

# Raúl Edgardo Macchiavelli

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## Education

**Ph.D., Statistics.** The Pennsylvania State University, 1992. (G.P.A.: 4.00/4.00)  
Dissertation Title: "Likelihood-based Procedures and Order Selection in Higher Order Antedependence Models"

**Magister Scientiae, Biometría (M.S., Biometry).** Universidad Nacional de Buenos Aires, Argentina, 1987. (G.P.A.: 9.47/10.00, equiv. to 3.79/4.00)  
Master's Thesis: "Fundamentals and Applications of Statistical Analysis in Sampling Insect Populations"

**Ingeniero Agrónomo (Agronomy).** Universidad Nacional de Córdoba, Argentina, 1981. (G.P.A.: 9.27/10.00, equiv. to 3.71/4.00)

## Higher Education Work Experience

University of Puerto Rico (Mayagüez)

**Dean and Director of the College of Agricultural Sciences.** 2015-2017

**Director of Graduate Studies and Associate Dean of Academic Affairs.** 2013-2015.

**Professor.** Department of Agronomy and Soils (now Dept. of Agroenvironmental Sciences). 2001-present. Teaching undergraduate and graduate Biometry courses. Supervising undergraduate seminar and summer practice. Teaching Statistical Computer Packages, Generalized Linear Models, Mixed Models courses. Supervising graduate students.

**Associate Director,** Office of Graduate Studies. 2001-2003.

**Associate Professor.** Department of Agronomy and Soils. 1996-2001. Taught undergraduate and graduate Biometry courses. Supervised undergraduate seminar and summer practice. Taught Statistical Computer Packages course.

Pennington Biomedical Research Center, Louisiana State University

**Director,** Biostatistics Laboratory. 1994 - 1996. Supervised all statistical aspects in the research activities of the center.

Louisiana State University, Department of Experimental Statistics

**Assistant Professor.** 1992 - 1996. Taught undergraduate and graduate level courses in Statistical Methods, Applied Least Squares, Categorical Data Analysis. Supervised graduate students.

The Pennsylvania State University, Department of Statistics

**Lecturer.** Taught Elementary Statistics, Experimental Methods, Applied Statistics and Analysis of Variance. 1990-1992.

**Graduate Assistant.** Taught laboratory classes of Statistics. Graded graduate and undergraduate level courses. 1988-1990.

Universidad Nacional de Córdoba (Argentina), Facultad de Ciencias Agropecuarias

**Assistant Dean for Research.** Assisted the Dean of Agriculture . Coordinated the Office of Research Projects. Evaluated proposals and authorized grant applications. 1987-1988.

**Assistant Professor of Statistics and Biometry.** Taught courses in Statistics, Biometry and Experimental Design. Designed course contents. Supervised instructors and graduate assistants. Coordinated seminars for instructors. 1986-1988.

**Lecturer.** Taught courses in Statistics, Biometry, Experimental Design and Plant Breeding. 1981-1985.

**Teaching Assistant.** Taught laboratory classes in Botany, Plant Breeding and Biometry. Assisted professors in preparation of class materials. 1978-1981.

Additional Teaching Experience

**Visiting CELFI Professor.** Health and Environment: Integrating spatio-temporal phenomena using frequentist and Bayesian approaches. Facultad de Ciencias Exactas y Naturales, National University of Buenos Aires. August 6-15, 2018.

**Lecturer,** Internship program in Internal Medicine and Family Medicine, Mayagüez Medical Center, Mayagüez, Puerto Rico, 2011-2013.

**Invited Professor.** Course on Statistical Principles in Animal Production Experiments. Instituto Agronómico Mediterráneo de Zaragoza, CIHEAM, Zaragoza, Spain, February 2001, April 2008, April 2010, March 2012, February 2014, February 2016, February 2018.

**Visiting FOMECA Professor.** Course on Analysis of Longitudinal Data, Master of Science Program in Applied Statistics, National University of Rosario, Argentina, October-November, 2002.

**Invited Professor.** Course on Categorical Data Analysis, Master of Science Program in Applied Statistics, National University of Córdoba, Argentina, June-November, 2001.

**Visiting FOMECA Professor,** Facultad de Agronomía, Universidad Nacional de Buenos Aires, Argentina. Short course on Statistical Analysis of Repeated Measures, November 1999.

**Coordinator.** Special Course on Sampling Biological Populations. Instituto Nacional de Tecnología Agropecuaria, Buenos Aires (Argentina). July-August 1987.

**Visiting Professor.** Universidad Nacional de Mar del Plata, Argentina. Taught graduate level courses in Experimental Design. Advised graduate students in M.S. program in Animal Production. September-December 1986 and 1987.

**Invited Professor.** Universidad Nacional de Buenos Aires, Argentina. Taught course in Advanced Calculus (M.S. program in Biometry). September-December 1985.

## **Research Experience**

### **Research Interests**

Generalized linear models (repeated measures, longitudinal studies). Discrete distributions and categorical data analysis. Multivariate analysis (patterned covariance matrices, general linear model). Statistical applications in agriculture (plant breeding, soil science), entomology, ecology, biology, environmental sciences, plant pathology, medical sciences. Statistical applications in education and other social sciences.

### **Publications (Refereed Journals, Books and Book Chapters)**

Torres, Norma, Xue Yu, Ingrid Y. Padilla, Raul E. Macchiavelli, Reza Ghasemizadeh, David Kaeli, Jose F. Cordero, John D. Meeker, Akram N. Alshwabkeh (2018). The influence of hydrogeological and anthropogenic variables on phthalate contamination in eogenetic karst groundwater systems. *Environmental Pollution* 237:298-307

Di Rienzo, Julio Alejandro; Raúl E. Macchiavelli; Fernando Casanoves (2017). Modelos lineales generalizados mixtos: aplicaciones en InfoStat. Córdoba: Digital Book, PDF (InfoStat Software Estadístico / Di Rienzo, Julio Alejandro) ISBN 978-987-42-4985-2

Piccardi, M.; R. Macchiavelli, Ariel Capitaine Funes, Gabriel A Bó, Monica Balzarini (2017). Fitting milk production curves through nonlinear mixed models. *Journal of Dairy Research* 84 (2), 146-153. DOI: <https://doi.org/10.1017/S0022029917000085>

Flores, C., R. Macchiavelli, O. Bosques, R. Toledo (2016) Calidad y Estado Fisiológico del Café al momento de la Cosecha y su Efecto en el Rendimiento en Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 100: 27-41.

Martinez Rodriguez, G., C.J Santos Flores, R. Macchiavelli, D. Sotomayor Ramirez, L. Perez Alegría (2015) Nutrient levels associated with ecological thresholds of impairment: An approach to estimate numeric nutrient criteria for reservoirs of Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 99: 63-86.

Ramírez, N., J. Flynn, J. Smith, M. Vitale, P. Sturm, C. D'Amato, A. Samdani, R. Macchiavelli, R. El-Hawar (2015). Use of the S-hook for Pelvic Fixation in Rib-Based Treatment of Early-Onset Scoliosis: A Multicenter Study. *Spine* 40(11): 816-822. (doi: 10.1097/BRS.0000000000000443)

Ramírez, N., J. Flynn, B. Hill, J. Serrano, C. Calvo, R. Bredy, R. Macchiavelli, (2015). Evaluation of a Systematic Approach to Pediatric Back Pain: the Utility of Magnetic Resonance Imaging. *Journal of Pediatric Orthopaedics* 35(1): 28-32 (doi: 10.1097/BPO.000000000000190)

Perotto, M.C., Di Rienzo, J.A., Lanati, S., S. Panonto, R. Macchiavelli, W.W. Cafrune, V.C. Conci (2014) Temporal and spatial spread of potyvirus infection and its relationship to aphid populations visiting garlic crops. *Australasian Plant Pathology* 43(6): 623-630. (doi:10.1007/s13313-014-0312-9)

Ramos-Santana, R., Y. Quijano-Cabrera, R. Macchiavelli (2014). Evaluación del rendimiento y la calidad del forraje Maralfalfa en tres vaquerías del norte de Puerto Rico en la época de días cortos. *Journal of Agriculture of the University of Puerto Rico* 98: 49-56.

Ramos-Santana, R., E. Valencia-Chin, R. Macchiavelli (2014). Potencial de *Morus alba* (Morera) en la alimentación de cabras de reemplazo en Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 98: 79-82.

Anaya, A.; I. Padilla; R. Macchiavelli; D. Vesper; J. Meeker; A. Alshawabkeh (2014). Estimating preferential flow in karstic aquifers using statistical mixed models. *Groundwater* 52:584-596 (doi: 10.1111/gwat.12084)

Ramos-Santana, R., E. Valencia-Chin, R. Macchiavelli (2013). Rendimiento de materia seca y características nutritivas de cultivares de yerba Napier evaluados en condiciones de baja fertilización a intervalos de cosecha de 90 días. *Journal of Agriculture of the University of Puerto Rico* 97: 185-190.

Santrich-Vacca, J., D. Cianzio, A. Rivera, A. Casas, R. Macchiavelli (2013). Calidad y composición química de carne de res proveniente de animales de dos grupos de edad en Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 97: 57-63.

Vélez-Colón, R., S.A. Henríquez, R. Macchiavelli (2012) Long term evaluation of guava (*Psidium guajava*) genotypes on the South coast of Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 96: 257-262.

Di Rienzo, J., R. Macchiavelli, F. Casanoves (2011). Modelos Lineales Mixtos. Aplicaciones en InfoStat. Córdoba: Grupo Infostat. ISBN 978-987-27045-0-6

Román Pérez, F.; A. González-Vélez; R. Macchiavelli (2011). Efecto de cuatro patrones en la producción y calidad de la china 'Hamlin' (*Citrus sinensis* (L.) Osb.) en tres localidades en Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 95: 25-34.

Ramos-Santana, R.; E. Valencia; R. Macchiavelli (2011). Intervalos de corte afectan el rendimiento y valor nutritivo de las arbustivas *Hibiscus rosa-sinensis* y *Morus alba*. *Journal of Agriculture of the University of Puerto Rico* 95: 93-98.

Conles, M., C. Cragolini, V. Yossen, M. Balzarini, R. Macchiavelli (2011). Estimación de curvas de progreso de la incidencia de podredumbre blanca (*Sclerotium cepivorum*) en cultivos de ajo mediante un modelo no lineal mixto. *Agriscientia* XXVIII: 61-74.

Ramírez, N., J. Flynn, S. Fernández, W. Seda, R. Macchiavelli (2011). Orthosis noncompliance after the Ponseti Method for the treatment of idiopathic clubfeet: A relevant problem that needs reevaluation. *Journal of Pediatric Orthopedics* 31: 710-715.

Jerez Rico, M.; Ana Moret Barillas; O. Carrero Gámez; R. Macchiavelli; A. Quevedo Rojas (2011). Site index curves based on mixed models for teak plantations in the Venezuelan plains. *Agrociencia* 45:135-145.

Ramos-Santana, R., E. Valencia-Chin, R. Macchiavelli (2010). Consumption and chemical composition of shrub and herbaceous species with potential to feed small ruminants under grazing conditions. *Journal of Agriculture of the University of Puerto Rico* 94: 275-278.

Ramos-Santana, R., E. Valencia-Chin, R. Macchiavelli (2010). *Morus alba* and *Hibiscus rosa-sinensis* fed as whole-plants supplements to growing lambs grazing on Guinea Grass. *Journal of Agriculture of the University of Puerto Rico* 94: 279-284.

Martínez Rodríguez, G., R. Macchiavelli, M. Vázquez (2010) Evaluation of best management practices to reduce nutrient contaminant losses in runoff from broiler litter amended soil. II. Grass Cover. *Journal of Agriculture of the University of Puerto Rico* 94: 61-78.

Martínez Rodríguez, G., R. Macchiavelli, M. Vázquez (2010) Evaluation of best management practices to reduce nutrient contaminant losses in runoff from broiler litter amended soil. I. Alum additions. *Journal of Agriculture of the University of Puerto Rico* 94: 41-60.

