbial Ecology (*May 2005-present*)

Promote ISFAE. Review scientific contributions to the *Journal of Food Agriculture and Environment*.

Sociedad Venezolana de Ecología. Electoral Committee (*August 1997-December 1997*)

Organization of the elections for the Board of directors for the period 1998-2002.

Washington University. Biology Department. St. Louis, U.S.A. Mentor for a High School student in the Young Scientist Program (*January 1995-April 1995*)

Phenotypic response of *A. thaliana* ecotypes to different *Pseudomonas syringae* strains.

Washington University. Student Union. St. Louis, U.S.A.

Treasurer of the Association of Latin American Students (A.L.A.S.) (*August 1993-May 1994*)

Organization of social and cultural events. Budget administration.

PRESENTATIONS IN CONGRESSES AND SYMPOSIA

- Malcolm, G., **López-Gutiérrez, J.C.**, Koide, R.T. and Eissenstat, D.M. Acclimation to Temperature by Ectomycorrhizal Fungi.
Poster in the 90th Ecological Society of America Annual Meeting.
August 2005. Montreal, Canada.
- Malcolm, G., **López-Gutiérrez, J.C.**, Koide, R.T. and Eissenstat, D.M. Adaptation and Acclimation to Temperature by Ectomycorrhizal Fungi.
Poster in the Northeastern Ecology and Evolution Conference. Penn State University.
March 2005. State College, Pennsylvania. U.S.A.
- **López-Gutiérrez, J.C.**, Henry, S., Hallet, S., Martin-Laurent, F., Catroux, G. and Philippot, L. Quantification of a novel group of nitrate reducing bacteria in the environment by real-time PCR.
Oral presentation in the 10th International Symposium on Microbial Ecology. ISME-10.
August 2004. Cancún, Mexico.
- **López-Gutiérrez, J.C.**, Henry, S., Hallet, S., Martin-Laurent, F., Catroux, G. and Philippot, L. Quantification d'un nouveau groupe de bactéries nitrate réductrices par real-time PCR.
Poster in the VI ème Congrès National de la Société Française de Microbiologie.
May 2004. Bordeaux, France.
- **López-Gutiérrez, J.C.**, Henry, S., Hallet, S., Martin-Laurent, F., Catroux, G. and Philippot, L. Quantification of a novel group of nitrate reducing bacteria in the environment by real-time PCR.
Oral presentation in the II Scientific Meeting: COST Action 856.
March 2004. Marburg, Germany.
- **López-Gutiérrez, J.C.**, Toro, M., López-Hernández, D., Hernández, Y.D. and Bazó, I. Mineralización de fósforo orgánico en la rizósfera de *Trachypogon*.
Oral presentation in the V Congreso Venezolano de Ecología.
November 2003. Margarita, Venezuela.
- **López-Gutiérrez, J.C.**, Toro, M., and López-Hernández, D. Organic phosphorus mineralization in rhizospheric savanna soils.
Oral Presentation in the II International Conference: Enzymes in the Environment.
July 2003. Prague, Czech Republic.
- **López-Gutiérrez, J.C.**, Toro, M., and López-Hernández, D. Cambios biológicos relacionados con la fertilización fosforada en la rizósfera de *Trachypogon plumosus* Ness, especie dominante en las sabanas ácidas venezolanas.
Oral presentation in the IV Congreso Venezolano de Ecología. Universidad de los Andes.
October 2001. Mérida, Venezuela.
- Toro, M., **López-Gutiérrez, J.C.**, and Hernández-Valencia, I. Actividad biológica en la micorrizósfera de *Trachypogon plumosus* Ness en tres suelos ácidos de sabana.
Oral presentation in the IV Congreso Venezolano de Ecología. Universidad de los Andes.
October 2001. Mérida, Venezuela.
- **López-Gutiérrez, J.C.**, Toro, M., and López-Hernández, D. Rol de las micorrizas arbusculares y los microorganismos en la mineralización de fósforo orgánico en suelos ácidos de sabana.
Poster in "Veinte años de Investigación de los Postgrados de Ecología y Zoología". Universidad Central de Venezuela. September 2001. Caracas, Venezuela.
- **López-Gutiérrez, J.C.**, Toro M., and López-Hernández, D. Changes in rhizospheric biological dynamics of *Trachypogon plumosus* Ness affected by phosphate fertilization in three acid savanna soils.
Poster in the III International Congress on Mycorrhizae. University of Adelaide.
July 2001. Adelaide, Australia.

