

# Sergio Puerto

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Cornell University, Ithaca, NY

**Fields** Primary: Experimental and Development Economics  
Secondary: Innovation, sustainability, and labor

**Education** **Cornell University** Ithaca, NY  
PhD in Applied Economics 2018 – 2024 (Expected)

*Dissertation Committee:*

Miguel Gómez – Cornell University, [mig7@cornell.edu](mailto:mig7@cornell.edu)

Christopher Barrett – Cornell University, [cbb2@cornell.edu](mailto:cbb2@cornell.edu)

Brian Dillon – Cornell University, [bmd28@cornell.edu](mailto:bmd28@cornell.edu)

**Universidad de los Andes** Bogotá, Colombia

BA in Economics 2008 – 2012

BA in Management 2009 – 2013

**Publications** **Trait prioritization in crop breeding programs: a scoping review on tools and methods**

with Martina Occelli *et al.*

*Nature Plants*, 2024

**The role of collective action in the cacao sector in enhancing sustainability, market upgrading and agro-biodiversity conservation**

with Ximena Rueda and Romaike Middendorp

*Environmental Research Letters*, 2023

**Regrouping to reduce overfishing: Evidence from a Series of Experiments in Mexico**

with Andreas Leibbrandt and Maria Alejandra Vélez

*Marine Resource Economics*, 2021

**Blood  $\beta$ -hydroxybutyrate concentrations and early lactation management strategies on pasture-based dairy farms in Colombia**

with Francisco Leal-Yepes *et al.*

*Preventive Veterinary Medicine*, 2020

**Testing the Alchian–Allen theorem for three goods using the pseudo-Poisson model**

with Dragan Miljkovic, Miguel I. Gómez, and Anupa Sharma  
*Agricultural Economics*, 2019

**Leadership, entrepreneurship, and collective action: A case study from the Colombian Pacific Region**

with Ivan Lobo and Maria Alejandra Vélez  
*International Journal of the Commons*, 2016

**Other  
publications**

**How can economic incentives designed for environmental conservation support a transition to sustainable and equitable agriculture?**

with Lina Moros, Dayron Monroy and Ximena Rueda

Report: Commission on Sustainable Agriculture Intensification, 2022

**U.S. Agricultural Exports to Colombia: Rising Sales in Response to Trade Liberalization and Changing Consumer Trends**

with Miguel Gomez, Steven Zahniser and Jie Li

Report: U.S. Department of Agriculture, Economic Research Service, 2021

**El rol del Estado en la gobernanza social y ambiental privada**

with Maria Alejandra Vélez and Ximena Rueda

Book Chapter in *Gestión del Desarrollo Sostenible*, Edited by Manuel Rodríguez Becerra and Maria Alejandra Vélez, Ediciones Uniandes, 2018

**Working  
papers**

**Innovation and Technological Mismatch: Experimental Evidence from Improved Crop Seeds (*Job Market Paper*)**

Biases in research and development create a mismatch between the attributes of new agricultural technology and the preferences of farmers. In this paper, I estimate the impact of this mismatch on farmers' adoption of new drought-resistant seeds. Using a randomized controlled trial in Costa Rica, I recreated counterfactual scenarios for innovators' seed development decisions by offering some farmers seed matching their preferences and others a seed variety chosen by crop scientists as a blanket recommendation. Results show that mismatch has a significant impact on adoption and productivity, with 41% lower uptake among farmers who were offered the recommended new seed. This gap was larger for farms located farther from the research lab where the new seeds were developed, and persisted even in areas with drought exposure. Moreover, the new seed varieties were 31% more productive among farmers who adopted their preferred seed. To explain these findings, I propose a model where research constraints limit innovators' ability to account for farmer heterogeneity. Matching new seeds to farmer preferences improves productivity by enabling better adaptation to specific farm-level conditions, which are usually private information unknown to innovators. These findings highlight that agricultural innovation is often shaped by innovators' priorities rather than demand-side signals, especially in developing countries.

