

Paulo Izquierdo

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Appointments

Michigan State University - Department of Plant, Soil and Microbial Sciences <i>Graduate research assistant</i> Project: Genetic architecture of seed yield and canning quality traits in common bean (<i>Phaseolus vulgaris</i> L.). Advisor: Karen Cichy.	2017 to present
Michigan State University - Department of Plant, Soil and Microbial Sciences <i>Visiting Scholar</i> Development of molecular markers linked to anthracnose resistance in common bean.	2016
International Center for Tropical Agriculture <i>Research assistant</i> Fine-mapping of QTLs associated with minerals concentration in common bean and Genome-wide association mapping for agronomic traits in a Multi-parental population.	2013-2016
Colombian Sugarcane Research Center <i>Research assistant</i> Marker assisted selection and chloroplast transformation in sugarcane.	2011-2013
International Center for Tropical Agriculture/ Universidad Nacional de Colombia <i>Visiting researcher</i> Use of molecular marker assisted selection for resistance to anthracnose in common bean.	2010

Education

Ph.D. Plant Breeding Genetics and Biotechnology Michigan State University, East Lansing, US.	2017 to present
B.S. Biology Universidad del Tolima, Ibagué, Colombia.	2010

Honors, Awards, and Fellowships

Bayer Diversity Initiative Scholar	2020
Everett and Jane Everson graduate fellowship in plant breeding award.	2019
Norman and Jessie Thompson Endowed Scholarship.	2019
Graduate student language fellowship in undergraduate teaching and learning residential college in the arts and humanities, Michigan State University.	2019
Council of graduate students - Conference Award, Michigan State University.	2019
The Crop and Soil Science Graduate award, Michigan State University.	2018
Jason and Dana Lilly Plant Breeding, Genetics & Biotechnology fellowship.	2018
Elmer C. Rossman Endowed Scholarship.	2018
Everett and Jane Everson graduate fellowship in plant breeding award.	2018
Resilient and Nutritious Dry Beans for Africa - fellowship, USDA-FAS.	2018
Doctoral Fellowship Program. COLCIENCIAS, Colombia's Administrative Department of Science, Technology, and Innovation.	2017

Publications

- Diaz S, Ariza-Suarez D, **Izquierdo P**, Lobaton JD, de la Hoz JF, Acevedo F, Duitama J, Guerrero AF, Cajiao C, Mayor V, et al. Genetic mapping for agronomic traits in a MAGIC population of common bean (*Phaseolus vulgaris* L.) under drought conditions. *BMC Genomics* 21: 1–20. **2020**
- Berry, M; **Izquierdo, P**; Jeffery, H; Shaw, S; Nchimbi-Msolla, S and Cichy, K. QTL analysis of cooking time, seed attributes, and protein concentration in a recombinant inbred dry bean (*Phaseolus vulgaris* L.) population grown in two agro-ecological zones in Tanzania. *Theor. Appl. Genet.* **2020**.
- Izquierdo, P**; Astudillo, C; Blair, M; Iqbal, A; Raatz, B and Cichy, K. Meta-QTL analysis of seed iron and zinc concentration in common bean (*Phaseolus vulgaris* L.) *Theor. Appl. Genet.* 018-3104-8. **2018**.
- Izquierdo, P**; Shaw, S; Berry, M and Cichy K. A saturated genetic linkage map of common bean (*Phaseolus vulgaris* L.) developed using Genotyping by Sequencing (GBS). Annual report of the Bean improvement cooperative. Volume 60. **2017**.
- Perea, C; De la Hoz, J; Cruz, J; Lobaton, J; **Izquierdo, P**; Quintero, J; Raatz, B and Duitama, J. Bioinformatic analysis of genotype by sequencing (GBS) data with NGSEP. *BMC Genomics*, 17 (Suppl 5):498. **2016**.
- Blair, M; **Izquierdo, P**; Astudillo, C and Grusak, M. A. Legume Biofortification Quandary: Variability and genetic control of seed coat micronutrient accumulation in common beans. *Front. Plant Sci.* 4:275. **2013**.
- Delgado, H; Pinzón, E; Blair, M and **Izquierdo, P**. Evaluation of bean (*Phaseolus vulgaris* L.) lines result of an advanced backcross between a wild accession and Radical Cerinza. *U.D.C.A Act. & Div. Cient.* **2013**.
- Izquierdo, P**; A. Gutiérrez; J.I. Victoria; M.C. Ángel and J. López: Molecular markers associated with resistance to Sugarcane yellow leaf virus. *Proceedings International Society Sugar Cane Technologists*, Vol. 28: 10 p., **2013**.
- Blair, M and **Izquierdo, P**. Use of the advanced backcross-QTL method to transfer seed mineral accumulation nutrition traits from wild to Andean cultivated common beans. *Theor. Appl. Genet.* (5):1015-31. **2012**.
- Blair, M; **Izquierdo, P**; Astudillo, C; Monserrate, F; Cortés, M; Avila, P; Felde Z and Pfeiffer, W. Utilization of near infrared spectrophotometry (NIRS) analysis for evaluation of mineral content in Andean bean samples. Annual report of the Bean improvement cooperative. Volume 54. **2011**.