Lugo Torres, M., T. Ruiz, R. Macchiavelli (2010). Weed management during and after rhizome perennial peanut establishment. *Journal of Agriculture of the University of Puerto Rico* 94: 111-120.

Fernández, E.; E.P. Souza Neto; P. Abry; R. Macchiavelli; M. Balzarini; B. Cuzin; C. Baude; J. Frutoso; C. Gharib (2010). Assessing erectile neurogenic dysfunction from heart rate variability through a Generalized Linear Mixed Model framework. *Computer Methods and Programs in Biomedicine* 99:49-56

O'Neill-Carrillo, E.; D. Collins; J. López Garriga; R. Macchiavelli; J. Cruz (2009). Center for Resources in General Education (CIVIS): Towards Student Success in General and STEM Education. *Proceedings, 39th ASEE/IEEE Frontiers in Education Conference*: MF3 1-MF3 6

Calero-Toledo, L.; Macchiavelli, R.; González, A. (2008). Sequential sampling plan for corn earworm, *Helicoverpa zea* (Boddie) (Lepidoptera: Noctuidae), in corn fields on the south coast of Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 92: 207-214.

Bruno, C; Macchiavelli, R; Balzarini, M.(2008). Non-parametric smoothing of multivariate genetic distances in the analysis of spatial population structure at fine scale. *Theoretical and Applied Genetics* 117: 435-447

Bruno, C; Macchiavelli, R; Balzarini, M.(2008). Geostatistics in genomics. In: Tirao (ed.) BIOMAT II. Escuela de Biología y Matemáticas, Academia Nacional de Ciencias, Buenos Aires (Argentina).

Meléndez, J.; Pantoja, J.; Custodio, A.; Fernández Van Cleve, J.; Macchiavelli, R.; Santiago, L. (2008). Incidencia de enfermedades metabólicas en vacas lecheras de Puerto Rico y su relación con el comportamiento productivo y reproductivo. *Journal of Agriculture of the University of Puerto Rico* 92: 39-52.

Carrero, O.; M. Jerez; R. Macchiavelli; G. Orlandoni; J. Stock (2008) Ajuste de curvas de índice de sitio mediante modelos mixtos para plantaciones de *Eucalyptus urophylla* en Venezuela. *Interciencia* 33(4): 265-272.

Bruno, C.; Macchiavelli, R.; Balzarini M. (2007) Exploring population genetic structure from microsatellite via spatial statistical modeling. In: *From genomics to plant improvement*. Sanya China; p. 163 – 165

Pantoja, A.; E. Hernández, R. Macchiavelli (2007). Seasonal abundance of *Anastrepha suspensa* (Diptera: Tephritidae) from citrus in Puerto Rico. *Journal of Agriculture of the University of Puerto Rico* 91: 219-221.

Robles, W.; Pantoja, A.; Abreu, E.; Pena, J.; Ortiz, J.; Lugo, M.D.; Cortes, M.; Macchiavelli, R. (2007). Effects of cultural practices on the incidence of aphids and virosis on *Carica papaya* L. *Manejo Integrado de Plagas y Agroecología* 77:38-42.

Macchiavelli, S.; Macchiavelli, R.; Wessel-Beaver, L. (2007) Quality and shelf-life of fresh-cut tropical pumpkin. *Hort Science* 42: 1019-1020S.

Casanoves, F.; R. Macchiavelli, M. Balzarini (2007). Models for multi-environment yield trials with fixed and random block effects and homogeneous and heterogeneous residual variances. *Journal of Agriculture of the University of Puerto Rico* 91: 117-131

Santiago, J., L. Rivera-Vargas, R. Rodríguez, R. Macchiavelli (2006). Resistance-inducing chemicals against *Colletotrichum gloeosporioides* in mango. *Journal of Agriculture of the University of Puerto Rico*, 90: 221-235.

Pantoja, A.; Salazar, A. and Macchiavelli, R. (2006). Recognition of Instars and Adult Trap Catches of *Cosmopolites sordidus* (Coleoptera: Curculionidae) from Plantains in Puerto Rico. *Ann. Entomol. Soc. Am.* 99(5): 875-878

Ramos Santana, Rafael; McDowell, Lee R.; Wilkinson, Nancy S., Macchiavelli, R.(2006) Selenium fertilization of Guinea grass pastures in central Puerto Rico. *Communications in Soil Science and Plant Analysis* 37: 621-625.

Ramos Santana, Rafael; McDowell, Lee R.; Macchiavelli, R.; Vazquez, A.; Wilkinson, Nancy S. (2006) Selenium fertilization of Star grass pastures in central Puerto Rico. *Communications in Soil Science and Plant Analysis* 37: 673-678.

Casanoves, F.; Macchiavelli, R. and Balzarini, M. (2005). Error Variation in Multienvironment Peanut Trials: Within-Trial Spatial Correlation and Between-Trial Heterogeneity. *Crop Science* 45:1927–1933.

Durán, L. A.; Blair, M. W.; Giraldo, M. C.; Macchiavelli, R.; Prophete, E.; Nm, J. C.; and Beaver, J. (2005). Morphological and Molecular Characterization of Common Bean Landraces and Cultivars from the Caribbean. *Crop Science* 45: 1320-1328.

Amaro, I.R., Demey, J.R. and Macchiavelli, R. (2004). Application of rescaled range analysis (R/S) to study the fractal properties of precipitation in Venezuela. *Interciencia* 29: 617-620.

Macchiavelli, R. and Brelles-Mariño, G. (2004). Nod factor-treated *Medicago truncatula* roots and seeds show an increased number of nodules when inoculated with a limiting population of *Sinorhizobium meliloti*. *Journal of Experimental Botany* 55: 2635-2640.

Demey, J., A. Zambrano, R. Macchiavelli and V. González (2004) Tamaño de muestra en experimentos biotecnológicos con suspensiones celulares. *Interciencia* 29: 396-400.

Macchiavelli, R.; W. Robles; E. Abreu; A. Pantoja (2004). Nonlinear models with repeated measures for analyzing disease progress in plant epidemiology. *Applied Statistics in Agriculture* 16: 255-269.

González, A. and R. Macchiavelli (2003) Dynamics of diamondback moth, *Plutella xylostella* (Lepidoptera: Plutellidae) in cabbage under intercropping, biological control and Bt-based sprays. *Journal of Agriculture of the University of Puerto Rico*, 87: 31-49.

Vélez- Colón, R., Henríquez, S.A, and R. Macchiavelli (2003) Preliminary evaluation of guava (*Psidium guajava*) genotypes on the south coast of Puerto Rico. *Journal of Agriculture of the University of Puerto Rico*, 87: 149-153.

Ramos, Rafael; G. Martínez and R. Macchiavelli (2003) Establishment and adaptation of soil transforming germplasm at three eroded soil sites of Puerto Rico. *Proceedings, 6<sup>th</sup> North American Agroforestry Conference* 78-82.

Ramos Santana, R., G. Martínez, R. Macchiavelli, J. Rodríguez and J. Guzmán (2003). Potential of trees, grasses and turf legumes for restoring eroded soils. *Communications in Soil Science and Plant Analysis*, 34: 2149-2162.

Sotomayor Ramírez, D. and Macchiavelli, R. (2002). Interpretations of field fertility research on Solanaceae in Puerto Rico. *Journal of Agriculture of the University of Puerto Rico*, 86: 95-116.

Moser, E.B. and Macchiavelli, R. (2002). Model selection techniques for repeated measures covariance structures. *Applied Statistics in Agriculture* 14: 17-31.

Buteler, M, D. LaBonte, R. Jarrett and R. Macchiavelli (2002). Microsatellite-based Paternity Analysis in Polyploid Sweetpotato. *Journal of the American Society for Horticultural Sciences* 127 (3): 392-396.

Rodríguez, A., J. Martínez, R. Macchiavelli and E. Riquelme (2001). Sucesión microbiana, productos de fermentación y estabilidad aeróbica de yerba guinea ensilada con un aditivo conteniendo inóculo de bacterias y enzimas fibrolíticas. *Journal of Agriculture of the University of Puerto Rico*, 85: 151-164.

Macchiavelli, R. and J. Beaver (2001). Effect of number of seed bulked and population size on genetic variability when using multiple-seed procedure of SSD. *Crop Science* 41: 1513-1516.

Macchiavelli, R. (2000). Some strategies for selecting and fitting covariance structures for repeated measures. *Applied Statistics in Agriculture* 12: 161-169.

Macchiavelli, R. and R. Rodríguez (2000). Methods for efficient estimation of rust incidence in coffee plantations. *Journal of Agriculture of the University of Puerto Rico*, 84: 65-78.

Bautista-Pérez, M., R. Echávez-Badel and R. Macchiavelli (2000). Virulence of *Rhizoctonia solani* isolates associated with web blight of common bean. *Journal of Agriculture of the University of Puerto Rico*, 84: 95-97.

Macchiavelli, R. and R. Rodríguez (1999). Use of spatial statistics to design sampling plans for monitoring rust in coffee trees. *Journal of Tropical Forest Resources*, 15 (2):9-21.

Macchiavelli, R. and J. Beaver (1999). Analysis of genotype-by-environment interaction with AMMI models using SAS Proc Mixed. *Applied Statistics in Agriculture* 11: 171-183.

Martínez, J., A. Rodríguez, F. Arias, R. Macchiavelli and E. Riquelme (1999). Características fermentativas y estabilidad aeróbica del sorgo granífero (*Sorghum bicolor*) ensilado en Puerto Rico bajo varias dosis de inóculo comercial. *Journal of Agriculture of the University of Puerto Rico*, 83: 135-151.

Vicente, N., A. Bosques Vega and R. Macchiavelli (1999). Dinámica poblacional de nematodos fitoparasíticos en gandul (*Cajanus Cajan*). *Journal of Agriculture of the University of Puerto Rico*, 83: 201-208.

Macchiavelli, R. and R. Rodríguez (1998). Sampling plans for monitoring rust in coffee trees. *Applied Statistics in Agriculture* 10: 184-192.

Beaver, J. and R. Macchiavelli (1998). Breeding strategies for pyramiding genes for disease resistance. *Bean Improvement Cooperative* 41: 141-142.

Batista, W.B., W.J. Platt and R. Macchiavelli (1998). Demography of a shade-tolerant tree (*Fagus grandifolia*) in a hurricane-disturbed forest. *Ecology* 79(1): 38-53.

Bufogle, A., P. Bollich, J. Kovar, R. Macchiavelli and C. Lindau (1997). Rice variety differences in dry matter and nitrogen accumulation as related to plant stature and maturity group. *Journal of Plant Nutrition* 20 (9): 1203-1224.

Bufogle, A., P. Bollich, J. Kovar, C. Lindau and R. Macchiavelli (1997). Microplot size and retainer effects on rice growth and nitrogen-15 accumulation. *Agronomy Journal* 89 (4): 576-581.



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Lovejoy, J.C., S.R. Smith, G.A. Bray, J.P. DeLany, J.C. Rood, D. Gouvier, M. Windhauser, D.H. Ryan, R. Macchiavelli, and R. Tulley (1997). A paradigm of experimentally induced mild hyperthyroidism: effects on nitrogen balance, body composition, and energy expenditure in healthy young men. *Journal of Clinical Endocrinology and Metabolism*, 82: 765 - 770.

Buteler, M., D. LaBonte and R. Macchiavelli (1997). Determining paternity in polyploids: Hexaploid simulation studies. *Euphytica* 96: 353-361.

Macchiavelli, R. and E.B. Moser (1997). Analysis of repeated measures with ante-dependence models. *Biometrical Journal* 39 (3) :339-350.

Lovejoy, J., G. Bray, M. Burgeois, R. Macchiavelli, J. Rood, C. Greeson and C. Partington (1996). Exogenous androgens influence body composition and regional body fat distribution in obese, postmenopausal women - a clinical research center study. *Journal of Clinical Endocrinology and Metabolism*, 81, 2198-2203. DOI: 10.1210/jc.81.6.2198

Moser, E.B. and R. Macchiavelli, R. (1996) Methods for Spatial Analysis. Chapter 5 in *GIS Methods in Hydrology*, V. Singh, ed., Water Science and Technology Library, Kluwer Academic Publishers.

deGuzman, L.I.; Rinderer, T.E.; Delatte, G.T.; Macchiavelli, R.E. (1996) *Varroa jacobsoni* Oudemans tolerance in selected stocks of *Apis mellifera* L. *Apidologie* 27: 193-210.

