

**LENIN J. RAMIREZ-CANDO**

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Yachay Tech University

Av. Mariana de Jesús y Panzaleos,  
Sangolqui-Ecuador, ZIP 102105

Urququi, Ecuador

**Education**

- 2018      **Doctor of Philosophy** (PhD). Bio-systems Engineering, University of Florence, Italy.  
Title of Dissertation: Environmental impact of bioproducts derived from non-conventional oleaginous: Falseflax (*Camelina sativa*), Safflower (*Carthamus tinctorius*), Crambe (*Crambe abyssinica*) and Flax (*Linum usitatissimum*).
- 2014      **Master of Science**, Toxicology, University of Pavia, Italy.  
Thesis: Neuro-Cytotoxic profile of Poly Vinyl Pirrolidone (PVP) Iron Oxide nanoparticles.
- 2011      **Bachelor of Sciences**, Biotechnology, Salesian Polytechnic University, Quito Ecuador.

**Professional Appointments**

- 07/2022-present      **Dean**, School of Biological Sciences and Engineering, Yachay Tech University, Urququi-Ecuador
- 08/2022-present      **Member of the consulting board**, Research Public Company EPICENTRO, Ecuador.
- 11/2019- present      **Associate Professor**, School of Biological Sciences and Engineering, Yachay Tech University, Urququi-Ecuador
- 08/2022-02/2023      **Visiting Professor**, Department of Environmental Sciences and Development Zamorano University, Morazan-Honduras
- 02/2019-02/2022      **Visiting Professor**, University of Guayaquil, Department of Chemical Engineering, Master of Science Food Processing, Guayaquil-Ecuador.
- 02/2015-12/2020      **Doctoral Researcher**, GESAAF department, University of Florence, Florence-Italy.
- 01/2016-12/2019      **Freelance Consultant**, several sector focused on LCA consultancy, projects develop in Latin America.
- 03/2013-05/2019      **Assistant Professor**, Department of Life Sciences, Salesian Polytechnic University, Quito-Ecuador,
- 07/2015-10/2018      **Associated Editor**, La Granja Life Sciences Journal, Scopus indexed journal.
- 01/2012-02/2013      **Environmental Specialist**, LabSu Laboratory, Orellana Ecuador.

## **Research Interests**

Toxicology, Life Cycle Sustainability Assessment, Biostatistics, Environmental Chemistry, Biomaterials, Nano-toxicology, in vitro modelling for toxicology.

## **Funded Research Projects**

- 2022-2025      **International Centre for Genetic Engineering and Biotechnology (ICGEB)**
- Microalgae biomass application in broilers as strategy to contain emerging Salmonella enterica serovar Infantis in Ecuador.
- Grant € 36000.
- 2021-2023      **EXPLORATIONS NOVOMINNING**
- Characterization and Eco-Toxicological Evaluation of the Residues contained in Mining Drilling Mud for its Sustainable Use,
- Grant \$ 89000.
- Characterization and Eco-Toxicological Evaluation of the Waste Contained in WWTP Sludge for its Sustainable Use,
- Grant: \$ 18900.
- 2019-2021      **United Nations Development Programme (UNDP)/SENESCYT**
- Molecular mechanisms of neuromodulation by neonicotinoid-type pesticides in a human neuron culture model,
- Grant \$ 50000.
- 2016-2018      **Salesian Polytechnic University (Internal research plan),**
- Social and Environmental Life Cycle Assessment of productive chain of Quinoa (Chenopodium quinoa) in Ecuador,
- Grant \$ 65000.
- 2015-18      **Agricultural Research Center-Ministries of Science, Italy**
- PROGETTO SUSCACE, SCHEDA AGRICOLTURA PER BIOPRODOTTI (AXBBproject) VALUTAZIONE DI SOSTENIBILITÀ DELLE COLTURE SVILUPATE.
- 2015-16      **Salesian Polytechnic University (Internal research plan),**
- Effects of temperature and growing conditions on the removal of metals in wastewater from tannery and metallurgy,
- Grant \$ 9000.