- Toro, M., **López-Gutiérrez, J.C.**, Hernández-Valencia, I., and López-Hernández, D. Biological activity in the mycorrhizosphere of *Trachypogon plumosus* Ness, dominant species in Venezuelan acid savannas.
Poster in the III International Congress on Mycorrhizae. University of Adelaide.
 July 2001. Adelaide, Australia.
- **López-Gutiérrez, J.C.**; Toro, M. and López-Hernández, D. Mycorrhiza and phosphatase activity in the rhizosphere of *Trachypogon* in three acid savanna soils.
Oral presentation in the Symposium: Soil functioning under pastures in intertropical areas.
 October 2000. Brasilia, D.F. Brazil.
- **López-Gutiérrez, J.C.**, Toro, M. and López-Hernández, D. Utilización del fósforo y micotrofia de *Trachypogon plumosus* Ness en ecosistemas de sabana de suelos ácidos tropicales.
Poster in I Simposio Iberoamericano de Micorrizas. Universidad de Guanajuato.
 September 2000. Guanajuato, Mexico.
- **López-Gutiérrez, J.C.**; Paolini, J; López Hernández, D and Toro, M. Rhizospheric phosphatase activity and phosphate dynamics of three acid savanna soils.
Poster in the Conference Enzymes in the Environment.
 July 1999. Granada, Spain.
- Toro, M.; Blones, J.; **López-Gutiérrez, J.C.**; Figueroa, D. and Lopez Hernández, D. Interacciones microbianas de la rizósfera relacionadas con la nutrición fosforada de las plantas: aplicación en suelos ácidos tropicales.
Poster in I Jornadas de Investigación del Instituto de Zoología Tropical, UCV.
 May 1999. Caracas, Venezuela.
- **López, J.C.**, Zentella, R., and Kunkel, B.N. Characterization of an *Arabidopsis* line with altered disease resistance.
Poster in Plant Biology Retreat. Washington University.
 March 1996. Lake of the Ozarks, Missouri. U.S.A.
- Verbsky, M., **Lopez, J.C.**, Aaron, V., and Kunkel, B.N. Molecular genetic analysis of disease resistance in *Arabidopsis thaliana*.
Poster in the 6th. International Arabidopsis Conference. University of Wisconsin.
 June 1995. Madison, Wisconsin. U.S.A.
- **López, J.C.** and Purrington, C.B. Effect of host stress in the performance of the parasitic plant *Cuscuta salina*.
Oral presentation in the Undergraduate Research Symposium of the Biological Science and Psychology. University of Chicago.
 November 1994. Chicago, Illinois. U.S.A.
- **López, J.C.** Do stressed plants taste better?
Oral presentation in Plant Biology Retreat. Washington University.
 October 1994. Meramec, Missouri. U.S.A.
- Aaron, V., **López, J.C.** and Kunkel, B.N. Genetic characterization of a new resistant mutant in *Arabidopsis thaliana*.
Poster in the Plant Biology Retreat. Washington University.
 October 1994. Meramec, Missouri. U.S.A.
- **López, J.C.** and Purrington, C.B. Effect of host stress in the performance of the parasitic plant *Cuscuta salina*.
Oral presentation in Howard Hughes/Washington University Fellow's Symposium.
 September 1994. St. Louis, Missouri. U.S.A.