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Macchiavelli, R. and S. Arnold (1995). Difficulties with the use of penalized likelihood criteria in antedependence and polynomial models. *Communications in Statistics, Theory and Methods*, 24 (2): 501-522.

Moser, E.B., R.E. Macchiavelli and D.J. Boquet (1994). Modelling within-plant spatial dependencies of cotton yield. In *Applied Statistics in Agriculture*, ed. J. Schwenke, pp. 246-260.

Macchiavelli, R. and S. Arnold (1994). Variable Order Antedependence Models. *Communications in Statistics, Theory and Methods*, 23 (9): 2683-2699.

Catalán, L.A. and R. E. Macchiavelli (1991). Improving germination in *Prosopis flexuosa* D.C. and *P. alba* Griseb. with hot water treatments and scarification. *Seed Science and Technology* 19: 353-362.

Peiretti, D.; H. Ceballos, R. Macchiavelli and M. Fernández (1986). Efectos de la inducción de andro-esterilidad por aplicación de AG3 sobre la producción de semilla F1 en girasol (*Helianthus annuus* L.). *Revista de Ciencias Agropecuarias* V: 2533.

Ochoa de Suárez, B.; D. Manero de Zumelzú and R. Macchiavelli (1986). Citogenética de triticales. Aberraciones meióticas en triticales hexaploides. *Revista de Ciencias Agropecuarias* V: 3544.

### **Publications (Abstracts and Non-refereed Proceedings)**

Torres, P.; Macchiavelli, R.; Teran, L, Chavarria Carvajal, J. (2018). Semi-parametric mixed beta regression model for disease severity in plants. *Abstracts, XXIX International Biometric Conference, Barcelona (Spain), July 9-13, 2018*

Macchiavelli, R.; Torres, P.; Teran, L, Chavarria Carvajal, J. (2018). A Bayesian semi-parametric mixed beta regression model for disease severity in plants. *Annual Meeting, Project NCCC170, Fayetteville, Arkansas, June28-29, 2018.*

Macchiavelli, R. (2017) Oportunidades de Investigación en Biometría. *Resúmenes, VI Reunión Iberoamericana de Biometría.* Quito (Ecuador), November 15-17, 2017.

Macchiavelli, R.; P. Torres-Saavedra, J. Chavarría-Carvajal, A. Calvo-Alfaro, Liz Terán-Herrera (2017). Semi-parametric mixed beta regression models for disease severity in plants: Modelling Black Sigatoka in banana crops. *Abstracts, 61st. ISI World Statistics Congress, Marrakech, Morocco, 16-21 July, 2017.*

Casanoves, F.; R. Macchiavelli; J. Di Rienzo (2017). Non-linear mixed model implementation in InfoStat: an Interface with the nmlr Library. *Abstracts, 61st. ISI World Statistics Congress, Marrakech, Morocco, 16-21 July, 2017.*

Giménez, G., Rubio, N., Haique, A., Macchiavelli, R. (2016). Métodos alternativos para predecir categorías de frutos en base a curvas de crecimiento simuladas: modelo generalizado mixto multicategorico y support vector machine (SVM). *Libro de Resúmenes, XXI Reunión Científica del Grupo Argentino de Biometría, p. 71-72.* Corrientes (Argentina).

Piccardi, M., Macchiavelli, R., Balzarini, M. (2016) Ajuste de curvas de lactancia que derivan de un aborto. *Libro de Resúmenes, XXI Reunión Científica del Grupo Argentino de Biometría, p. 93.* Corrientes (Argentina).

Padilla, Ingrid Y., Vilda L. Rivera, Norma I. Torres, Raul Macchiavelli, Jose Cordero, David Kaeli, and Akram Alshawabkeh (2016). Assessment of Links Between Contamination in Karst Groundwater and Water Quality in Drinking Water Systems, *NIEHS Environmental Health Science FEST, Durham, North Carolina, December, 5-8, 2016.*

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## **Publications (Technical Reports)**

Martínez-Rodríguez, G. A., D. Sotomayor-Ramírez, L. Pérez-Alegría, and R. Macchiavelli. 2017. Modifying the Assessment Criteria for the Implementation of the Aquatic Life Criteria in Reservoirs of Puerto Rico. Final Report Submitted to The Environmental Quality Board of Puerto Rico. January 31, 2017.

Ruiz, T., López Benítez, M. y Macchiavelli, R. (2002). Relación de la carga animal y el uso de alimento concentrado con el porcentaje de grasa láctea y la producción en los hatos lecheros de Puerto Rico. Boletín 300, Estación Experimental Agrícola, Universidad de Puerto Rico.

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## **Other Publications**

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## **Presentations in Conferences and Seminars**

### **Invited Papers – Speaker**

Macchiavelli, R. (2017) Oportunidades de Investigación en Biometría. *Resúmenes, VI Reunión Iberoamericana de Biometría*. Quito (Ecuador), November 15-17, 2017.

Macchiavelli (2017). Semi-parametric mixed beta regression models for disease severity in plants: Modelling Black Sigatoka in banana crops. Invited talk in the Session "The Diversity of Biometry", 61st. *ISI World Statistics Congress*, Marrakech, Morocco, 20 July, 2017.

Macchiavelli (2016). The College of Agricultural Sciences at the University of Puerto Rico. Invited talk at Biennial Meeting, Puerto Rico Agricultural Biotechnology Association. San Juan, September 22, 2016.



Macchiavelli (2016). The University of Puerto Rico and USDA: A Story of a Successful Collaboration. Keynote Conference for Caribbean Awareness Week, National Institute for Food and Agriculture, US Department of Agriculture, June 29, 2016.

Macchiavelli (2016). High Education and Agriculture in Puerto Rico. Invited talk at Cumbre Agrícola de Puerto Rico, February 27, 2016.

Macchiavelli, R. (2015). Uso de modelos no lineales mixtos para combinar información en estudios forestales. Invited talk at Departamento de Estadística, Universidad Nacional de Colombia (Bogotá), January 27, 2015.

Macchiavelli, R. (2014). Actividades de la Academia de Investigación y Estudios Graduados. *Departamento de Química*, UPR RUM, Mayagüez, PR, November 7, 2014.

Macchiavelli, R. (2014). Ayudantías graduadas. Procesos, derechos y responsabilidades. *Centro de Enriquecimiento Profesional*, UPR RUM, Mayagüez, PR, November 4, 2014.

Santiago, F.; Macchiavelli, R. (2014). Regulaciones de inmigración y sus implicaciones en la vida universitaria. *Centro de Enriquecimiento Profesional*, UPR RUM, Mayagüez, PR, October 23, 2014.

Macchiavelli, R. (2014). Combinando información longitudinal y transversal en la construcción de Curvas de índice de Sitio usando modelos no lineales mixtos. Invited talk at *XIX Reunión Científica del Grupo Argentino de Biometría*. Santiago del Estero, Argentina. September 10-12, 2014.

Macchiavelli, R. (2013). Aplicaciones de modelos jerárquicos en estudios comparativos de intervención educativa en Puerto Rico. Invited talk at *VI Escuela de Verano, Centro de Estadística Aplicada en Ciencias Sociales y Econometría*. Cali (Colombia), November 7-9, 2013.

Macchiavelli, R. (2013). Modelación paramétrica y no paramétrica de incidencia y severidad de enfermedades en cultivos tropicales. Invited talk at *XVIII Reunión Científica del Grupo Argentino de Biometría y IV Encuentro Iberoamericano de Biometría*, (Mar del Plata, Argentina), September 25-27, 2013

Macchiavelli, R. (2013). Nonlinear mixed models for disease incidence and severity: Modelling plant diseases in tropical crops. Invited talk at *59th World Statistics Congress*. Hong Kong (China), August 25-30, 2013.

Macchiavelli, R. (2012) Uso de modelos no lineales mixtos en estudios forestales: Curvas de índice de sitio para teca en los llanos occidentales de Venezuela. Invited talk at *XXII Simposio Internacional de Estadística*, Bucaramanga (Colombia), July 17-21, 2012.

Macchiavelli, R. (2012) Use of Nonlinear Mixed Models in Forestry Studies. Invited seminar at the Department of Mathematical Sciences, University of Puerto Rico, Mayagüez, 29 March 2012.

Macchiavelli, R. and J. A. Chavarría-Carvajal (2011). Fitting disease progress curves to describe Black Sigatoka (*Mycosphaerella fijiensis*) epidemics on banana in Puerto Rico. Abstracts,

American Phytopathological Society – Caribbean Division and Entomological Society of America Joint Annual Meeting. San Juan, Puerto Rico, March 20, 2011.

Macchiavelli, R. (2009). Modelación de recuentos en un estudio ecológico bajo un diseño complejo: aplicaciones de modelos lineales generalizados mixtos. Presented at *XII Conferencia Española de Biometría*. Cádiz (España), September 23-25, 2009.

Macchiavelli, R. (2009). Aplicaciones de modelos lineales generalizados mixtos para modelar recuentos de semillas en un estudio ecológico con un diseño complejo. *XIII Reunión Argentina de Biometría*, Trelew (Argentina), September 12-14, 2009.

Macchiavelli, R. (2007) Graphical diagnostics for covariance matrices in longitudinal data. Presented at IV Reunión de la Región de Centro América y del Caribe de la Sociedad Internacional de Biometría y IV Encuentro Colombia-Venezuela de Estadística, Margarita, Venezuela, October 3, 2007.

Macchiavelli, R. (2006). Análisis de curvas de progreso de enfermedad para podredumbre blanca del ajo (*Sclerotium cepivorum* Berk.). Presented at Instituto Valenciano de Investigaciones Agrícolas, Valencia, Spain, March 27, 2006.

Macchiavelli, R. (2005). Análisis de datos longitudinales en medicina. *X Reunión Científica del Grupo Argentino de Biometría* (Corrientes, Argentina, October 14, 2005).

Macchiavelli, R. (2005). Aplicaciones de modelos no lineales mixtos para datos longitudinales en curvas de progreso de enfermedad. *X Conferencia Española de Biometría* (Oviedo, Spain, May 25, 2005).

Macchiavelli, R. (2003). Controlando la variabilidad en experimentos de campo. II Convention, Puerto Rico Seed Research Association, Ponce, Puerto Rico, October 2, 2003.

Macchiavelli, R. (2003). Modelos Lineales Generalizados Mixtos . Simposio Nacional de Estadística, Armenia, Colombia, August 6, 2003.

Macchiavelli, R.; W. Robles; E. Abreu y A. Pantoja (2003). Nonlinear models with repeated measures for analyzing disease progress. Abstracts, II Regional Meeting, International Biometric Society, Mayagüez, Puerto Rico. June 12, 2003.

Macchiavelli, R. (2003) “ Estudiantes graduados y redacción en el RUM: algunas vivencias”. Coloquio “Los retos interdisciplinarios de la redacción en el RUM” Mayagüez, PR, March 10, 2003.

Macchiavelli, R. (2002). “Introducción al análisis estadístico en ensayos clínicos”. V Congreso Latinoamericano de Sociedades de Estadística, Buenos Aires, Argentina, October 2002.

Macchiavelli, R. (2002). “Análisis de datos longitudinales”. V Congreso Latinoamericano de Sociedades de Estadística, Buenos Aires, Argentina, October 2002.

Macchiavelli, R. (2001). Using residuals for selecting covariance structures. Spring Meeting, International Biometric Society, ENAR Region. Charlotte, NC, March 2001

Macchiavelli, R. and R. Rodríguez (2000) Use of spatial statistics to design sampling plans for monitoring rust in coffee trees. *32<sup>nd</sup> Symposium on the Interface: Modelling the Earth Systems*, New Orleans, Louisiana.

