

# JOHN ALEXANDER GÓMEZ MAHECHA

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Post-doctoral Researcher

RFF-CMCC European Institute on Economics and the Environment  
Euro-Mediterranean Center on Climate Change - CMCC

## CONTACT INFORMATION

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## RESEARCH AND TEACHING INTERESTS

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Environmental and Natural Resources Economics, Development Economics, Public Economics, Applied Econometrics.

## EDUCATION

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| 2024 | Ph.D. Economics<br>GEORGIA STATE UNIVERSITY, Atlanta GA, USA.<br><i>Dissertation: Essays on Environmental Economics</i><br><i>Advisor: Dr. Spencer Banzhaf</i>   |
| 2016 | M.Sc. Economics<br>UNIVERSIDAD DE LOS ANDES, Bogotá, Colombia.<br><i>Thesis: Estimación de la Demanda por Calidad de Aire en Bogotá – Una Aproximación por el Modelo de Precios Hedónicos para los Precios de la Vivienda. [Estimating the Demand for Air Quality in Bogota – An Approximation by the Hedonic Price Model for Housing Prices.]</i><br><i>Advisor: Fernando Carriazo.</i> |
| 2013 | B.A. Economics<br>UNIVERSIDAD DE LOS ANDES, Bogotá, Colombia.  |

## PUBLICATIONS

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### Journals

Austin, W., Carattini, S., Gomez-Mahecha, J., & Pesko, M. F. (2023). *The effects of contemporaneous air pollution on COVID-19 morbidity and mortality. Journal of Environmental Economics and Management*, 119, 102815. Available online at <https://bit.ly/3pVuCsd>

Maldonado J. H., Gomez-Mahecha J., León-Jurado V., Villa L & Rodríguez D. A. (2022). *Implementation of graduation programs for alleviating rural poverty: an impact analysis in Paraguay. Journal of Development Effectiveness*, DOI: 10.1080/19439342.2022.2153379. Available online at <https://bit.ly/3JQgsd1>

Carriazo, F., & Gomez-Mahecha, J. (2018). *The demand for air quality: Evidence from the housing market in Bogotá, Colombia. Environment and Development Economics*, 23(2), 121-138. DOI:10.1017/S1355770X18000050. Available online at <http://bit.ly/3Xdu7Ve>

### Policy Briefs

Maldonado J. H., Gomez-Mahecha J. & Rosada T. (2015). *Rural development programmes and conditional cash transfers: examining synergistic effects in Latin America*. With Jorge Maldonado and Tomás Rosada (IFAD). *Policy in Focus: Social Protection, Entrepreneurship and Labour Market Activation*, 12(2), 30-32. ISSN: 2318-8995. Available online at <http://bit.ly/1KqE7O6>.

### Books

Maldonado J. H., Moreno-Sánchez R., Gómez-Mahecha J. & León V. (comp.) (2016). *Protección, Producción, Promoción. Explorando sinergias entre protección social y fomento productivo rural en América Latina*. Ediciones Uniandes, Bogotá, Colombia.

## Book Chapters

Maldonado J. H., Gomez-Mahecha J. & León V. (2016). *Sinergias entre políticas de protección social y proyectos de desarrollo rural: aproximación desde la literatura existente y la teoría*. In Maldonado J. H., Moreno-Sánchez R., Gomez-Mahecha & León V. (comp.) (2016). *Protección, Producción, Promoción. Explorando sinergias entre protección social y fomento productivo rural en América Latina*. Ediciones Uniandes, Bogota, Colombia.

## WORKING PAPERS AND WORK IN PROGRESS

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### Working papers

*Colombian Carbon Tax: Evidence of Carbon Pricing in Developing Countries.*

Colombia implemented its carbon tax in 2017, becoming the 3rd country in Latin America and the 23rd in the world to have one. It is an important example of how middle and low-income countries have started implementing this market-based strategy. This paper seeks to understand the effects of the Colombian tax on the emissions of CO<sub>2</sub>. I use several counterfactual estimators to identify the causal impact of the carbon tax on Colombia's CO<sub>2</sub> emissions per capita. I find conflicting evidence. The preferred estimates suggest that the tax has reduced emissions per capita by 6 to 8 percent of the pre-tax emissions. However, the results are not statistically significant. An alternative identification strategy relying on regional exemptions does not find statistically significant effects of the tax rate on the consumption of selected fuels, suggesting that the tax rate might be too low. This paper further discusses, tax and quasi-experimental design features that might explain the lack of significant results.

*The Cost of Excluding the Coal from a Carbon Tax: The Colombian Case.*

Colombia was one of the developing countries implementing a carbon tax in the wave of carbon pricing programs in the early and mid-2010s, imposing a tax of US\$ 5/tCO<sub>2</sub> by 2017. Previous research has explored the consequences of the tax on the country's emissions, finding no statistically significant effects. Among the possible reasons that have been considered, there is an unusual exemption on coal from the tax base. This paper seeks to explore and quantify the effects of this exemption on the Colombian economy and environment, while posing a bigger question: how do we measure the costs of exemptions in a carbon tax? By solving a CGE model that closely follows the Colombian design, we found that the coal exemption is responsible for preventing the reduction of the equivalent of 1,579 thousand metric tons of CO<sub>2</sub>. The exemption also makes the cost per reduced emissions 38% higher and is equivalent to a subsidy of 0.38% on the price of coal. Furthermore, our sensitivity tests on key exogenous parameters suggest our estimates are conservative.

### Work in Progress

The “too near” effect of Urban greenway trails: The Case of Atlanta’s BeltLine.

