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Email: Boriana.Miloucheva@mail.utoronto.ca**Website:** borianamiloucheva.com

Citizenship: Canadian, Bulgarian**Research Interests:** Health Economics, Applied Microeconomics, Labour Economics

EDUCATION

Ph.D. in Economics, University of Toronto 2022 (Expected)
Committee: Dwayne Benjamin(co-supervisor), Shari Eli (co-supervisor),
Michael Baker

M.A in Economics, University of Toronto 2014

B.A. Specialized Honours in Business Economics, Glendon Campus, York Uni- 2012
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RESEARCH

Pharmaceutical Promotion, Physician Response, and Opioid Abuse: Identifying the Role of Physicians in the Opioid Crisis (Job Market Paper)

PUBLICATIONS

Mortality Inequality: Updated Estimates for the U.S, Canada, and France *Fiscal Studies*(2021) 42#1. With Michael Baker, Janet Currie, Hannes Schwandt, and Josselin Thuilliez

WORKING PAPERS

Political Polarization, Social Fragmentation, and Cooperation During a Pandemic with Kirsten Cornelson, [WP No. 663](#), 2020 (*Revision requested at Health Economics*)

Physician Bias and Racial Disparities in Health: Evidence from Veterans' Pensions with Shari Eli and Trevon Logan, [NBER WP No. 25846](#), 2019 (*Requested at the Journal of Economic Literature*)

Displacement and Mortality After a Disaster: Time-Series Analysis of Deaths of Puerto Ricans in the United States Post-Hurricane Maria with Gustavo Bobonis and Mario Marazzi, [WP No. 710](#), 2021 (*Revision requested at BMJ Open*)

Is It All Relative? The Health Impacts of Changes to Absolute and Relative Income with Maripier Isabelle, [Draft](#), 2021

Public drug insurance and children's mental health: Risk-specific responses to lower out-of-pocket treatment costs with Jill Furzer, Maripier Isabelle, and Audrey Laporte [WP No. 2021s-34](#), 2021 (*Under review*)

The Long Arm of the Clean Air Act: Pollution Abatement and COVID-19 Racial Disparities with Jill Furzer, [WP No. 668](#), 2020 (*Under review*)

WORK IN PROGRESS

Does Diversity Increase Trust in Science?: Addressing Vaccine Hesitancy Through Representation with Kirsten Cornelson (*Draft available upon request*)

Revealing Infant Death Diagnosis Bias Following the Back-to-Sleep Campaign with Ismael Mourifié and Marc Henry

AWARDS AND GRANTS

University of Toronto Global COVID-19 Student Engagement Grant	2021
Department of Economics Award: Excellence in Teaching by Teaching Assistant	2020
Ontario Graduate Scholarship (3 terms)	2020
Canadian Research Data Centres Network (CRDCN) Emerging Scholars Grant	2019
Ontario Graduate Scholarship (3 terms)	2019
University of Toronto Doctoral Fellowship	2015 - 2019

PROFESSIONAL EXPERIENCE

Student Fellow, Canadian Centre for Health Economics	2020 - present
Economist, Canadian Centre for Economic Analysis	2014 - 2015

Research Assistant	2016 - present
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- Professor Dwayne Benjamin
- Professor Michael Baker
- Professor Shari Eli
- Professors Grant Miller and Christina Gathmann-Maneval
- The Expert Panel on the Labour Market Transitions of PhD Graduates
- [Provostial Advisory Group on Faculty Gender Pay Equity, University of Toronto](#)

Teaching Assistant

2015 - present

- ECO 100: Introduction to Economics (Microeconomics & Macroeconomics)
- ECO 204: Microeconomic Theory
- ECO 306: American Economic History
- ECO 339: Labour Economics: Employment, Wages, and Public Policy
- ECO 340: Labour Economics: The Distribution of Earnings
- ECO 369: Health Economics

CONFERENCE PRESENTATIONS & INVITED SEMINARS

American Society of Health Economists (Virtual)	2021
European Health Economics Association (Oslo, Norway - Cancelled due to COVID-19)	2020
Canadian Centre for Health Economics Seminar Series (Invited)	2020
American Society of Health Economists (Washington, U.S.A.)	2019
International Health Economics Association (Basel, Switzerland)	2019
College of French Health Economists' Journées des Économistes de la Santé Français (Paris, France)	2018
American Society of Health Economists (Atlanta, U.S.A.)	2018
Central New York Economic History Conference (Hamilton, U.S.A)	2017
Interactions: Theoretical Econometrics and Empirical Microeconomics (Toronto, ON. - <i>Co-Organizer</i>)	2017

REFEREING EXPERIENCE

Canadian Journal of Economics

LANGUAGES

English (native), French (intermediate) , Bulgarian (native)
Programming: Stata, R