Macchiavelli, R. (1999). "Use of Spatial Information to design sampling plans for monitoring rust in coffee trees." , *XXXIX Annual Meeting, American Phitopathology Association – Caribbean Division and XXXI Annual Meeting of the Organization of Tropical Nematologists*, San Juan, Puerto Rico.

Moser, E.B. and Macchiavelli, R. (1995). "Categorical Data Analysis in Biotechnology Research". International Symposium on Statistics in Agriculture and Environmental Research (Satellite Conference). CIAT, Cali (Colombia).

Macchiavelli, R. (1995). "A review and comments on the Minnesota Stray Voltage Study". Abstracts, Spring Meeting, Biometrics Society (ENAR), ASA and IMS. Birmingham (Alabama).

Macchiavelli, R. (1994). "Analysis of Repeated Measures in Biotechnology Studies." Third Network Meeting, Biometrics Society (Central American, Caribbean, Colombian and Venezuelan Regions).

Macchiavelli, R., E.B. Moser and S.R. Pezeshki (1993). "Use of Antedependence Models in Forestry Trials." Second Network Meeting, Biometrics Society (Central American, Caribbean, Colombian and Venezuelan Regions).

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Macchiavelli, R. (1985). Aspectos estadísticos del muestreo de insectos. XIII Coloquio Argentino de Estadística.

### **Short Courses, Seminars and Workshops Taught**

Di Rienzo, J., Macchiavelli, R., (2018). Linear Mixed Models. Course (40-hours) given at Universidad Nacional del Comahue during the Reunión Científica Anual Grupo Argentino de Biometría (October 2018, Neuquén, Argentina).

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2018). Advanced Linear Mixed Models. Course (40-hours) given at CATIE (Tropical Agronomic Center for Research and Teaching) (August-September 2018, Turrialba, Costa Rica).

Macchiavelli, R. (2017), Modelos Lineales, Generalizados y mixtos para el análisis de datos biológicos con R. (20 hours). Postgrado en Ciencias (Biología), Universidad del Valle, Cali, Colombia, 11 al 14 de diciembre de 2017.

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2017). Advanced Linear Mixed Models. Course (40-hours) given at CATIE (Tropical Agronomic Center for Research and Teaching) (August 2017, Turrialba, Costa Rica).

Macchiavelli, R. (2017), Modelos Lineales, Genalizados y Mixtos. (20 hours). Sociedad Colombiana de Estadística, Cali, Colombia, 11 al 13 de mayo de 2017.

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2016). Linear Mixed Models. Course (40-hours) given at CATIE (Tropical Agronomic Center for Research and Teaching) (August 2016, Turrialba, Costa Rica).

Macchiavelli, R. (2014). Introduction to Linear Mixed Models. Short Course (6 hours) at *X Coloquio de Estadística*. Medellín (Colombia), November 28-30, 2014.

Macchiavelli, R. (2014). Rigorous evaluation designs for Math and Science Partnership Projects". Seminar given at *VII Congreso de Maestros de Matemáticas y Ciencia*. Fajardo, PR, November 21-23, 2014.

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2014). Generalized Linear Mixed Models. Short Course (4-hours) given at *XIX Reunión Científica del Grupo Argentino de Biometría*. Santiago del Estero, Argentina. September 10-12, 2014.

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2014). Linear Mixed Models. Course (40-hours) given at CATIE (Tropical Agronomic Center for Research and Teaching) (August 2014, Turrialba, Costa Rica).

Macchiavelli, R. (2014). Multivariate Analysis. Course (40-hours) given Univesidad Autónoma de Santo Domingo, organized by IDIAF (Instituto Dominicano de Investigación Agrícola y Forestal) (June 2014, Santo Domingo, República Dominicana).

Macchiavelli, R. (2013). Multilevel Models. Short Course (9 hours) at *VI Escuela de Verano, Centro de Estadística Aplicada en Ciencias Sociales y Econometría*. Cali (Colombia), November 7-9, 2013.

Casanoves, F., R. Macchiavelli, J. Di Rienzo (2013). "Análisis de productividad de pasturas usando modelos mixtos en diseños complejos" In Situ Analysis. XVIII Reunión Científica del Grupo Argentino de Biometría y IV Encuentro Iberoamericano de Biometría, (Mar del Plata, Argentina), September 25-27, 2013.

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2013). Linear Mixed Models. Course (40-hours) given at CATIE (Tropical Agronomic Center for Research and Teaching) (July 2013, Turrialba, Costa Rica).

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2012). Generalized Linear Mixed Models in InfoStat. Short Course (3-hours) given at *X CLATSE, Latin American Conference of Statistical Societies* (October 2012, Córdoba, Argentina).

Macchiavelli, R., Casanoves, F. (2012). Applications of Linear Mixed Models. Short Course (3-hours) given at XXII Colombian Statistical Symposium (July 2012, Bucaramanga, Colombia).

Di Rienzo, J., Macchiavelli, R., Casanoves, F. (2012). Linear Mixed Models. Course (40-hours) given at CATIE (Tropical Agronomic Center for Research and Teaching) (August 2012, Turrialba, Costa Rica).

“Introducción al Análisis de Datos en InfoStat”. Short Course given at Estación Experimental Agrícola, Río Piedras, April 27, 2011.

“Introducción al Análisis de Datos en InfoStat”. Short Course given at Facultad de Ciencias Agrícolas, Mayagüez, December 2, 2010.

“Modelos estadísticos para el Análisis de Datos en el Manjeo de Enfermedades de Plantas”. Short Course taught in Instituto de Fitopatología y Fisiología Vegetal (INTA), Córdoba, Argentina, September 13-17, 2010.

“Análisis de Datos Mediante Modelos Mixtos”. Short course given at CATIE (Turrialba, Costa Rica), July 26-30, 2010.

“Introducción a los Modelos Mixtos.” Seminar presented at the University of Puerto Rico Agricultural Experiment Station, October 29, 2009.

“Modelos no lineales mixtos.” Short course given at *XII Reunión Científica del Grupo Argentino de Biometría y el I Encuentro Argentino Chileno de Biometría* (San Martín de los Andes, Argentina). October 10-11, 2007.

“Modelos no lineales mixtos” Short course given at *XI Conferencia Española de y I Encuentro Iberoamericano de Biometría* (Salamanca, Spain). June 24, 2007.

“Modelos estadísticos: un enfoque moderno para su uso en las ciencias agropecuarias”. Short Course taught in Carlos Paz, Argentina, to researchers of the National Institute of Agricultural Research. March 26-30, 2007.

“Aplicaciones de Análisis Multivariado en Agricultura y Forestería”. Short course given at Universidad de Los Andes (Mérida, Venezuela), June 2-6, 2006.

“Aplicaciones de Modelos Mixtos en Agricultura y Forestería”. Short course given at Universidad de Los Andes (Mérida, Venezuela), May 29-June 1, 2006.

“Aplicaciones de Modelos Mixtos en Agricultura y Forestería”. Short course given at Universidad de Los Andes (Mérida, Venezuela), September 19-24, 2005.

“Aplicaciones de Modelos Mixtos en Agricultura y Forestería”. Short course given at CATIE (Turrialba, Costa Rica), March 14-18, 2005.

“Aplicaciones de Modelos Mixtos”. Short course given at IX Reunión Científica, Grupo Argentino de Biometría, La Rioja, Argentina, September 30- October 2, 2004.

“Excel y sus aplicaciones estadísticas”. Workshop given at Agricultural Experiment Station, University of Puerto Rico, Mayagüez, 8/6/04.

“Excel y sus aplicaciones estadísticas”. Workshop given at Centro de Enriquecimiento Profesional, University of Puerto Rico, Mayagüez, 4/23/04.

“Análisis estadístico en SAS”. Workshop given at Agricultural Experiment Station, University of Puerto Rico, Mayagüez, 4/2/04.

“Métodos estadísticos aplicados a extensión”. Workshop given at Servicio de Extensión Agrícola, University of Puerto Rico, Mayagüez, 3/30/04.

“Incorporando conceptos estadísticos en la enseñanza agrícola. Parts I and II”. Workshop given at University of Puerto Rico, Mayagüez, 10/3/03 and 11/14/03 (7 hours each workshop).

“Ajuste de modelos no lineales con datos longitudinales: aplicaciones en monitoreo de enfermedades en plantas”. Short course given at VIII Reunión Científica, Grupo Argentino de Biometría, Mendoza, Argentina. October 16-18, 2003.

“Análisis de datos longitudinales”. Short Course given at Simposio Nacional de Estadística, Armenia, Colombia, August 4-6, 2003 (6 hours).

“Plan de estudio y propuesta de tesis”. Workshop given at the University of Puerto Rico, Mayagüez, 9/26/02.

“Incorporando conceptos estadísticos en la enseñanza agrícola”. Workshop given at University of Puerto Rico, Mayagüez, 6/17-18/02 and 6/24-25/02 (15 hours each workshop).

“La Estadística en las Ciencias Agrícolas”. Gamma Sigma Delta lecture given at  
University of Puerto Rico, Mayagüez, 12/6/01  
University of Puerto Rico, AEE Río Piedras, 02/13/02

“Programa Excel y sus Aplicaciones Estadísticas”. Workshop given at the University of Puerto Rico, 4/9/02.

“Redacción de Tesis”. Workshop given at the University of Puerto Rico, 9/6/01 and 2/26/02.

Short Course on “Analysis of Repeated Measurements.” Ciclo de Capacitación en Métodos Cuantitativos 2001, Universidad Nacional de Costa Rica, Heredia, Costa Rica, November 5-7, 2001.

Short Course on “Analysis of Categorical Data.” V Reunión Científica del Grupo Argentino de Biometría, Córdoba, Argentina, October 2000.

Short Course on “Models for Categorical Data in Biological Research.” Universidad Nacional del Comahue and Instituto Nacional de Tecnología Agropecuaria, Bariloche, Argentina, June 2000

“Análisis de Datos Categóricos”. Workshop given at the Agricultural Experiment Station, University of Puerto Rico, 10/13/99 and 10/15/99.

Short Course on "Analysis of Variance and Regression." Ministry of Agriculture, Central Research Station, St. Augustine, Trinidad and Tobago, March 1999.

"Análisis Estadístico Básico en MS Excel y SAS". Workshop given at the Agricultural Experiment Station, University of Puerto Rico, 11/18/98 and 11/20/98.

Tutorial on "Analysis of Count Data." V Meeting of the International Biometric Society Network for Central America, the Caribbean, Mexico, Colombia and Venezuela. Xalapa (Mexico), August 1997.

"Uso del Sistema SAS". Seminar talk given at University of Puerto Rico, Department of Agronomy and Soils, 2/27/97.

Short Course on "Analysis of Categorical Data." Universidad Nacional de Córdoba (Argentina), December 1995.

"Stray Voltage and Dairy Cows: A review and comments on the Minnesota Stray Voltage Study". Seminar talk given at Louisiana State University, Department of Experimental Statistics, 4/17/95.

"Repeated Measures Models Represented as Chain Graphs". Seminar talk given at University of Southwestern Louisiana, Department of Statistics, 11/11/94.

Short Course on "Analysis of Repeated Measures." Universidad de San Carlos de Guatemala, November-December 1994.

Short Course on "Analysis of Repeated Measures." Universidad Nacional de Córdoba (Argentina), December 1993.

"Modeling Repeated Measures Data: A Tree Physiology Experiment" (with E.B. Moser and S.R. Pezeshki). Seminar talk given at Louisiana State University, Department of Experimental Statistics, 10/4/93.

"Variable Order Antedependence Models." Seminar talk given at Louisiana State University, Department of Experimental Statistics, 2/8/93.

"Estimating the order in Antedependence Models". Seminar talk given at:  
Pennsylvania State University, Department of Statistics, 11/19/91  
Northwestern University, Department of Statistics, 2/10/92  
Louisiana State University, Dept. of Experimental Statistics, 2/14/92  
Iowa State University, Department of Statistics, 2/17/92  
Ohio State University, Department of Statistics, 2/20/92  
Oregon State University, Department of Statistics, 2/24/92  
University of Nebraska at Lincoln, Dept. of Biometry, 2/28/92  
University of Pennsylvania, Department of Statistics, 3/3/92  
Purdue University, Department of Statistics, 3/9/92  
Bucknell University, Department of Mathematics, 3/12/92

"Introduction to Stochastic Models in Economic Sciences". Seminar series given in Department of Agricultural Economics, Universidad Nacional de Córdoba, March 1986.