Oral and poster presentations

- Izquierdo, P**; Lopez, M; Kelly, J; Cichy, K. Assessing Genomic Selection Prediction Accuracy for Yield and End-Use Quality Traits in Black Beans. Bean improvement cooperative. **Poster. 2019**.
- Izquierdo, P**; Katuuramu, D; Cichy, K. Genomic selection for nutritional traits and cooking time in common bean) using Genotyping by Sequencing. *Plant & Animal Genome*. **Poster. 2019**.
- Izquierdo, P**; Astudillo, C; Iqbal, A; Blair, M; Raatz, B and Cichy, K. Meta-QTL Analysis in Common Bean to Uncover the Genetic Architecture of Iron and Zinc Concentration in Seed. *Plant & Animal Genome*. **Poster. 2018**.
- Izquierdo, P**; Shaw, S; Berry, M and Cichy K. A saturated genetic linkage map of common bean developed using Genotyping by Sequencing (GBS). Bean improvement cooperative. **Poster. 2017**.
- Izquierdo, P**; Lobaton, J; Mayor, V; Grajales, M; Cajiao, C; Duitama, J and Raatz, B. Genome-wide

association mapping for yield and other agronomic traits in a Multi-parent advanced generation inter-cross population of Mesoamerican common bean (*Phaseolus vulgaris* L.). IX Latin American and Caribbean Agricultural and Forestry Biotechnology Meeting, Peru. **Oral presentation. 2016.**

Izquierdo, P; Gutiérrez, A; Victoria, J; C; Ángel, López, J; Avellaneda, C. Molecular markers associated with resistance to the sugarcane yellow leaf virus. XXVIII International Society of Sugarcane Technologists (ISSCT). Brazil. **Oral presentation. 2013.**

Izquierdo, P; Gutiérrez, A; Victoria, J; Ángel, J; López, J; Avellaneda, C. Molecular markers associated with resistance to the sugarcane yellow leaf virus. IX Association for Sugarcane Technology in Latin America and the Caribbean (Atalac-Tecnicaña). Colombia. **Oral presentation. 2012.**

Izquierdo, P; Gutiérrez, A; Avellaneda, C; Victoria, J; Ángel, López, J. Molecular markers associated with resistance to the sugarcane yellow leaf virus. Colombian and Latin American Phytopathological Association. Colombia. **Oral presentation. 2011.**

Pedagogical experience & training

Spanish Language Assistant, Michigan State University.	2019
Teaching assistant, Introduction to plant genetics, Michigan State University.	2018
As a research assistant, I mentored an USDA Borlaug fellow in lab-based research. Michigan State University. Trainee: Winnyfred Amongi.	2018
As a research assistant, I mentored 2 undergraduates in greenhouse and lab-based research. International Center for Tropical Agriculture. Trainees: Wilson Santiago, Laura Paz.	2015-2016

Leadership experience

Co-Founder, Community Platform for Agricultural Sciences (COMPASS). Website: https://sites.google.com/view/compasscolombia	2020
Co-Organizer, Ciencia en línea: impulsando el uso de plataformas para la divulgación, colaboración e inspiración científica. Symposium, SOCOLEN.	2020
Co-Organizer, Phenomic Application in Plant Breeding, Corteva-PBGB Symposium	2019

References

Dr. Karen Cichy	Associate adjunct professor Department of Plant, Soil and Microbial Sciences Michigan State University cichykar@msu.edu
Dr. James Kelly	University Distinguished Professor Department of Plant, Soil and Microbial Sciences Michigan State University kellyj@msu.edu
Dr. Bodo Raatz	Common bean breeder CIAT - International Center for Tropical Agriculture b.raatz@cgiar.org