## **Teaching**

- 2019- **Yachay Tech University**
- Bioenvironmental Engineering
  - Biostatistics
  - Toxicology
  - Microbial Biotech
  - Cell Biology\*
- 2022-2023 **Zamorano University**
- Life Cycle Assessment
  - Environmental Management
- 2018-2019 **University of Guayaquil**
- Toxicology
  - Food Biochemistry
  - Chemical Analysis\*
- 2013-2019 **Salesian Polytechnic University**
- Toxicology
  - Environmental Biotechnology
  - Statistics
  - Analytical Chemistry
  - Ecotoxicology

## **Scholarly Articles**

1. Guzmán-Vallejos, M. S. Ramírez-Cando, L. J., Aguayo, L. G., Vera-Erazo, F. D., & Ballaz, S. J. (2023). MOLECULAR DOCKING SIMULATION AT THE HUMAN  $\alpha 7$ -nAChR AND EVOKED CALCIUM CHANGES IN SH-SY5Y CELLS BY IMIDACLOPRID AND ACETAMIPRID INSECTICIDES, under review.
2. Lorenzo Guerrini, Lenin Ramirez-Cando and Ottavia Parenti, (2022). Technological and environmental perspectives on the replacement of a synthetic additive with natural additives from forestry by-product in bread-making: A case study on silver fir needles extract, under review.
3. Guerrini. L. and Ramirez-Cando, 2023 L. J., Assessment of grape pressing environmental performance with device technical sheets, accepted manuscript, Acta Horticulturae.
4. Lenin J. Ramírez-Cando, Raul Davalos-Monteiro, Nayeli Gómez, Carlos Reinoso, and, Ronny Ordóñez 2023, CYTOTOXICITY OF NANOPARTICLES WITH BIOMEDICAL APPLICATIONS AN OVERVIEW, accepted manuscript, Acta Microscopica.
5. Marlene Puchaicela-Lozano, Luis Zhinin-Vera, Ana J. Andrade-Reyes, Dayanna M. Baque-Arteaga, Carolina Cadena-Morejón, Andrés Tirado-Espín, Lenin Ramirez-Cando, Diego Almeida-Galárraga, Jonathan Cruz-Varela, Fernando Villalba Meneses 2023, A Hybrid Approach Based on R-CNN ResNet-50 Pre-trained and Image Segmentation Algorithm to Detect Glaucoma Using Fundus Image, accepted manuscript, Journal of Advances in Information Technology.
6. Ramirez-Cando, L. J., Guzmán-Vallejos, M. S., Aguayo, L. G., Vera-Erazo, F. D., & Ballaz, S. J. (2023). Neurocytotoxicity of imidacloprid-and acetamiprid-based comercial insecticides over the differentiation of SH-SY5Y neuroblastoma cells. Heliyon, 9(5).