## **Risk-reducing incentives and preventive technologies in pasture-based dairy farming**

*Revise and Resubmit to the American Journal of Agricultural Economics.*

*With Miguel I. Gómez, Francisco Leal-Yepes, Sabine Mann, and Jessica McArt.*

Many of the world's low-income farmers are vulnerable to uncertain productive conditions but have limited options to manage risk. This paper studies the relationship between risk aversion and ketosis, a metabolic disorder that negatively affects dairy farming. We identified farmers' risk preferences and their willingness to pay for information about cows' health status (WTP) using a lab-in-the-field experiment in Colombia. We also collected blood samples from dairy cows to test for the prevalence of the disease. Results show a lower likelihood of ketosis in cows managed by risk-averse farmers, which is consistent with a self-protection strategy under uncertainty. Further, experimental data show a positive relationship between risk aversion and WTP, which is comparable to investments in animal health diagnostic equipment. Moreover, we find no significant differences in management across farmers' risk profiles, with the exception of some heterogeneous effects of concentrate feed and preventative care, consistent with a self-protection strategy to mitigate productivity risk.

## **Labor rationing under non-separation: Examining the impacts of Ethiopia's travel ban on rural workers**

I study the impact of labor supply shocks on rural markets. Using a natural experiment in Ethiopia, I show that a travel ban on migrant workers pushed rural labor markets to reallocate on- and off-farm labor.

## **Measuring the Heterogeneous Effects of Input Subsidies on Household Outcomes: Evidence from Malawi**

*With Christone Nyondo, Maggie Munthali, Zephania Nyirenda, and Brian Dillon.*

We studied the effect of a nation-wide input subsidy program on the productivity and income of rural households. Our findings suggest that while older farmers are more likely to receive inputs, younger farmers are relatively more productive as a consequence of the program.

<b>Grants and awards</b>	<b>Cornell University</b> , GRA Fellowship	2023
	<b>Marine Resource Economics</b> , Outstanding Article Award	2022
	<b>ILCI</b> , Research Project Charter Grant (\$192,328)	2022
	<b>NSF</b> , Doctoral Dissertation Improvement Grant (\$32,075)	2021
<b>Research experience</b>	<b>Researcher, Feed the Future - Innovation Lab for Crop Improvement</b> Priority Setting Area	2019 – Present
	<b>Graduate Research Assistant, Cornell University</b> Mentor: Miguel I. Gómez	2017 – 2019

	<b>Consultant, Environmental Defense Fund</b> Oceans Program	2016 – 2017
	<b>Research Assistant, Universidad de los Andes</b> Mentors: Maria Alejandra Velez and Ximena Rueda	2014 – 2016
<b>Teaching experience</b>	<b>Instructor of Record, Cornell University</b> ECON 3550: Economics of Developing Countries	Spring 2023
	<b>Teaching assistant, Cornell University</b> AEM 4111: Introduction to Econometrics	Fall 2022
	<b>Teaching assistant, Universidad de los Andes</b> Environmental and Natural Resources Economics	Spring, Fall 2016
<b>Presentations</b>	<i>Upcoming:</i> 2024 PacDev (Stanford University), MWIEDC 2024 (Chicago University) 2023 AAEA Annual meeting, Washington, DC 2022 ILCI Annual Meeting, Dakar, Senegal	
<b>Skills</b>	<b>Programming</b> Proficient in: STATA, R, Latex Familiar with: Python, Julia, HTML/CSS, Matlab  <b>Languages</b> Spanish (Native), English (fluent)	
<b>Service and outreach</b>	<b>Referee:</b> Food Policy <b>Mentoring:</b> (i) Proposals reviewer and co-mentor to a MwAPATA Team from Malawi; (i) Capacity building and research advise to INTA and the National Breeding Program in Costa Rica	