## **Participation in Projects and Grants Received**

Integrated management of New and Emerging Pests and Diseases. (PR Agricultural Experiment Station ZFIDA-19). Collaborator (2014-2016)

Developing Distance Education in Agriculture, Food and Related Sciences at University of Puerto Rico- Mayagüez Land Grant Institution. (PR Agricultural Experiment Station Z-276). Evaluator (2014-2016)

Modifying the Assessment Protocol for the Implementation of the Aquatic Life Criteria (DO) in Reservoirs of Puerto Rico. (PR Agricultural Experiment Station Z-282). Collaborator (2014-2017)

Transformational Initiative for Graduate Education and Research, US Dept. of Education, PPOHPA program. Grant P031M140035-15. Project Director. (2014-2015). Participant (2015-2019)

Graduate Research Fellowship Award, National Science Foundation (2013-Present). Campus PI for awardees.

Program of Exemplary Mentoring (PEM) for Graduate Students in Chemistry and Chemical Engineering (Alfred P. Sloan Foundation Grant). Member of the Coordinating Committee (2014-2017).

Biostatnet, Red Nacional de Bioestadística. Ministerio de Ciencia e Innovación, España. International Colaborator (2011-present).

Nutrient Levels associated with ecological thresholds of impairment in reservoirs of Puerto Rico (PR Agricultural Experiment Station Z-247). Collaborator (2011-2014)

Developing Resident Instruction in Food and Agriculture Related Sciences at Land Grant Institutions in the Pacific and Caribbean Area (Cari-Pac, PR Agricultural Experiment Station Z-248). Evaluator (2012-2014)

Alternative practices for managing plant-parasitic nematodes on *Musa* sp. (PR Agricultural Experiment Station Hatch 437). Co-PI (2011-2013)

Use of benthic algae as biological index for defining nutrient impairment conditions in rivers/streams of Puerto Rico (PR Agricultural Experiment Station Hatch 433). Collaborator (2011-2015)

Research Advances in Agricultural Statistics (USDA, NCCC170 - PR Agricultural Experiment Station H745A) PI. (2011-2021)



Effects of the coffee berry borer *Hypothenemus hampei* Ferr on coffee yield in Puerto Rico. (PR Department of Agriculture (PR Agricultural Experiment Station ZFIDA-15) (2008-2009, 2010-2011) Co-PI.

Evaluation of the land-use legacy effect of agricultural practices on the water quality of streams from forest watersheds of Puerto Rico (PR Agricultural Experiment Station Project MS-17) (2009-2015) Co-PI and Collaborator.

Practices for the control of Black Sigatoka in Puerto Rico (PR Agricultural Experiment Station Project Z-FIDA-01) (2010-2013) Co-PI

PROTECT - PR Test Site for Environmental Contamination Threats (2010-2019) Collaborator. National Institute of Environmental Health Sciences of the National Institute of Health to the Puerto Rico Testsite for Exploring Contamination Threats (PROTECT) Superfund Research Program Center [Grant number P42ES017198]

Integrated Management of Black Sigatoka of *Musa* sp. (PR Agricultural Experiment Station Project T-STAR 121) (2009-2011) Co-PI.

Development of numeric nutrient criteria in rivers and streams (PR Agricultural Experiment Station Project Z-217) (2009-2011) Co-PI

Using Community- Based Participatory Research to Improve Health in Children (NIH, NHLBI-1R01HL091826-01) (2009-2011) Collaborator

US Dept of Education (Title V) - Center for Resources in General Education: Towards Student Success in General and STEM Education at UPRM (2008-2014). Co-PI

PR Department of Education – AFAMAC Mathematics (Alliance for the Improvement of Mathematics and Science) (2008-2016) Dr. Macchiavelli is the evaluator for this project.

PR Department of Education – AFAMAC Science (Alliance for the Improvement of Mathematics and Science) (2008-2016) Dr. Macchiavelli is the evaluator for this project.

PR Department of Education – AFAMAC (Alliance for the Improvement of Mathematics and Science) (2004-2008). Dr. Macchiavelli is the external evaluator for this project.

USDA – TSTAR Grant (2004-2006). “Improving Rabbit Productivity in the Tropics: An Integrated Approach”. Dr. Macchiavelli is a co-PI in the project.

Agric. Exper. Station (Univ. of P. Rico) (2004-2010). “Statistical Collaboration in AEE Research Projects.” Dr. Macchiavelli is the PI in the project. (Project AES C502).

Agric. Exper. Station (Univ. of P. Rico) (2002-2004). “Statistical Collaboration in AEE Research Projects.” Dr. Macchiavelli is the PI in the project. (Project AES C502).

USDA – Higher Education Programs (2001-2004). “Improving Biometrical Reasoning in Agriculture College Education”. Dr. Macchiavelli is the PI in this project. USDA-HSI 2001-03182

Mini-grant, Proyecto Atlantea (2001). Granted by Universidad de Puerto Rico (Central Administration). This grant helped Dr. Macchiavelli attend the I Meeting of the International Biometric Society Caribbean Region. Turrialba (Costa Rica).

USDA – CBAG Grant (2000-2002). “Minimum tillage for the establishment of forage species in rangelands”. (Danilo Cianzio, PI). Co-PI (Project AES - CBAG 78).

Agric. Exper. Station (Univ. of P. Rico) (1999-2002). “Statistical Consulting in Research Projects.” Dr. Macchiavelli is the PI in the project. (Project AES SP 340).

SARE Producer Grant (1999-2001). “Breaking the habit: using herbicides as a temporary measurement.” (Rebecca Pérez, Project Coordinator). Granted by: Sustainable Agriculture Research and Education, Southern Region. Dr. Macchiavelli is one of the academic collaborators in this project.

USDA, CSREES Grant (1999-2003). “Using GIS and computer modeling to determine the prevalence of mastitis pathogens in Puerto Rico”. (Wilma Pagán, PI) Dr. Macchiavelli is a co-PI in this project. (Project AES-AH1)

Junta de Reglamentación y Promoción de la Carne de Res, Puerto Rico (1999-2000). “Evaluación de la calidad y composición química de carne de res proveniente de dos grupos de edad en Puerto Rico”. (Danilo Cianzio, PI). Dr. Macchiavelli is a collaborator in this project (Project AES – Z137).

Proyecto Atlantea (1998-1999). Granted by Universidad de Puerto Rico (Central Administration). Project: Biometría en Instituciones de Investigación Agrícola del Caribe. Dr. Macchiavelli is the PI in the project

Projet d’Assistance Technique pour la Protection des Parcs et Fôrets. (1998-2002) This project is part of the ATPPF program funded by World Bank. Dr. Macchiavelli has been working as a member of the CRDA support team coordinated by SECID (South Eastern Consortium for International Development) as information management specialist.

USDA, CSREES Grant (1997-1998). Model System for SSR-Based Paternity Analysis in Crop Plants. Dr. Macchiavelli is a co-PI in the project.

Mini-grant, Proyecto Atlantea (1997). Granted by Universidad de Puerto Rico (Central Administration). This grant helped Dr. Macchiavelli attend the V Meeting of the International Biometric Society Network. Xalapa (Mexico), August 1997.

LEQSF-Research Competitiveness Subprogram (1997-1998). Granted by LESQF, State of Louisiana. Project: Model System for SSR-Based Paternity Analysis in Crop Plants. Dr. Macchiavelli was a co-PI in the project.

USDA (1995-1996). Project: Team Nutrition Training Grants for Healthy School Meals- Louisiana, Oklahoma, Texas (LOT) Team Nutrition Training. (Alice Carroll, Project Director). Dr. Macchiavelli participated in the needs assessment and evaluation team.

US Army Contract No. DAMD 17-92-V-2009 (1992-1997). Effect of Food, Diet and Nutrition on Military Preparedness of Army Personnel and Dependents in a Peace Time Environment, US Army

Menu Modification Project. (Dr. Donna Ryan, Project Director). Dr. Macchiavelli participated as statistician in the project.

USDA (1995). Dietary Effects on Lipoproteins and Thrombogenic Activity - Delta Nutrition Project. (Dr. G. Bray, PI). Dr. Macchiavelli participated as statistician in the project.

Louisiana Systemic Initiative Program (1994-1995). Granted by LaSIP, State of Louisiana. Project: Integration of Mathematics and Science through Hands-on Experience (Dr. Paula Geiselman, Project Director).

Council of Research Summer Stipend (PI) (1994). Granted by Council of Research, Louisiana State University. Project: Salary support for summer research in modelling repeated measures.

Summer Research Grant (PI) (1994). Granted by USDA Bee Research Lab (Baton Rouge, LA). Project: Support research on analysis of repeated measurements of insect counts.

Summer Research Grant (PI) (1993). Granted by College of Agriculture, Louisiana State University (Millard S. Perkins Fund, LSU#101-31-6103). Project: Salary support for summer research in statistical models for repeated measurements.

Institutional Grant (Co-PI) (1987). Granted by Council for Research, Córdoba (Argentina), CONICOR (# 333/87). Project: Research equipment in the College of Agriculture.

Grant Recipient (PI) (1986). Granted by Fund for Promotion of Agricultural Technology (Argentina), CAPFTA (# 1662/86). Project: Research activities for M.S. thesis.

### **Editorial Activities**

**Associate Editor**, Communications in Biometry and Plant Science. 2006-2016.

**Scientific Committee**, Revista Colombiana de Estadística. 2006-Present.

**Statistical Reviewer**, Weed Research. 2013-Present.

**Statistical Editor**, Journal of Apicultural Research. 1993-2003.

**Chief Editor**, Revista de Ciencias Agropecuarias. 1987-1988.

**Associate Editor for Applications**, Revista de la Sociedad Argentina de Estadística. 1997-1999.

**Referee**, Revista de Ciencias Agropecuarias (1989), The American Statistician (1995), Obesity Research (1995), Interstat (1995), Revista de la Sociedad Argentina de Estadística (1996, 1997), Journal of Agriculture of the University of Puerto Rico (1998, 1999, 2000, 2002, 2005, 2007, 2008, 2010), Applied Statistics in Agriculture (1999, 2004, 2005), Agronomy Journal (2000, 2013), Crop Science (2001, 2005, 2006, 2007), Euphytica (2003), Interciencia (2004, 2011), Communications in Biometry and Plant Sciences (2006, 2009, 2015, 2016), Revista Colombiana de Estadística (2006, 2007, 2010, 2013), Environmetrics (2007), Spanish Journal of Agricultural Research (2007, 2008, 2009), Computational Statistics and Data Analysis (2008, 2011), SORT (2011), DataCritica

(2012), Weed Science (2014), Biostatistics (2014, 2015), JEP, Journal of Environmental Protection (2014), Genetic Selection Evolution (2016), Scientia Agricola (2018).

### **Statistical Consulting Experience**

**Consultant.** Internship programs in Internal Medicine and Family Medicine, Mayagüez Medical Center, Mayagüez, Puerto Rico, 2011-2013.

**Consultant,** College of Agriculture and Agricultural Experiment Station, University of Puerto Rico. Advising faculty, researchers and graduate students. Participating in collaborative research. 1996-Present.

**Member of SECID Technical Team** , Projet Centre de Recherche et Documentation Agricole / Assistance Technique pour la Protection des Parcs et Fôrets. This project is part of the ATPPF program funded by World Bank. Dr. Macchiavelli has been working in the SECID (South Eastern Consortium for International Development) team as information management specialist. 1998-2002.

**Director, Biostatistics Laboratory**, Pennington Biomedical Research Center, Louisiana State University. Advising faculty and graduate students. Participating in collaborative research. 1994-1996

**Consultant**, Statistical Consulting Service, Department of Experimental Statistics, Louisiana State University. Advising faculty and graduate students. Participating in collaborative research. 1992-1996.