7. Moreno, H. J. S., y Ambiente, G. D. E. A., Samaniego, M. M., Dávalos-Monteiro, R., & Ramírez-Cando, L. J. (2023). RECOVERY OF LANTHANUM FROM THE DEPLETED CATALYST OF THE FLUIDIZED CATALYTIC CRACKING UNIT (FCC). *Ann. For. Res*, 66(1), 2717-2736.
8. Calvo Chica, L. E., Aguilar Mora, F., Ramírez Cando, L. J., Proaño Bolaños, C., & Carrera Gonzales, A. (2023). Cost and performance analysis of efficiency, efficacy, and effectiveness of viral RNA isolation with commercial kits and Heat Shock as an alternative method to detect SARS-CoV-2 by RT-PCR.
9. Sánchez, K., Ramírez-Cando, L., Machado, W., Villafuerte, A., & Ballaz, S. (2022). Mean corpuscular haemoglobin concentration (MCHC): a new biomarker for high-altitude pulmonary edema in the Ecuadorian Andes. *Scientific Reports*, 12(1), 1-7.
10. Ramírez-Cando Lenin, Angeloni Guilia, Guerrini Lorenzo, and Parenti Alessandro (2022) "Environmental impacts of Communitary Crops of Sweet Quinoa (*Chenopodium quinoa* Willd. Var. Tukahuan) at Andean Region in Ecuador, Accepted manuscript, *Journal of Sustainability Science and Management*.
11. Alvarez-Mendoza Cesar and Ramírez-Cando Lenin, (2022). Simplified analysis of the influence of climate change on the melting of Chimborazo Mountain glacier using partial least squares (PLS) and remote sensing. In *Remote Sensing for Agriculture, Ecosystems, and Hydrology XXIV*, International Society for Optics and Photonics.
12. Cáceres-Acosta, Edwin, Rogelio, Castro, María, Colinas, Maria, Juárez, Juan, Almaraz, Ramírez-Cando, Lenin, Aguirre-Flores, Alejandro and Montes, Odón. (2021). Edaphic source and tillage systems on yield and nutritional quality of green bean in Ecuadorian volcanic soils. *Bioscience Research*. 18. 3132-3142.
13. Pinzón Colmenares, I. and Ramírez Cando L., (2021). Eco-efficiency of the models of agricultural production of hard corn and its influence on climate change in Shushufindi Ecuador. *Revista La Granja*.
14. Paredes, M. M., Ramírez-Cando, L., & Luzardo, E. C. (2021). Evaluation of the antagonistic effect of a biofilm with extracts of samanea saman against colletotrichum gloeosporioides responsible for anthracnose in mango. *Revista Bionatura*, 6(1), 1466-1472. doi:10.21931/RB/2021.06.01.5
15. Matteo, R., D'Avino, L., Ramirez-Cando, L. J., Pagnotta, E., Angelini, L. G., Spugnoli, P., Tavarini, S., Ugolini, L., Foschi, L., & Lazzeri, L. (2020). Camelina (*Camelina sativa* L. Crantz) under low-input management systems in northern Italy: Yields, chemical characterization and environmental sustainability. *Italian Journal of Agronomy*, 15(2), 132-143. <https://doi.org/10.4081/ija.2020.1519>.
16. Kincses I, Melendez JR, Ramírez-Cando L et al. (2020). Soluble nitrogen forms in sand soil of Pallag:a quantitative report. *F1000Research* 2020, 9:781 (<https://doi.org/10.12688/f1000research.25260.1>)
17. Alvarez-Mendoza, C. I., Teodoro, A., Torres, N., Vivanco, V., & Ramirez-Cando, L. (2018). Comparison of satellite remote sensing data in the retrieve of PM10 air pollutant over Quito, Ecuador. In *Remote Sensing Technologies and Applications in Urban Environments III* (Vol. 10793, p. 107930I). International Society for Optics and Photonics.
18. Jumbo Salazar, C. A., Arévalo Delgado, C. D., & Ramírez-Cando, L. J. (2018). Carbon measurement of the natural forest arboreo stratum, Tinajillas-Limon Indanza. *LA GRANJA. Revista de Ciencias de la Vida*, 27(1), 51-63.
19. Alvarez-Mendoza, C. I., Teodoro, A., & Ramirez-Cando, L. (2019). Improving NDVI by removing cirrus clouds with optical remote sensing data from Landsat-8–A case study in Quito, Ecuador. *Remote Sensing Applications: Society and Environment*.
20. Alvarez-Mendoza, C. I., Teodoro, A., & Ramirez-Cando, L. (2019). Spatial estimation of surface ozone concentrations in Quito Ecuador with remote sensing data, air pollution measurements and meteorological variables. *Environmental monitoring and assessment*, 191(3), 1-15.

21. Ramírez-Cando, L. J., Chicaiza Ramírez, S. E., Ramos López, A. D., & Álvarez, C. I. (2019). Detection of betalactamic antibiotics, tetracyclines and sulfamides as emerging pollutants in the rivers San Pedro and Pita of the canton Rumiñahui. *LA GRANJA. Revista de Ciencias de la Vida*, 30(2), 88-102.
22. Mátyás, B., Bautista, G., Szarka, M., Serrano, V., Morales Arteaga, J., Loja, D., & Ramírez-Cando, L. J. (2018). Decision support algorithm for the selection of analytical methods in organic compounds detection for future extraterrestrial exploratory missions. *Electrophoresis*, 39(22), 2884-2889.
23. Ramirez-Cando, L. J., Alvarez-Mendoza, C. I., & Gutierrez-Salazar, P. (2018). Verhulst-Pearl growth model versus Malthusian growth model for in vitro evaluation of lead removal in wastewater by *Photobacterium* sp. *F1000Research*, 7(491), 491.
24. Ramirez-Cando, L. J., Mátyás, B., & Lozano-Haro, Z. J. (2018). Modelling risk using Bayes theorem of infection by antibiotic-resistant *Escherichia coli* in rural and urban populations of Ecuador. *F1000Research*, 7.
25. Singla, A., Bautista, G., Mátyás, B., Serrano, V., Morales Arteaga, J., Sánchez, R. G., ... & Ramírez-Cando, L. J. (2018). Altitudinal variations in H and Al ions interchange along with Fe content in Amazonian rainforest soil. *LA GRANJA. Revista de Ciencias de la Vida*, 28(2), 43-51.
26. Mátyás, B., Andrade, M. E. C., Chida, N. C. Y., Velasco, C. M. T., Morales, D. E. G., Montero, G. N. M.,... Ramírez-Cando, L. & Acevedo, R. X. L. (2018). Comparing organic versus conventional soil management on soil respiration. *F1000Research*, 7.
27. Coccini, T., Caloni, F., Ramirez Cando, L. J., & De Simone, U. (2017). Cytotoxicity and proliferative capacity impairment induced on human brain cell cultures after short-and long-term exposure to magnetite nanoparticles. *Journal of Applied Toxicology*, 37(3), 361-373.
28. Ramírez-Cando, L. J., De Simone, U., & Coccini, T. (2017). Toxicity evaluation of iron oxide (Fe<sub>3</sub>O<sub>4</sub>) nanoparticles on human neuroblastoma-derived SH-SY5Y cell line. *Journal of nanoscience and nanotechnology*, 17(1), 203-211.
29. Ramírez-Cando, L. J., Paolo, S., Roberto, M., Manuela, B., Tavarini, S., Foschi, L., & Luca, L. (2017). Environmental assessment of flax straw production for non-wood pulp mills. *Chemical Engineering Transactions*, 58, 787-792.
30. Ramirez-Cando, L., & Spugnoli, P. (2016). A review of life cycle assessment: agriproducts modeling. *La Granja*, 24(2), 5-15.

