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## EDUCATION

### **Ph.D., Agricultural and Applied Economics**

University of Illinois at Urbana-Champaign, 2020 (expected)

Dissertation Title: Three Essays on Energy Efficiency Economics: market failures, behavioral nudges, and suboptimal investments

### **B.S., Economics**

University of Sao Paulo, Ribeirao Preto, SP, Brazil, 2013

## FIELDS OF CONCENTRATION

### **Primary**

Environmental Economics  
Applied Econometrics

### **Secondary**

Natural Resource Economics  
Household Economics

## PUBLICATIONS

**Souza, M. N. M.** (2018) “[Why are rented dwellings less energy-efficient? Evidence from a representative sample of the U.S. housing stock.](#)” *Energy Policy* 118, pp. 149-159.

## WORKING PAPERS

**Erica Myers and Mateus Souza** (2018) “[Social Comparison Nudges Without Monetary Incentives: Evidence from Home Energy Reports.](#)” *E2e Working Paper* 041. (*revise and resubmit*)

Abstract: We explore the mechanisms driving the effectiveness of a widely-used behavioral intervention that reduces energy consumption by repeatedly mailing social comparison-based home energy reports (HERs) to households. With a randomized controlled trial, we introduce HERs in a college residence, where tenants do not pay energy bills. Our results indicate that HERs induced almost no behavioral changes for heating demand, with precise estimates that allow us to rule out thermostat changes greater than 0.36°F. This suggests that behavioral channels, such as competitiveness, social norms, or moral suasion, may not motivate conservation in the absence of direct monetary incentives.

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## RESEARCH IN PROGRESS

“Semiparametric Methods for Heterogeneous Treatment Effects in Event Studies: applications to a large energy efficiency program in the US.” (*job market paper*)

Abstract: I propose a novel approach to recover treatment effect heterogeneity in event study settings. Specifically, I focus on contexts with staggered adoption: units may vary in treatment dates, and treatment is irreversible. I use the potential outcomes framework to define parameters of interest to be estimated. The first step of the method involves predicting the full distribution of counterfactual (potential) outcomes, which in turn allows estimation of the full distribution of treatment effects. Those can then be aggregated for different portions of the sample. I propose cross-validated errors as a measure reliability of the estimates. Simulations demonstrate that this method is robust to: dynamic (time-varying) treatment effects, imbalances across treated and control groups in the sample. I conclude by applying the method to recover treatment effect heterogeneity (in reduced energy consumption) for homes served by the Weatherization Assistance Program in Illinois. This paper contributes to a growing literature in heterogeneous treatment effect estimation in event studies. Further, I provide a feasible application of novel machine learning techniques to recover causal effects.

“Decomposing the Wedge: Mechanisms driving the gap between projected and realized returns from energy efficiency investments.” With Erica Myers, Peter Christensen, and Paul Francisco.

“Air pollution and cardiovascular health: evidence from agricultural fires in India.” With Hemant K. Pullabhotla.

## TEACHING EXPERIENCE

Teaching Assistant for ACE210 (Environmental Economics) at UIUC. Fall 2018, Spring 2019, and Fall 2019. Undergraduate course for students majoring in economics, agricultural economics, urban planning, and others. My primary responsibilities were to lead weekly discussion/problem solving sections, as well as grading assignments and exams.

## PROFESSIONAL REFERENCES

**Erica Myers** (chair)  
Assistant Professor  
University of Illinois, ACE  
ecmyers@illinois.edu

**Peter Christensen**  
Assistant Professor  
University of Illinois, ACE  
pchrist@illinois.edu

**Don Fullerton**  
Gutgsell Professor  
University of Illinois, Finance  
dfullert@illinois.edu

**Madhu Khanna**  
ACES Distinguished Professor  
University of Illinois, ACE  
khanna1@illinois.edu

## FULL-TIME PRE-DOCTORAL EMPLOYMENT

**Grupo Sao Francisco**, Ribeirao Preto, SP, Brazil (2013)

- Grupo Sao Francisco is a Brazilian health insurance company. I was an analyst in their marketing division. My primary responsibilities were to: conduct price, competitor and market analyses; develop client and vendor satisfaction surveys; monitor the brand’s health in social networks and online press.

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## SELECTED CONFERENCE PRESENTATIONS

“Decomposing the Wedge: Mechanisms driving the gap between projected and realized returns from energy efficiency investments.”

- **2019 Agricultural and Applied Economics Association (AAEA) Annual Meeting**, Atlanta, GA. (July 2019)
- **2019 Association of Environmental and Resource Economists (AERE) Summer Conference**, Incline Village, NV. (May 2019)

“Social Comparison Nudges Without Monetary Incentives: Evidence from Home Energy Reports.”

- **2018 Heartland Workshop**, Urbana, IL. (September 2018)
- **2018 Agricultural and Applied Economics Association (AAEA) Annual Meeting**, Washington, DC. (August 2018)
- **7th Mannheim Energy Conference**, Mannheim, Germany. (May 2018)

“Why are Rented Dwellings Less Energy-Efficient? Evidence from a representative sample of the U.S. housing stock.”

- **5th Economics of Low-Carbon Markets Workshop**, Sao Paulo, Brazil. (December 2017)
- **2017 Association of Environmental and Resource Economists (AERE) Summer Conference**, Pittsburgh, PA. (June 2017)
- **5th International Symposium on Environment and Energy Finance Issues (ISEFI)**, Paris, France. (May 2017)

## AWARDS AND FELLOWSHIPS

**CAPES Science Without Borders Fellowship**

- University of Illinois at Urbana-Champaign (2014 - 2018)

**iSEE Levenick Fellowship**

- University of Illinois at Urbana-Champaign (2016)

**FAPESP Undergraduate Research Fellowship**

- University of Sao Paulo (2012 - 2013)

## OTHER PROFESSIONAL ACTIVITIES

**Big Data in Environmental Economics and Policy** (BDEEP) Research Group, University of Illinois at Urbana-Champaign (2017 - present)

**President of the Graduate Students' Organization** of the Department of Agricultural and Consumer Economics, University of Illinois at Urbana-Champaign (May 2017 - April 2018)

## ADDITIONAL INFORMATION

Software proficiency: Stata, R, Python, L<sup>A</sup>T<sub>E</sub>X, Microsoft Office

Languages: English (fluent), Portuguese (native), French (intermediate)