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PhD Candidate and Graduate Research Assistant

Georgia State University – Andrew Young School of Public Policy

Economics Department

CONTACT INFORMATION

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RESEARCH AND TEACHING INTERESTS

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

EDUCATION

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| 2023
(Tentative) | Ph.D. Economics
GEORGIA STATE UNIVERSITY, Atlanta GA, USA.
<i>Advisor: Dr. Spencer Banzhaf</i> |
| 2016 | M.Sc. Economics
UNIVERSIDAD DE LOS ANDES, Bogotá, Colombia.
<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.</i>
<i>Advisor: Fernando Carriazo.</i> |
| 2013 | B.A. Economics
UNIVERSIDAD DE LOS ANDES, Bogotá, Colombia. |

RESEARCH EXPERIENCE

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| 2018 - ... | GEORGIA STATE UNIVERSITY, Andrew Young School of Public Policy – Economics
Graduate Research and Teaching Assistant
<i>Dr. Lorenzo Almada and Dr. Spencer Banzhaf</i> |
| 2014 - 2018 | CENTRO DE ESTUDIOS SOBRE DESARROLLO ECONÓMICO (CEDE), Universidad de los Andes
Young Researcher and Research Assistant
<i>Dr. Jorge Higinio Maldonado:</i>
<i>Project Platform for Evaluation and Learning of the Graduation Program in Latin America.</i>
<i>Funded by IDRC, Ford Foundation, Fundación Capital and UNIANDES.</i>
<i>Project Conditional Cash Transfer and Rural Development in Latin America. Funded by IFAD and UNIANDES.</i>
<i>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.</i>
<i>Dr. Fernando Carriazo</i>
<i>Project The demand for air quality: A case study in Bogotá- Colombia. Funded by LACEEP and CATIE.</i> |
| 2013 | CENTRO INTERNACIONAL DE AGRICULTURA TROPICAL (CIAT)
Junior Consultant |

PUBLICATIONS, WORKING PAPERS AND WORK IN PROGRESS

Working papers

Colombian Carbon Tax: Can we Learn Something new from Carbon Taxes in Developing Countries? April, 2021.

Recently, Colombia implemented its first Carbon tax. In 2017, it became the 3rd country in Latin America to implement it and the 23rd in the world. However, its implementation is just one example of how middle and low-income countries have started implementing this kind of market-based strategy. This paper seeks to understand the effects of the Colombian tax on the consumption of various fuels and emissions of CO₂. I use a synthetic control design to identify the causal impact of the carbon tax on Colombian's CO₂ emissions per capita. I find evidence that the tax reform reduces Colombia's emission of CO₂ per capita by almost 13% per year within three years after its implementation.

COVID-19 mortality and contemporaneous air pollution. With W. Austin, S. Carattini and M. Pesko. Revisions Requested at *Journal of Environmental Economics and Management*. October 2020. Available online at <https://bit.ly/2XYafgg>

We examine the relationship between contemporaneous fine particulate matter exposure and COVID-19 morbidity and mortality using an instrumental variable approach based on wind direction. Harnessing daily changes in county-level wind direction, we show that arguably exogenous fluctuations in local air quality impact the rate of confirmed cases and deaths from COVID-19. In our preferred high dimensional fixed effects specification with state-level policy and social distancing controls, we find that a one $\mu\text{g}/\text{m}^3$ increase in PM 2.5 increases the number of confirmed cases by roughly 2% from the mean case rate in a county. These effects tend to increase in magnitude over longer time horizons, being twice as large over a 3-day period. Meanwhile, a one $\mu\text{g}/\text{m}^3$ increase in PM 2.5 increases the same-day death rate by 3% from the mean. Our estimates are robust to a host of sensitivity tests. These results suggest that air pollution plays an important role in mediating the severity of respiratory syndromes such as COVID-19, for which progressive respiratory failure is the primary cause of death, and that policy levers to improve air quality may lead to improvements in COVID-19 outcomes.

The Graduation approach for the reduction of extreme poverty: impact evaluation of Sembrando Oportunidades Familia por Familia in Paraguay. With J. H. Maldonado, V. León-Jurado, D. Rodríguez, and L. Villa. (2019). Documento CEDE, (2019-19). Revision requested at *Journal of Development Effectiveness*. Available only at <https://bit.ly/32CAgEp>

Rural poverty, a widespread problem for the governments, led to the implementation of the "Sembrando Oportunidades Familia por Familia" program (Seeding Opportunities Family by Family), an initiative based on the graduation approach. This is one of the few cases in which governments are running this type of program. In this study, we evaluate the intervention outcomes to understand the effectiveness of this approach in reducing poverty. The evaluation shows positive changes in income, productive capacity, savings behavior, and perception of well-being but exhibits discrete consumption effects. These results might be associated with the need for governments to intervene rural communities with other programs. The results are helpful to adjust the design and prepare the scaling of programs that can help effectively overcome extreme poverty in this and other developing countries.

Publications

The Demand for Air Quality: A Case Study in Bogotá, Colombia. With Fernando Carriazo. *Environment and Development Economics*, 23 (2), 121-138.

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, 2015. Available online at <http://bit.ly/1KqE7O6>.

Books

Maldonado, Moreno-Sánchez, Gómez and León (comp.) (2016). *Protección, Producción, Promoción. Explorando sinergias entre protección social y fomento productivo rural en América Latina*. Ediciones Uniandes, Bogotá, Colombia. Available online at <http://bit.ly/2jCb5ug>.

Book Chapters

Sinergias entre políticas de protección social y proyectos de desarrollo rural: aproximación desde la literatura existente y la teoría, with Jorge H. Maldonado and Viviana León. In Maldonado, Moreno-Sánchez, Gómez and León (comp.) (2016). *Protección, Producción, Promoción. Explorando sinergias entre protección social y fomento productivo rural en América Latina*. Ediciones Uniandes, Bogotá, Colombia.

Work in Progress

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

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

TEACHING EXPERIENCE

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, Bogotá, Colombia.
2014 - 2018	Introduction to Econometrics (undergraduate) – weekly computer sessions UNIVERSIDAD DE LOS ANDES, Bogotá, Colombia.
2016	Consumer and Firm Theory (undergraduate) – weekly problem solving sessions UNIVERSIDAD DE LOS ANDES, Bogotá, Colombia.

CONFERENCES AND SEMINARS

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.

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.

GRANT

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

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

Environmental and Resource Economics, Energy & Environment

SKILLS

QUANTITATIVE AND PROGRAMMING	Stata, Julia, and R.
GEOGRAPHIC INFORMATION SYSTEMS	ArcGIS, QGIS
LANGUAGES	Spanish (native), English (fluent) and Portuguese (fluent).

Version: May 2022