### **Other publications**

31. Falconí, J., Valdiviezo, C., & Ramírez, L. (2021). Predicción del tiempo de liofilización del arazá (*Eugenia Stipitata*) mediante modelos matematicos. *Ecuadorian Science Journal*, 5(4), 89-97.
32. Calderón, R., Jácome, J. D., Reyes, M., Rojas, D., & Ramírez Cando, L. J. (2017). BASIC CONSIDERATION ON THE MICROBIOLOGICAL SAFETY OF THE ORANGE JUICES EXPENDED IN THE SURROUNDINGS OF THE SALESIAN POLYTECHNIC UNIVERSITY-QUITO CAMPUS, CAMPUS "EL GIRÓN". *LA GRANJA. Revista de Ciencias de la Vida*, 25(1), 71-84.
33. Granja, M. F. G., & Ramírez-Cando, L. (2015). *Eichhornia crassipes*, su invasividad y potencial fitorremediador. *La Granja*, 22(2), 5-11.
34. Ramirez-Cando, L. J., Armijos, M., Crespo, M., Casignia, S. P. P., & Mendoza, C. I. Á. (2018). Modelamiento geostadístico de mediciones de concentración de material particulado (PM<sub>10</sub>) para la validación de un método simplificado. In *Anales Científicos* (Vol. 79, No. 1, pp. 81-91). Universidad Nacional Agraria La Molina.
35. Ramirez-Cando, L. J., Vilches, R., Acevedo, R. X. L., Colmenares, I. E. P., & Mena, E. L. S. (2017). Estimación de la Huella Hídrica y de Carbono en los cultivos comunitarios de Quínoa

- (*Chenopodium quinoa wild*) correspondientes a la zona central de los andes ecuatorianos. In *Anales Científicos* (Vol. 78, No. 2, pp. 173-182). Universidad Nacional Agraria La Molina.
36. Ramírez-Cando, L. J., Guerra, S., & Reinoso, G. (2017). Evaluación in vitro de la remoción de plomo en aguas residuales por *Photobacterium damsela*. *La Granja: Revista de Ciencias de la Vida*, 26(2), 64-71.

### **Honors and Awards**

- 2023 Invited Research (a month), University of Padova. TESAF department.
- 2023 Invited Speaker, 4<sup>th</sup> Nanosummer School Galapagos.
- 2022-2023 Creator and Organizer, Life Sciences Congress YT, Yachay Tech University
- 2021-2023 President of Ethics Committee for Research, YACHAY TECH UNIVERSITY-Ecuador.
- 2022 Member of the Evaluation Committee Doctoral Program University of Chapingo
- 2021 Invited Speaker, IEEE and BMS students chapter at Yachay Tech University
- 2015 Doctoral Scholarship, SENESCYT- Ecuador.
- 2014-15 Salvatore Maugeri Foundation, Pavia-Italia, Research Fellowship (lab of environmental toxicology).
- 2013 Master degree programme Scholarship, Salesian Politechnic University.
- 2007-09 Center for research and valuation of biodiversity. (CIVABI) Quito- Research Fellow, Lab of Chemical and Microbiological Analysis.