REFERENCES

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Abstracts

Pharmaceutical Promotion, Physician Response, and Opioid Abuse: Identifying the Role of Physicians in the Opioid Crisis

(Job Market Paper)

This paper investigates the role of physicians and their prescriptions in the opioid epidemic. In order to disentangle the supply behaviour of doctors from the demand behaviour of patients, I leverage the staggered introduction of Medicaid expansion across states to exogenously shift opioid supply. Crucially, I argue that Medicaid expansion is composed of two distinct periods. The first is the pre-expansion announcement period. I argue that during the pre-expansion period, because eligible individuals have yet to receive their coverage there is no change in patient demand or disease burden. However, once the policy is announced, physicians and pharmaceutical firms may change their supply-side behaviour in anticipation of future profits from Medicaid expansion. The second period captures the de-facto expansion of health insurance, which is likely to affect patient demand for pharmaceutical products. Focusing my analysis on the announcement period, I show that pharmaceutical firms respond in advance of policy implementation, increasing the number and value of promotions of opioid products to physicians. These effects are driven by counties with the largest program-eligible population. Using difference-in-differences, I identify an increase in prescription opioid sales over this same period. I also find that increased promotions and prescriptions are associated with an increase in opioid-related deaths in the short-run, which do not appear to be persistent 1 year post-announcement.

Inequality in Mortality: Updated Estimates from the United States, Canada, France

with Michael Baker, Janet Currie, Hannes Schwandt, and Josselin Thuilliez

This study provides comparisons of inequalities in mortality between the United States, Canada and France using the most recent available data. The period between 2010 and 2018 saw increases in mortality and in inequality in mortality for most age and gender groups in the United States. The main exceptions were children under 5 and adults over 65. In contrast, Canada saw a further flattening of mortality gradients in most groups, as well as further declines in overall mortality. The sole exception was Canadian women over 80 years old, who saw small increases in mortality rates. France saw continuing improvements in mortality rates in all groups. Both Canada and France have distributions of mortality that are much more equal than those in the United States, demonstrating the importance of public policy in the achievement of equality in health.

Displacement and Mortality After a Disaster: Time-Series Analysis of Deaths of Puerto Ricans in the United States Post-Hurricane Maria

with Gustavo Bobonis and Mario Marazzi

Extreme weather events such as hurricanes are growing in frequency and magnitude and are expected to affect a growing population due to migration patterns, ecosystem alteration, and climate. While all victims of natural disasters face common challenges, displaced populations undergo distinct experiences that are specific to their relocation. However, measuring the mortality consequences of disasters among these populations is inherently challenging due to the displacement that can take place before, during or in the aftermath of an event. We use an interrupted time-series design to analyze all-cause mortality of Puerto Ricans in the U.S. to determine death occurrences of Puerto Ricans on the mainland U.S. following the arrival of Hurricane Maria in Puerto Rico in September 2017. Hispanic Origin data from the National Vital Statistics System and from the Public Use Microdata Sample of the American Community Survey are used to estimate monthly origin-specific mortality rates for the period 2012 to 2018. We estimated log-linear regressions of monthly deaths of persons of Puerto Rican vs. other Hispanic groups by age group, gender, and educational attainment. We found an increase in mortality for persons of Puerto Rican origin during the 6-month period following the Hurricane (October 2017 through March 2018), suggesting that deaths among these persons were 3.7% (95% CI: 0.025-0.049) higher than would have otherwise been expected. In absolute terms, we estimated 514 excess deaths (95% CI 346 – 681) of persons of Puerto Rican origin that occurred on the mainland U.S., concentrated in those aged 65 years or older. Our findings suggest an undercounting of previous deaths as a result of the hurricane due to the systematic effects on the displaced and resident population in the mainland U.S. Displaced populations are frequently overlooked in disaster relief and subsequent research. Ignoring these populations provides an incomplete understanding of the damages and loss of life.

Does Diversity Increase Trust in Science?: Addressing Vaccine Hesitancy Through Representation

with Kirsten Cornelson

While the scientific community largely supports the safety and efficacy of the COVID-19 vaccines, willingness to receive them among the general public has lagged. One possible explanation for this disconnect is that the general public distrusts the objectivity of scientists, particularly given beliefs are typically split along ideological lines. In this paper, we present experimental findings that relate the effectiveness of scientific communication on the COVID-19 vaccine to the identity and diversity of scientists conveying the message. By randomly varying the demographic and political/religious orientation of scientists conveying a positive message about the safety and efficacy of the COVID-19 vaccine, we measure changes in the willingness of participants to receive a vaccine. Our results suggest that we can reduce vaccine hesitancy with relatively simple informational interventions. In particular, statements from scientists who differed from each other demographically (and, to a lesser extent on signals of political orientation) increased participants' willingness to receive the vaccine. We hypothesize that individuals interpret agreement among scientists with different backgrounds as reflecting a more informative signal of consensus within the scientific community.