**Graduate Assistant**, Center for Statistical Consulting, Department of Statistics, The Pennsylvania State University. Assisted faculty and graduate students from different colleges in experimental design and statistical analysis. Advised on the use of statistical software. Participated in collaborative research. 1990-1992.

**Consultant**, Servicio de Consultoría Estadística, Facultad de Ciencias Agropecuarias, Universidad Nacional de Córdoba, Argentina. Advised faculty and graduate assistants in the College of Agriculture. Integrated research teams in Plant Breeding, Genetics, Dairy Science, Arid Zone Ecology and Rural Extension. 1981-1983, 1986-1988.

**Consultant**, M.S. Programs in Plant Production and Animal Production, Universidad Nacional de Mar del Plata, Argentina. Advised graduate students in statistical analysis and experimental design. 1986-1987.

### **Statistical Computing Skills**

Ample experience in statistical software and programming: SAS (data management, all statistical procedures, matrix language, macros, graphics, etc.), R, InfoStat, Minitab, S-Plus, JMP, SPSS, etc.

## **Academic Awards and Honors**

Certificate of Recognition as member of the following research groups: "Center for Civil Infrastructure" and "Grupo de Investigación en Calidad de Agua y Manejo de Fuentes de Contaminación". Awarded during the 3<sup>rd</sup> Research Academy Symposium, May 15, 2015, UPRM.

Par Académico, Dirección Nacional de Programas de Postgrado, Consejo Nacional de Acreditación, Colombia. External evaluator for MS in Statistics Program at Universidad Nacional de Colombia, Bogotá. 2014.

Visitante Notable, Mar del Plata (Argentina), September 2013. Awarded by the municipal legislature.

Best Poster, XXI Simposio Nacional de Estadística, Colombia, July 2011

Premio Profesor Distinguido, Southwestern Educational Society (2009).

Elected Member, Phi Kappa Phi, 2007.

Best Poster, XXIII International Biometric Conference. Montreal, Canada, July 2006

Premio Profesor Distinguido, Gamma Sigma Delta, 2004.

Comité de premiaciones, Gamma Sigma Delta, 2003.

Comité de premiación y reconocimiento, Sociedad Puertorriqueña de Ciencias Agrícolas, 2002.

Elected Member, Gamma Sigma Delta, 2001.

Visiting FOMECA Professor, Escuela Graduada, Facultad de Agronomía, Universidad Nacional de Buenos Aires, Argentina (1999).

Best paper in Statistics, Data Analysis and Modeling, SUGI 21, SAS Users Group Internat. Chicago, March 1996.

Participation in Writing Workshop for Young Researchers in Statistics. Awarded by ASA, IMS and Biometrics Society with NSF funds. Toronto, August 1994.

Associate Member of the Graduate Faculty, Louisiana State University. 1992-1996.

August and Ruth Homeyer Graduate Fellowship (Eberly College of Science, Pennsylvania State Univ.). April, 1991.

VollmerKleckner Scholarship (Department of Statistics, The Pennsylvania State University). May, 1989.

External Fellowship, CONICET (National Council for Scient. and Technol. Research, Argentina). August, 1988.

Graduate Fellowship, INTA (National Institute of Agricultural Technology, Argentina). 1983-1985.

Premio UNIVERSIDAD, Mención de Honor (Univ. Nacional de Córdoba, Argentina). This award is given to the best ranked graduating student in each college. March, 1981.

## **Academic Activities**

### **Student Supervision**

**Major Professor:** 7 M.Sc. student in Mathematics, Applied Statistics Option (Univ. of Puerto Rico, 2005, 2006, 2010, 2011, 2012, 2014, 2015), 1 M.Sc. student in Animal Nutrition (Mediterranean Agronomic Institute of Zaragoza and University of Zaragoza, Spain, 2011), 1 M.Sc. student in Applied Statistics (National University of Córdoba, 2004), 1 M.Sc. student in Horticulture (Univ. of Puerto Rico, 1998), and 9 Master of Applied Statistics (Louisiana State University, 1992-1996) students.

The special problems of the Applied Statistics students (this is a non-thesis program with a special problem requirement) are:

Gardner, David (1993). Using model selection criteria in categorical models.

Song, Xin (1994). Analysis of repeated measures with missing data.

Shao, James (1994). Multivariate regression models for testing "near" equilibrium conditions for smectites in acidic soils of Northwestern Louisiana.

Fabellar, Anabella (1994). Fitting stagewise regression models on apolipoprotein AIV polymorphism data.

Wu, Xiaofei (1995). Using Poisson regression with an overdispersion parameter to model water weevil infestation level in rice.

Ma, Ju Yu (1995). Informative dropouts in longitudinal data analysis.

Buteler, Mario (1995). Determining paternity in polyploids: hexaploid simulation studies.

Scheffler, Scott (1995). Multiresponse Antedependence Models.

Prada, Yelitza (1996). Error rates and power of nine multiple comparison procedures for the case of unequal sample size.

The M.Sc. Thesis of the Horticulture student was:

Jean-François, Francisce (1999). Multivariate Analysis of horticulturally important characteristics in different papaya (*C. Papaya L.*) genotypes evaluated in Puerto Rico.

The M.Sc. Thesis of the Applied Statistics student was:

Natacha Liseras (2004). Análisis de encuestas basado en diseño y modelos muestrales: una comparación entre métodos de inferencia aplicados al estudio de la vocación emprendedora en alumnos universitarios.

The M.Sc. Thesis of the Mathematics student were:

Lisette Milena Gaona (2005). Matrices de Covarianza Estructurada en Modelos con Mediciones Repetidas.

Pedro Alejo Torres Saavedra (2006). Percentile Curves in Binary Longitudinal Data.

Alexander Martínez Suárez (2010). Métodos Estadísticos para la detección de umbrales de Contaminación en Ecosistemas Acuáticos de Agua Dulce.

Jairo Ayala Godoy (2011). Modelos Lineales Generalizados Mixtos con Distribución Binomial Negativa.

Yuri García (2012). Modelos no Lineales Mixtos con Distribución Beta.

Abner Ortiz Camacho (2014). Aplicación de Técnicas Geo-estadísticas para datos con distribución normal y binomial.

Adriana Calvo (2015). Comparación de Modelos de Regresión Semiparamétricos mixtos con Distribución Beta

The M.Sc. Thesis of the Animal Nutrition student (co-directed) was:

Myriam Taghouti (2011). Relationship among Body Condition, Breeding System and Reproductive Traits in Rabbit Does: Practical Application of Bioelectrical Impedance Method.

**Ph.D. Committee Member:** 13 students (for one of them, PhD minor professor).

**Master's Committee Member:** approx. 50 students.

### **Continuing Education**

Certificate “Educador Virtual”, Awarded by University of Puerto Rico Mayaguez (Division of Continuing Education). September 2017-April 2018 (Three 3-credit courses, 120 hours).

Participated in the Symposium “La investigación y la innovación como aceleradores de nuevas oportunidades en Puerto Rico”. Mayagüez, Puerto Rico, May 15, 2015. (8 hours)

Attended the minicourse: “Statistics for Spatio-Temporal Data”, taught by Dr. Christopher Wikle (8 hours). Manhattan, Kansas, 4/26/15.

Participated in the the Symposium “La transformación de retos en oportunidades: Impulsando la Investigación y la Labor Creativa en el RUM”. Mayagüez, Puerto Rico, May 9, 2014. (8 hours)

Participated in the the Forum “¿Cómo mejorar la cultura de investigación en la UPRM?”. Mayagüez, Puerto Rico, December 6, 2013. (7.5 hours)

Attended the Short course “Splines con Penalizaciones: teoría y aplicaciones en bioestadística”, (6 hours) taught by Prof. María Durban. IV Encuentro Iberoamericano de Biometría, Mar del Plata (Argentina), September 2013.

Attended the Short course “Generalized Additive Models for Location, Scale, and Shape in R”, (4.5 hours) taught by Prof. Mikis Stasinopoulos. CLATSE 2012, Córdoba, Argentina (October 2012).

Attended the Short course “Human vs. Artificial Intelligence” by Prof. Douglas Hofstadter (7 hours activity in the cycle “The Convergence of Science, Technology, and the Humanities”). University of Puerto Rico, Mayagüez, 17 September 2012.

Attended the workshop “Introduction to STATA” (1.5 hours). 6<sup>th</sup> Biennial Meeting IBS-RCAC, Kingston, Jamaica, November 2011.

Attended the short course “Introduction to GLAMM with applications” taught by Drs. María Pilar Díaz and Alberto Osella (4 hours). Trelew, Argentina, 9-11/9/09.

Participated in the Conference on Ethics in Research, coordinated by Dr. Jorge Ferrer and Efraín O’Neill (9 hours). Rincón, Puerto Rico, August 28-29, 2009.

Attended the workshop “Manejo de Cursos en Moodle”, taught by Dr. Cristina Pomales (1.5 hours). Mayagüez, Puerto Rico, 21/8/09.

Attended the workshop “Creación de tutoriales interactivos mediante Wink”, taught by Prof. José Navarro. (1.5 hours). Mayagüez, Puerto Rico, 11/8/07.

Attended the short course “The Analysis of Longitudinal and Incomplete Data” taught by Drs. Geert Verbeke and Geert Molenberghs (4 hours). Margarita, Venezuela, 10/3-4/07.

Attended the workshop “Primer Encuentro Relación Estudiante-Facultad”. (6 hours). Mayagüez, Puerto Rico, 8/17/07.

Attended the minicourse: “Modelos Lineales Generalizados e Aplicações”, taught by Dr. Clarice Demétrio (6 hours). Corrientes, Argentina, 10/12/05.

Participant in the workshop “Software libre y enseñanza complementada por Internet”, taught by Dr. Mario Núñez, Mayagüez, Puerto Rico, 9/27/05 (1.5 hours).

Attended the minicourse: “Data Mining Using SAS Applications”, taught by Dr. George Fernandez (8 hours). Manhattan, Kansas, 4/25/04.

Participant in the workshop “Taller de Adiestramiento de WebCT”, taught by Dr. Aury Curbelo, Mayagüez, Puerto Rico, 1/13/04 (7 hours).

Participant in the short course “Statistical Analysis of QTLs”, taught by Dr. Emilio Carbonell, Mayagüez, Puerto Rico, 6/11/03 (8 hours).

Participant in the workshop “Federal Grants and Oportunities Workshop”, United States Department of Agriculture, San Juan, Puerto Rico, 3/12/02 (8 hours).

Participant in the workshop “Outcome Aesessment”, University of Puerto Rico – Mayagüez, 5/29-30/2002 (15 hours).

Attended the minicourse: “Determining Sample Size and Power in Study Planning”, taught by Dr. Ralph O’Brien (8 hours). Manhattan, Kansas, 4/28/02.

Attended the minicourse: “Models and Design for Agriculture Mixture Experiments”, taught by Dr. John Cornell (8 hours). Manhattan, Kansas, 4/30/00.

Attended the minicourse: “Computer Intensive Statistics in Biology”, taught by Dr. Bryan Manly (8 hours). Manhattan, Kansas, 4/25/99.



Participant in the workshop “Presentaciones electrónicas en Power Point,” organized by Centro de Enriquecimiento Profesional (University of Puerto Rico-RUM). (1999, 2 hours).

Attended the minicourse: “Analysis of Nonlinear Models”, taught by Dr. Douglas Bates (8 hours). Manhattan, Kansas, 4/26/98.

Participant in the following workshops, organized by Centro de Enriquecimiento Profesional (University of Puerto Rico-RUM): Objetivos Instruccionales I, Estilos de Enseñanza y Aprendizaje II, Aprendizaje Cooperativo I, El Avalúo como Proceso Indispensable para la Efectividad de la Enseñanza I, Construcción Efectivas de Exámenes I & II. (Academic Year 1996-97, 9 hours).

### **Committees**

**Member**, Committee on Procedures and Regulations, Faculty of Agricultural Sciences, University of Puerto Rico, RUM. 2017-Present.