### **Supervision of Thesis**

- 2022-2026 **PhD.** Fabian Aguilar, Study and testing of genetic variability and compositional analysis in purple carrot germplasm for the development of cultivars of high functional value. University of Cuyo, Argentina.
- 2022 **Master.** Josselin Mercedes Macias Vera and Jonathan Ricardo Espinoza Bazurto, Optimization of the extraction method of natural coloring from the bracts of the inflorescences of the banana (*Musa Heavenly*) to be tested in various food. University of Guayaquil, Ecuador.
- 2021 **Master.** Jorge Medina, Design of an antioxidant film for refrigerated chicken fillet with Cocco Loba Uvífera extract and *Cordia Lutea* mucilage. University of Guayaquil, Ecuador.
- 2021 **Master.** Miguel Moreno, Evaluation of the antifungal effect against the fungus "*colletotrichum gloeosporioides*" that causes anthracnose in mango "*Mangifera indica*" by applying a biofilm with extracts of bark and fruit of *Samanea Saman*. University of Guayaquil, Ecuador.
- 2019 **Master.** Ingrid Pinzon, Influence of agricultural production models of hard corn on climate change in the Shushufindi canton, Simon Bolivar University, Latin America.
- 2015- **Bachelor**, several theses supervised

15 theses, Biology and Biomedicine, Yachay Tech University

1 thesis co-supervised, TESAF department, University of Padova

2 theses, Chemistry and Pharmacology, University of Guayaquil

18 theses, Biotechnology and Environmental Engineering, Salesian Polytechnic University

### **Presentations and courses**

Speaker, Workshop "MOLECULAR DYNAMICS", IEEE Ecuador, from 12 to 17 December 2020.

Assistant, Course "Teaching in virtual environments", University of the Armed Forces, from July to September 2020, duration of 40 hours

Assistant, Course "Introduction to Deep Learning", Carlos Slim Foundation, June 2020, duration 16 hours.

Assistant, Course "Analysis of SNPs using PCR in real time", Instituto Barbara McClinton Lima Peru, from September 25 to October 1, 2017

Speaker, Congress "CITIS" 2018, presentation "Modeling The Rate Of Plant Regeneration With The Calculation Of Environmental Indices From Satellite Images In The Metropolitan Park Of Quito."

Assistant, Course "UNIVERSITY DIDACTICS AND VIRTUAL ENVIRONMENTS FOR COOPERATIVE LEARNING", Quito-Ecuador, from September 5 to 7, 2016,

Speaker, Course "Analysis of Life Science data in R", Universidad Politécnica Salesiana Quito Ecuador, from July 18 to 30, 2016. Duration 40 hours.

Assistant, Seminar "Environment and health in the Territory of Pavia" Italy, October 18, 2014

Assistant, Course "Antidotes in depth", SITOX Italy, June 18-20, 2014, course on the use of antidotes, case studies and toxin chemistry

Assistant, Seminar "New substances of abuse", Italian Society of Toxicology, SITOX Pavia Italy, March 21, 2014, seminar on new substances that can be used as recreational drugs

Assistant, Course-Workshop "Metrology and calculation of uncertainty in calibrations", ASECAL November 2012, Focused on the calibration and verification of glass material and equipment and the calculation of the respective uncertainty. (16 hours)

Assistant, Course-Workshop "Validation and Calculation of Uncertainty in Chemical Methods", MULTIANALYTIC, focused on performing Ryr calculations, uncertainty and linearity in instrumental methods. November 2012 (20 Hours)

Speaker, Course "Basic Statistics for the Validation of Analytical Methods", LENIN RAMIREZ, dictated to laboratory technical staff, November 2012. (8 Hours)

Assistant, Course "Atomic absorption spectrophotometry", CESAL, February 2011 (20 hours), training in the determination of metals by atomic absorption and emission and generation of hydrides.

Speaker, MECHTECH 2016 Conference, Alghero, Italy, 29th May-1st June 2016 Mechanization and new technologies for the control and sustainability of agricultural and forestry systems

Assistant, International Congress: Scientific Research and Production Editorial Universitaria, October 28-30, 2015, Cuenca Ecuador.

III Biotechnology Conference, Salesian Polytechnic University, September 24-27, 2013.

### **Foreign Language Skills**

Spanish Native speaker

English C1 level

Italian C1 level

French A2 level

### **Computer Skills**

Mathematical Software: Matlab, Mathematica, SPSS, SAS, Stata, R

Office Software for Linux and Windows, LATEX

Specialized Software: SimaPro, OpenLCA, Image J, Autodoc.

### **Professional references**

Available upon request