Public drug insurance and children’s mental health: Risk-specific responses to lower out-of-pocket treatment costs

with Jill Furzer, Maripier Isabelle, and Audrey Laporte

While the long-term consequences of unmet child mental health needs are well-documented, out-of-pocket costs remain an important barrier to accessing medication in childhood and adolescence. This paper exploits the implementation of a public drug insurance program in Québec, Canada, to estimate the impact of out-of-pocket costs on uptake of pharmaceutical treatment for mental health issues in children. To investigate the potential for low-benefit consumption or moral hazard due to lowered drugs costs, we combine a difference-in-differences estimation framework with novel machine learning techniques to predict the likelihood of diagnosis for ADHD, anxiety or depression across childhood in a nationally representative longitudinal sample of children. Our results suggest that eliminating out-of-pocket costs led to a 3-percentage point increase in treatment uptake and adherence. When adjusting for predicted risk, the effects are concentrated among the top two deciles of risk. For children in the bottom half of the risk distribution, treatment use changes were not statistically different from zero. We find that treatment uptake is driven by changes in stimulants, which are generally prescribed for ADHD. Our results suggest that reductions in out-of-pocket costs could help achieve better uptake of mental health treatment, without leading to low-benefit care among lower-risk individuals.

Is It All Relative? The Health Impacts of Changes to Absolute and Relative Income

with Maripier Isabelle

This paper aims to disentangle absolute and relative income effects on health, with a focus on mental health. To identify the effect of a change of one’s position in the income distribution, we exploit the heterogeneous effects of exogenous movements in the price of oil on the distribution of income. Using hospitalization records linked to census data, we find that oil workers who have many neighbours in the oil industry are less likely, and non-oil workers more likely, to seek hospitalization after oil prices rise. We examine a number of possible explanations for this finding. We show that it is unlikely to be due to a decline in these individuals’ real purchasing power. It is consistent, however, with a relative income effect on health. Our results shed new light on mechanisms through which income inequality might affect people’s well-being.

Political Polarization, Social Fragmentation, and Cooperation During a Pandemic

with Kirsten Cornelson

We study the impact of political polarization on the willingness of people to comply with social distancing directives during the COVID-19 pandemic. We find a reduced compliance with these measures when the state governor differs from the preferred party of survey respondents. Exploring a number of possible mechanisms, we show that these results are strongest in states where the opposing party’s advocates are more hostile and provide evidence that compliance is low when recommendations come from an out-group member. This paper, more broadly, demonstrates the consequences of political polarization on the willingness to contribute to public goods.

The Long Arm of the Clean Air Act: Pollution Abatement and COVID-19 Racial Disparities

with Jill Furzer

This paper investigates the role of long-term exposure to fine particulate pollution (PM 2.5) on COVID-19 disparities. To isolate the effect of PM 2.5, we leverage pollution spillovers from neighbouring counties not meeting Clean Air Act-set maximums on acceptable pollution levels. We find a 1-unit increase in cumulative exposure to PM 2.5 increased COVID-19 deaths by 43.5%. PM 2.5 exposure carries an additional race-specific mortality effect of 6.8%-16% for counties with a high proportion of minority or Black residents. However, counties just above CAA pollution thresholds, which had significant pollution reductions over time, saw a full standard deviation reduction in COVID-19 deaths per 100,000. Counties with higher representation of minority or Black residents saw reductions in deaths by 1.50 and 1.15 standard deviations, respectively. Nevertheless, these protective effects insufficiently compensate for the still higher levels of pollution exposure in counties with more Black or minority residents and the more consequential impact of pollution for these communities.

The Enduring Effects of Racial Discrimination on Income and Health: Evidence from American Civil War Veterans

with Shari Eli and Trevon Logan

We estimate racial differences in longevity using records from cohorts of Union Army veterans. Since veterans received pensions based on proof of disability at medical exams, estimates of the causal effect of income on mortality may be biased, as sicker veterans received larger pensions. To circumvent endogeneity bias, we propose an exogenous source of variation in pension income: the judgment of the doctors who certified disability. We find that doctors appeared to discriminate against black veterans. The discrimination we observe is acute—we would not observe any racial mortality differences had physicians not been racially biased in determining pension awards. The effect of income on health was indeed large enough to close the black-white mortality gap in the period. Our work emphasizes that the large effects of physicians' attitudes on racial differentials in health, which persist today amongst both veterans and the civilian population, were equally prominent in the past.