**Member**, Administrative Board, University of Puerto Rico, RUM. 2015-2017. (ex-officio member)

**Member**, State Committee for Soil Conservation, Department of Agriculture, Commonwealth of Puerto Rico. 2017. (ex-officio member)

**Member**, State Advisory Committee for National Resource Conservation Service. US Department of Agriculture, 2015-2017.

**Member**, Board for Agricultural Insurance, Department of Agriculture, Commonwealth of Puerto Rico. 2015-2017.

**Member**, Ad-Hoc Committee for Agriculture Strategic Plan, Department of Agriculture, Commonwealth of Puerto Rico. 2015-2017.

**Member**, Advisory Board of the Research Academy, Center for Professional Enrichment, University of Puerto Rico, RUM. 2013-2015.

**Member**, Comité de Matrícula, University of Puerto Rico, RUM. 2013-2015.

**Member**, Ad hoc Committee for University Reform. University of Puerto Rico, RUM. 2011-2013.

**President**, Curricular Affairs Committee, Academic Senate, University of Puerto Rico, RUM. 2011-2013.

**Member**, Comité de Asuntos Académicos, Departamento de Cultivos y Ciencias Agroambientales, University of Puerto Rico, RUM. From 2009.

**Member, Ad-hoc Committee to mediate in a conflict involving protesting students.** Academic Senate, University of Puerto Rico, RUM. 2009-2010.

**Member, Ad-hoc Committee to evaluate alternative structures for the administration of research and graduate studies.** Academic Senate, University of Puerto Rico, RUM. Since 2008.

**Member, International Program Committee,** XXVI International Biometric Conference, Kobe, Japan, 2010-2012.

**Member, Representative Council, IBS.** 2011-2014.

**Member, International Biometric Council.** 2008-2012.

**Member, Local Organizing Committee,** XXV International Biometric Conference, Florianopolis, Brazil, 2008-2010.

**Member, International Program Committee,** XXV International Biometric Conference, Florianopolis, Brazil, 2008-2010.

**Member, Ad-hoc Committee to evaluate academic withdrawals.** Academic Senate, University of Puerto Rico, RUM. 2008-2011.

**Member, Ad-hoc Committee to evaluate proposals and alternatives for the academic schedule.** Junta Administrativa, University of Puerto Rico, RUM. 2006-2007.

**Member, Communications Committee,** The International Biometric Society. 2007-2010.

**Member, Committee to Review IBS Business Office,** The International Biometric Society. 2005-2006.

**Member, InformationTechnology Working Party,** The International Biometric Society. 2004-2006

**Member,** Comité de Asuntos Curriculares, Senado Académico, University of Puerto Rico, RUM. 2006-2010, 2011-2013 (President).

**Member,** Comité de Asuntos Estudiantiles, Senado Académico, University of Puerto Rico, RUM. 2005-2006.

**Academic Senator,** University of Puerto Rico, RUM. 2003-2010, 2011-2013, 2015-2017 (ex-officio member)

**Member,** Comité de Personal, Departamento de Agronomía y Suelos, University of Puerto Rico, RUM. 2004-2008.

**Member,** Comité de Asuntos Académicos, Senado Académico, University of Puerto Rico, RUM. 2004-2010. Committee president since 2007.

**Member,** Comité de Asuntos Académicos, Facultad de Ciencias Agrícolas, University of Puerto Rico, RUM. 2004-2010.

**Member**, Junta Consultiva del Plan de Práctica Intramural, University of Puerto Rico, RUM. 2004-2006.

**Member**, Comité de Apelaciones para el Procedimiento de Reclamación de Notas, University of Puerto Rico, RUM. 2003-2005.

**Member**. Task Force 8 (Educational Offerings), UPRM-MSCHE Institutional Steering Team, RUM 2003-2004.

**Member**. Graduate Council, University of Puerto Rico, RUM, 2001-2003.

**Member**. Advisory Committee on Serial Publications, RUM, Univ. of Puerto Rico, 2000-2002.

**Member**. Graduate Committee, Department of Agronomy and Soils, Univ. of Puerto Rico, 1999-2001.

**Member**. Committee to propose a PhD program in Agriculture. College of Agriculture, Univ. of P. Rico, 1998-1999, 2003-2004.

**Member**. Curriculum Committee, Department of Agronomy and Soils, Univ. of Puerto Rico, 1998-1999.

**Member**. Ad-hoc committee to evaluate student's perception of the Master's program, Department of Agronomy and Soils, Univ. of Puerto Rico, 1998.

**Member**. Courses and Curriculum Committee, Dept. of Experimental Statistics, Louisiana State Univ. 1995-1996.

**Member**. Committee on Clinical Data. Pennington Biomedical Research Center. 1994-1996.

**Member**. Master of Applied Statistics Comprehensive Exam Committee (Department of Experm. Statistics, Louisiana State University). Summer, Fall 1993, Fall 1994, Summer, Fall 1995, Spring, Summer 1996.

**Member**. International Education Committee, Faculty Senate, Louisiana State University. 1993-1996.

**Member**. Courses and Curriculum Committee, College of Agriculture, Louisiana State University. 1993-1996.

**Member**. Planning and Organization Committee for Globalizing the College of Agriculture Curricula Project. College of Agriculture, Louisiana State Univ. 1993-1994.

**Representative**. International Student Council, The Pennsylvania State Univ. 1991-1992.

**Member**. Student Advisory Committee, Department of Statistics, The Pennsylvania State Univ. 1989-1991.

**Organizer.** II Jornadas de Investigación de la Facultad de Ciencias Agropecuarias, Córdoba. 1988.

**President.** Research Advisory Committee, Facultad de Ciencias Agropecuarias, Universidad Nacional de Córdoba. 1987-1988.

**Member.** Council for Scientific and Technological Research, Universidad Nacional de Córdoba. 1986-1988.

**Member.** Council of Directors, Facultad de Ciencias Agropecuarias, Univ. Nacional de Córdoba. 1986-1988.

**Organizer.** XIV Coloquio Argentino de Estadística. 1986.

### **Participation in Conferences and Meetings**

Congreso Argentino-Chileno de Biometría y Reunión Científica Anual Grupo Argentino de Biometría. Neuquén (Argentina), October 10-12, 2018

XXIX International Biometric Conference. Barcelona (Spain). July 8-13, 2018. (gave contributed talk, chaired session).

Advances in Statistical Methods in Agriculture – Annual Meeting Projects NCCC170. Fayetteville, Arkansas, June 28-29, 2018.

38th Annual Conference on The First-Year Experience. San Antonio, Texas, 10-13 February, 2018.

VI Reunión Iberoamericano de Biometría. Quito (Ecuador), November 15-18, 2017 (scientific committee, presented invited talk, and taught short course)

Congreso Latinoamericano de Estadística y Reunión Científica Anual Grupo Argentino de Biometría. Rosario (Argentina), October 18-20, 2017 (presented demonstrative sesión “In-Situ Analysis”)

61th World Statistics Congress. Marrakech (Morocco), July 16-21, 2017 (gave invited talk, co-authored poster).

Advances in Statistical Methods in Agriculture – Annual Meeting Projects NCCC170. Elk River, Minnesota, June 24-25, 2017.

XXVIIIth International Biometric Conference, 9-16 July 2016, Victoria, Canada (presented invited paper and poster)

XXI Reunión Científica del Grupo Argentino de Biometría, Corrientes (Argentina), 28-30 September, 2016.

XV Conferencia Española de Biometría y V Encuentro Iberoamericano de Biometría (member scientific committee, presented contributed paper). Bilbao, Spain, 18-22 September 2015.

XXV Simposio Internacional de Estadística. 5-8 August, 2015, Armenia (Colombia). (member scientific committee, presented invited paper).

51st Annual Meeting, Caribbean Food Crop Society, 20-24 July, 2015, Paramaribo, Surinam.

XVIII CACHE Annual General Assembly, 21-23 July, 2015, Paramaribo, Surinam (represented College of Agricultural Sciences).

Advances in Statistical Methods in Agriculture – Annual Meeting Projects NCCC170. Mayaguez, PR, June 22-23, 2015.

Annual Conference on Applied Statistics in Agriculture, 26-29 April, 2015, Manhattan, Kansas (presented contributed paper).

Northeast Alliance for Graduate Education and the Professoriate—No longer a dream deferred, NEAGEP, 8<sup>th</sup> Science Day, Mayagüez, PR, March 19, 2015.

XXX Seminario Interuniversitario de Investigación Matemática (SIDIM), 27-28 February 2015, Mayagüez, PR, p.5.

Escuela de Verano, Departamento de Estadística, Universidad Nacional de Colombia. Medellín (Colombia), November 28-30, 2014. (gave short course).

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. Washington, DC, September 29-October 1, 2014.

XIX Reunión Científica del Grupo Argentino de Biometría, 10-12 September, 2014, Santiago del Estero, Argentina. (gave invited talk, gave short course, member scientific committee).

Advances in Statistical Methods in Agriculture – Annual Meeting Projects NCCC170. Lincoln, Nebraska, Michigan, July 17-18, 2014.

XXVIIth International Biometric Conference, 6-11 July 2014, Florence, Italy (presented contributed paper and poster, member Representative Council)

X Congreso Internacional de Investigación Científica (X CIC), 12-13 June, 2014, Universidad Autónoma de Santo Domingo, Dominican Republic. (gave invited talk, gave short course).

Northeast Alliance for Graduate Education and the Professoriate—No longer a dream deferred, NEAGEP, 7<sup>th</sup> Science Day, Mayagüez, PR, February 13, 2014.

Escuela de Verano, Centro de Estadística Aplicada en Ciencias Sociales y Econometría. Cali (Colombia), November 7-9, 2013. (gave invited talk, gave short course, member scientific committee).

XVIII Reunión Científica del Grupo Argentino de Biometría y IV Encuentro Iberoamericano de Biometría, (Mar del Plata, Argentina), September 25-27, 2013 (presented invited talk, member Scientific Committee, member Poster Evaluation Committee).

59th World Statistics Congress. Hong Kong (China), August 25-30, 2013 (gave invited talk, co-authored poster).

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. Washington, DC, September 9-11, 2013.

Advances in Statistical Methods in Agriculture – Annual Meeting Projects NCCC170. East Lansing, Michigan, June 26-28, 2013.

X Congreso Latinoamericano de Sociedades de Estadística, CLATSE 2012, Córdoba, Argentina (October 2012). (co-authored papers, gave short course, member Awards Committee for Young Biometricians)

XXVI International Biometric Conference, Kobe, Japan, August 2012 (Co-authored papers, member International Program Committee).

XXI Simposio Internacional de Estadística de Colombia, Bogotá, Colombia, July 17-21, 2012 (presented invited paper and gave short course).

Advances in Statistical Methods in Agriculture – Annual Meeting Projects NCCC170 and USSES. SAS Institute, Cary, North Carolina, June 28-29, 2012.

Seminario Interuniversitario de Investigaciones en Ciencias Matemáticas. Mayagüez, PR, March 2-4, 2012. (presented paper, chaired session, evaluated student presentations)

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. New Orleans, Louisiana, January 30-February 1, 2012.

6<sup>th</sup> Biennial Meeting Caribbean and Central American Region, International Biometric Society (Kingston, Jamaica) November 15-17, 2011 (presented paper, member Scientific Committee)

XIII Conferencia Española y III Encuentro Iberoamericano de Biometría, (Barcelona, Spain), September 5-9, 2011 (presented paper, member Scientific Committee, presided Awards Committee, chaired session)

XXI Simposio de Estadística de Colombia, Bogotá, Colombia, July 19-23, 2011 (presented paper)

Advances in Statistical Methods in Agriculture – Annual Meeting Project NCCC170. Purdue University, Indiana, July 7-8, 2011.

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. San Francisco, California, March 21-23, 2011.

American Phytopathological Society – Caribbean Division and Entomological Society of America Joint Annual Meeting. San Juan, Puerto Rico, March 19-22, 2011 (presented invited talk).