## RESEARCH EXPERIENCE

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|-------------|---|
| 2022 – 2023 | GEORGIA STATE UNIVERSITY, Andrew Young School of Public Policy – Graduate Research Assistant at the Center for State and Local Finance (CSFL)<br><i>Dr. Peter Bluestone</i>   |
| 2018 - 2022 | GEORGIA STATE UNIVERSITY, Andrew Young School of Public Policy – Economics Graduate Research and Teaching Assistant<br><i>Dr. Lorenzo Almada and Dr. Spencer Banzhaf</i>  |
| 2014 - 2018 | CENTRO DE ESTUDIOS SOBRE DESARROLLO ECONÓMICO (CEDE), Universidad de los Andes<br>Young Researcher and Research Assistant<br><i>Dr. Jorge Higinio Maldonado:</i> <ul style="list-style-type: none"><li>- <i>Project Platform for Evaluation and Learning of the Graduation Program in Latin America. Funded by IDRC, Ford Foundation, Fundación Capital and UNIANDES.</i></li><li>- <i>Project Conditional Cash Transfer and Rural Development in Latin America. Funded by IFAD and UNIANDES.</i></li></ul> |

- *Project Improving the Articulation between Social Protection and Rural Development Interventions in Developing Countries: Lessons from Latin America and Africa. Funded by IFAD and UNIANDES.*

Dr. Fernando Carriazo

*Project The demand for air quality: A case study in Bogotá- Colombia. Funded by LACEEP and CATIE.*

2013 CENTRO INTERNACIONAL DE AGRICULTURA TROPICAL (CIAT)  
Junior Consultant

#### TEACHING EXPERIENCE

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Spring 2022 Principles of macroeconomics (undergraduate) – Instructor  
GEORGIA STATE UNIVERSITY, Atlanta, U.S.A.

Summer 2020 Introduction to econometrics (undergraduate) – Summer’s instructor (online)  
UNIVERSIDAD DE LOS ANDES, Bogota, Colombia.

2014 - 2018 Introduction to Econometrics (undergraduate) – Teaching Assistant  
UNIVERSIDAD DE LOS ANDES, Bogota, Colombia.

2016 Consumer and Firm Theory (undergraduate) – Teaching Assistant  
UNIVERSIDAD DE LOS ANDES, Bogota, Colombia.

#### CONFERENCES AND SEMINARS

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*AQ ATL23 Symposium: “Urban Air Quality in The Age of Climate Change”.* Presenting *The effects of contemporaneous air pollution on COVID-19 morbidity and mortality.* Interdisciplinary Health and Environment Leadership Development Program – IHELeAD.  
Georgia Institute of Technology, Atlanta – GA, USA. 2023

*Camp Resources XXVIII*, held in Asheville NC, USA. Presenting *Colombian Carbon Tax: Can we Learn Something new from Carbon Taxes in Developing Countries?* Funded by NC State University, RFF, IEC, GATECH, JEEM.  
Cambria Downtown Asheville Hotel, Asheville – NC, USA. 2022.

*Latin American Studies Association – LASA 2018*, held in Barcelona, Spain. Presenting *Evidencia de los efectos del programa Sembrando Oportunidades Familia por Familia – La adaptación del esquema graduación en Paraguay*, with Jorge H. Maldonado and Viviana León. Funded by LASA and UNIANDES.  
Barcelona, Spain. 2018

*Global Science Conference 2015 – Climate Smart Agriculture*, held in Montpellier, France. Participating in the poster session with the project *A two-dimension evaluation of CSA practices. Evaluating practices by indicators and reduce non-observable variable bias*, with Jorge Maldonado, Caitlin Corner Dolloff (CIAT) and Miguel Lizarazo (CIAT). Funded by CGIAR.  
CGIAR, Montpellier, France. 2015.

*International Conference in Economics, Management and Accounting – ICEMA*, held in Bucaramanga, Colombia. Panelist with the document *Propuestas para políticas de responsabilidad social de empresas petroleras en la altillanura colombiana.*  
Universidad Autónoma de Bucaramanga, Bucaramanga, Colombia. 2012.

#### GRANTS

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Grant for the project *The demand for air quality: A case study in Bogotá- Colombia*, with Fernando Carriazo. Centro Agronómico Trópico de Investigación y Enseñanza (CATIE), Costa Rica. 2014

## **SCHOLARSHIPS/FELLOWSHIPS**

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E. D. (Jack) Dunn Fellowship, annual graduate fellowship for students with academic and research interests in public finance, financial regulatory policy impact on national, regional, and local economics, or public management. Andrew Young School of Policy Studies. Economics Department. April 2023.

The Jack Blicksilver Scholarship, awarded annually to a student who excels in economics. Andrew Young School of Policy Studies. Economics Department. April 2022.

Fulbright - ICETEX scholarship *Pasaporte a la Ciencia*. Sponsored by the United States Department of State and Colombian government. Since September 2017.

Scholarship for the course *VIII Environmental and Resource Economics Training Course - Valuation and Household Surveys*. LACEEP program hosted by CATIE. Held in Turrialba, Costa Rica, for three weeks during 2014 summer.

## **REFEREEING EXPERIENCE**

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Environmental and Resource Economics, Energy & Environment

## **SKILLS**

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QUANTITATIVE AND PROGRAMMING  
GEOGRAPHIC INFORMATION SYSTEMS  
LANGUAGES

Stata, Julia, R and GAMS.  
ArcGIS, QGIS  
Spanish (native), English (fluent) and Portuguese (fluent).

References upon request.

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