PROTECT project Annual Retreat. Dorado (Puerto Rico), February 3-5, 2011.

XXV International Biometric Conference, Florianopolis, Brazil, December 2010 (Co-authored paper, chaired session, member Local Organizing Committee, member International Program Committee).

Reunión Científica Anual, Sociedad Puertorriqueña de Ciencias Agrícolas. November 2010. (co-authored papers and poster)

XX Simposio de Estadística de Colombia, Santa Marta, Colombia, August 13-15, 2010 (presented paper)

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. San Diego, California, February 22-24, 2010. (presented paper)

XII Conferencia Española de Biometría. Cádiz, España, September 19-26, 2009 (gave invited lecture, co-authored posters).

XIV Reunión Científica del Grupo Argentino de Biometría. Trelew, Argentina. September 5-13, 2009 (participated in the scientific committee, gave invited lecture, coordinated session)

Conferencia sobre Ética en la Investigación. Rincón, Puerto Rico, August 28-29, 2009.

V Reunión de la Región de Centro América y del Caribe de la Sociedad Internacional de Biometría y II Encuentro Iberoamericano de Biometría, Veracruz, Mexico, July 27-31, 2009 (participated in the organizing committee, scientific committee)

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. Chicago, Illinois, March 29 – April 2, 2009.

Math and Science Partnerships (MSP) Regional Conference, organized by the US Department of Education. San Francisco, California, February 13-15, 2008.

XII Reunión Científica del Grupo Argentino de Biometría y el I Encuentro Argentino Chileno de Biometría, San Martín de los Andes, Argentina, October 10-12, 2007 (taught short course, presented poster).

IV Reunión de la Región de Centro América y del Caribe de la Sociedad Internacional de Biometría y IV Encuentro Colombia-Venezuela de Estadística, Margarita, Venezuela, October 2-5, 2007 (participated in the organizing committee, scientific committee, gave invited talk, organized session).

XI Conferencia Española de y I Encuentro Iberoamericano de Biometría, Salamanca, Spain. June 24-26, 2007 (taught short course, participated in the organizing committee and the scientific committee, presented poster).

Math and Science Partnerships (MSP) Conference organized by the US Department of Education. Washington, DC, December 11-13, 2006.

Math and Science Partnerships (MSP) Conference organized by the US Department of Education. Chicago, November 8-10, 2006.

Jornadas Internacionales de Estadística. Rosario, Argentina, October 10-13, 2006 (coordinated round table on Data Analysis)

XVIII Conference on Applied Statistics in Agriculture, Manhattan, Kansas. April 30-May 2, 2006 (presented poster)

Reunión Científica Anual, Sociedad Puertorriqueña de Ciencias Agrícolas. November 2005. (co-authored paper)

X Reunión Científica, Grupo Argentino de Biometría, Corrientes, Argentina, October 12-14, 2005 (gave invited talk and presented poster).

X Conferencia Española de Biometría, Oviedo, Spain. May 2005 (gave invited conference).

Reunión Científica Anual, Sociedad Puertorriqueña de Ciencias Agrícolas. November 2004. (chaired session).

IX Reunión Científica, Grupo Argentino de Biometría, La Rioja, Argentina, September 30-October 2004 (gave short course and presented poster).

XXII International Biometric Conference. Cairns (Australia), July 2004 (presented poster)

XVI Annual Kansas State University Conference on Applied Statistics in Agriculture. Manhattan (Kansas), April 2004. (presented poster).

“Federal Grants and Opportunities Workshop”, United States Department of Agriculture, San Juan, Puerto Rico, 1/25/04 (presented report).

Reunión Científica Anual, Sociedad Puertorriqueña de Ciencias Agrícolas. November 2003. (presented poster).

VIII Reunión Científica, Grupo Argentino de Biometría, Mendoza, Argentina, October 2003 (gave short course and presented poster)

Simposio Nacional de Estadística, Armenia, Colombia, August 2003 (gave short course, presented invited talk and poster)

II Reunión Regional de Biometría, Mayagüez, Puerto Rico, June 2003 (organized meeting and presented invited talk)

Colloquium “Interdisciplinary challenges in Writing at RUM”, Univ. of Puerto Rico, Mayaguez, March 2003 (presented invited talk)



“Federal Grants and Opportunities Workshop”, United States Department of Agriculture, San Juan, Puerto Rico, 3/12/02 (presented report).

Reunión Científica Anual, Sociedad Puertorriqueña de Ciencias Agrícolas. November 2002. (presented contributed papers).

V Congreso Latinoamericano de Sociedades de Estadística y Jornadas Internacionales de Enseñanza de Estadística, Buenos Aires, Argentina, October 2002 (taught two short courses and participated in a workshop on data analysis).

XXI International Biometric Conference, Freiburg, Germany. July 2002 (presented paper).

XIV Annual Kansas State University Conference on Applied Statistics in Agriculture. Manhattan (Kansas), May 2002. (presented paper).

VII Meeting of the International Biometric Society, Central America and Caribbean Region., Turrialba, Costa Rica, November 2001. (gave contributed talk).

Spring Meeting, International Biometric Society, ENAR Region. Charlotte, NC, March 2001 (Co-Organized Invited Session, gave invited talk).

V Reunión del Grupo Argentino de Biometría. Vaquerías, Córdoba, Argentina, October 2000 ( Member of Scientific Committee, Coordinated round table on Data Analysis, taught minicourse on Categorical Data).

II Encuentro Nacional de Docentes de Estadística en Facultades de Agronomía y Afines, Vaquerías, Córdoba, October 2000 (participated in round table).

12<sup>th</sup> Kansas State University Conference on Applied Statistics in Agriculture. Manhattan (Kansas), May 2000. (Presented paper.)

32<sup>nd</sup>. Symposium on the Interface: Modeling the Earth Systems. New Orleans, Louisiana, April 2000. (Presented invited paper and poster.)

Proyecto Atlantea: Resultados de las IV y V Convocatorias. San Juan, Puerto Rico, March 15-17, 2000. (Presented paper.)

VI Meeting of the International Biometric Society Network for Central America, the Caribbean, Mexico, Colombia and Venezuela. Tobago, June 1999. (Presented contributed paper and chaired a session).

XXXIX Annual Meeting, American Phytopathological Society – Caribbean Division and XXXI Annual Meeting of the Organization of Tropical Nematologists, San Juan, Puerto Rico, June 1999. (organized a Symposium of Statistical Methods in Phytopathology and Nematology, presented an invited paper and two contributed papers).

Eleventh Kansas State University Conference on Applied Statistics in Agriculture. Manhattan (Kansas), April 1999. (Presented poster.)

Atelier sur le Cadre de Travail du Centre de Recherche et Documentation Agricole / Assistance Technique pour la Protection des Parcs et Forêts, Port au Prince, Haiti, February 1999. (presented a proposal for information management).

Reunión Científica Anual, Sociedad Puertorriqueña de Ciencias Agrícolas. San Juan (Puerto Rico), November 1998. (co-authored paper).

Tenth Kansas State University Conference on Applied Statistics in Agriculture. Manhattan (Kansas), April 1998. (Presented poster.)

V Meeting of the International Biometric Society Network for Central America, the Caribbean, Mexico, Colombia and Venezuela. Xalapa (Mexico), August 1997. (Presented contributed paper and taught an invited short course).

SUGI 21, SAS Users Group International. Chicago, March 1996. (Presented contributed paper.)

Louisiana Chapter Meeting, American Statistical Association. Baton Rouge (Louisiana), November 10, 1995.

Joint Statistical Meetings, ASA, ENAR, WNAR. Orlando (Florida), August 1995. (Presented poster.)

Fourth Network Meeting, Biometrics Society (Central American, Caribbean, Colombian and Venezuelan Regions) and International Symposium on Statistics in Agriculture and Environment. Santa Marta (Colombia), June 1995. (Chaired a contributed papers session.)

Satellite Meeting, Statistics in Biotechnology and Molecular Biology. Cali (Colombia), June 1995. (Presented invited paper.)

Joint Spring Meeting, Biometrics Society (ENAR), Institute of Mathematical Statistics and sections of American Statistical Association. Birmingham (Alabama), March 1995. (Presented invited paper.)

Joint Statistical Meetings, ASA, ENAR, WNAR. Toronto (Canada), August 1994. (Presented contributed paper.)

Third Network Meeting, Biometrics Society (Central American, Caribbean, Colombian and Venezuelan Regions). Caracas (Venezuela), June 1994. (Presented invited paper.)

Sixth Kansas State University Conference on Applied Statistics in Agriculture. Manhattan (Kansas), April 1994. (Presented contributed paper.)

Louisiana Chapter Meeting, American Statistical Association. Baton Rouge (Louisiana), April 1994.

Louisiana Chapter Meeting, American Statistical Association. Lafayette (Louisiana), November 1993. (Presented contributed paper.)

Joint Statistical Meetings, IMS, ASA, ENAR, WNAR. San Francisco (California), August 1993. (Presented contributed paper.)

Second Network Meeting, Biometrics Society (Central American, Caribbean, Colombian and Venezuelan Regions). San José (Costa Rica), June 1993. (Presented invited paper.)

Louisiana Chapter Meeting of American Statistical Association. New Orleans (Louisiana), April 1993.

Seventh International Conference on Multivariate Analysis, USA Meeting. University Park (Pennsylvania), May 1992. (Chaired a contributed papers session)

Joint Meeting, Biometrics Society (ENAR), Institute of Mathematical Statistics and American Statistical Association. Baltimore (Maryland), April 1990. (Presented contributed paper.)

II Jornadas de Investigación de la Facultad de Ciencias Agropecuarias. Córdoba (Argentina), July 1988. (Organizer)

XV Coloquio Argentino de Estadística y Seminario sobre Metodología Estadística para Análisis Cíclico y Estacional. Mar del Plata (Argentina), September 1987.

I Jornadas de Investigación de la Facultad de Ciencias Agropecuarias. Córdoba (Argentina), December 1986. (Organizer)

XIV Coloquio Argentino de Estadística. Villa Carlos Paz (Córdoba, Argentina), November 1986. (Organizer)

XVI Congreso Argentino de Genética. Río Cuarto (Córdoba, Argentina), September 1986. (Presented contributed poster.)

Seminário Internacional sobre Perspectivas do Ensino de Ciências Agrárias no Sul do Brasil. Ijuí (Rio Grande do Sul, Brasil), August 1986.

XIII Coloquio Argentino de Estadística. Mendoza (Argentina), November 1985. (Presented invited paper.)

XII Coloquio Argentino de Estadística. Bahía Blanca (Argentina), November 1984.

XII Congreso Argentino de Genética. Salta (Argentina), August 1981. (Presented contributed paper.)

### **Scientific and Professional Societies**

Sociedad Argentina de Estadística (1984-1988).

Institute of Mathematical Statistics (1990-1995).

American Statistical Association. (1989-present).

Member, Subsection on Statistical Consulting.

Member, Puerto Rico Chapter (2014-present)

International Biometric Society. (1998-present).  
Member, Caribbean and Central American Region.  
Secretary-Treasurer, Caribbean and Central American Region. 2002-2004.  
Vice-President, Caribbean and Central American Region. 2005 and 2008.  
President, Caribbean and Central American Region. 2006-2007.  
Council Member, 2008-2012.  
Representative Council Member, 2011-2015.  
Member, Committee on Communications, 2006-Present.

Asociación de Profesores del Recinto Universitario de Mayagüez. (2001-present).

Sociedad Puertorriqueña de Ciencias Agrícolas (1998-present)

Phi Kappa Phi, The Honor Society (2007-present).

Sigma Xi, The Scientific Research Society (1998-2007).

Gamma Sigma Delta, The Honor Society of Agriculture (2001-present)  
Member, University of Puerto Rico Chapter  
Vice-President, University of Puerto Rico Chapter (2001-2002)

International Statistical Institute (2013-present)

### **Language Proficiency**

Spanish, English, Italian, and French.

### **Personal Data**

Born in Córdoba (Argentina), October 22, 1958.  
Married, 2 children.  
US, Italian, and Argentinean citizen.

### **References**

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