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Citizenship: Canada (F-1 Visa); Germany

Fields of Concentration:

Primary: Environmental and Energy Economics, Public Economics
Secondary: Macroeconomics

Desired Teaching:

Environmental & Energy Economics
Natural Resource Economics
Public Economics
Macroeconomics
Applied Econometrics

Comprehensive Examinations Completed:

2017 (Oral): Public Economics, Macroeconomics
2016 (Written): Microeconomics, Macroeconomics

Dissertation Title: *Essays in Environmental Public Finance*

Committee:

Professor Matthew J. Kotchen (Co-Chair)
Professor Joseph S. Shapiro (Co-Chair)
Professor Jason Abaluck
Professor Joseph G. Altonji

Expected Completion Date: May 2020

Degrees:

Ph.D., Economics, Yale University, 2020 (expected)
M.Phil., Economics, Yale University, 2017
M.A., Economics, Yale University, 2016
M.A., Economics, University of British Columbia, 2015
B.A., Honors Economics & Accounting, McGill University, 2014

Fellowships, Honors, and Awards:

Carl Arvid Anderson Prize Fellowship, Yale University, 2018-2019
Institution for Social and Policy Studies Fellowship, Yale University, 2018-2019
Cowles Foundation and Economic Growth Center Fellowship, Yale University, 2015-2019
University Graduate Scholarship, University of British Columbia, 2014-2015
Governor General's Medal (first in graduating cohort), McGill University, 2014
Allen Oliver Gold Medal, McGill University, 2014
Philip F. Vineberg Traveling Fellowship, McGill University, 2014
Women's Associates Scholarship, McGill University, 2011-2014

Teaching Experience:

Teaching Assistant to Prof. William Nordhaus, Intermediate Macroeconomics,
Yale College, Fall 2017
Teaching Assistant to Prof. Gerald McIntyre, International Macroeconomics,
University of British Columbia, Spring 2015
Teaching Assistant to Prof. Robert Gateman, Introductory Microeconomics,
University of British Columbia, Fall 2014

Research Experience:

Research Assistant to Prof. Joseph S. Shapiro, UC Berkeley, 2018-2019
Research Assistant to Prof. Christopher Barrington-Leigh, McGill University, 2011-2012

Working Papers:

“Adaptation and Adverse Selection in Markets for Natural Disaster Insurance,”
(November 2019), *Job Market Paper*

“Crowding In with Impure Altruism: Theory and Evidence from Volunteerism in National
Parks” with Matthew J. Kotchen, NBER WP #26445 (November 2019), *Under Review*

Work In Progress:

“Does Globalization Undermine Sustainability?” with Joseph S. Shapiro

“Climate Risk and Insurance Market Unraveling” with Winston P. Hovekamp

“Technology Lock-In and Optimal Carbon Pricing” with Jonathan T. Hawkins-Pierot

Publications (pre-PhD):

“Environmental Preferences and Consumer Behavior” (2016) *Economic Letters*, 149, 1-4.

Seminar and Conference Presentations:

2019: NBER Summer Institute (Environment & Energy Economics)

2019: UC Berkeley

2018: Northeast Workshop on Energy Policy & Environmental Economics (Columbia U.)

2018: Canadian Resource & Environmental Economics Association Workshop (discussant)

2017: Montréal Natural Resources & Environmental Economics Workshop (McGill U.)

Professional Service:

Referee for *Journal of Public Economics*, *American Economic Review*
Co-founder & organizer, Yale Environmental Economics Student Workshop (2016-2019)

Languages:

English (native), French (fluent), German (intermediate)

Data Clearance:

U.S. Special Sworn Status (2019-)

References:

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Dissertation Abstract

Adaptation and Adverse Selection in Markets for Natural Disaster Insurance [Job Market Paper]

Natural disasters are increasing in severity and cost. For example, public flood insurance payouts in the United States have increased twentyfold in the past two decades. In response to the rising financial burden on flood, fire, and earthquake insurers, natural disaster insurance market reform is the current focus of seven U.S. Congressional bills.

Despite the scope of this policy debate, existing literature lacks answers to fundamental questions that are needed to evaluate proposed reforms. First, how much are homeowners willing to pay for natural disaster insurance? Second, what is the marginal cost of providing natural disaster insurance to homeowners? Third, what are the social welfare consequences of proposed policy reforms, such as increasing flood insurance prices toward actuarially fair levels, or enforcing an insurance mandate?

To answer these questions, this paper develops a model of natural disaster insurance markets and combines extensive microdata on the U.S. residential housing stock with newly available administrative data on millions of flood insurance contracts. I exploit house-level variation in flood insurance prices and dwelling characteristics to estimate homeowners' willingness to pay and expected cost, test for adverse selection on observed and unobserved variables, and quantify the welfare implications of proposed reforms.

The paper has three main results. First, homeowners' willingness to pay for flood insurance is remarkably low. Fewer than 60% of homeowners in high-risk flood zones purchase insurance despite subsidized premia that are two-thirds of their own expected payouts. This new fact goes against standard models of insurance demand that predict that all risk-averse homeowners purchase insurance if it is actuarially fair or better. I show that market failures typically studied in insurance, such as moral hazard and public bail-outs, seem unable to rationalize low willingness to pay in this setting. Misperception of flood risk appears to play an important role, though I assess other possible explanations.

Second, I provide the first test or evidence of adverse selection in any natural disaster insurance market. I find that homeowners select into insurance based on observable differences in houses' defensive investments against floods, but not on private information about risk. Houses that are required to be elevated are less costly to insure and less likely to be insured than non-elevated houses that pay the same price. Unlike more commonly studied insurance types such as health or unemployment, asymmetric information between homeowners and insurers does not appear to affect insurance payouts in this market.

Finally, I assess the implications of these results for the social welfare consequences of counterfactual policies. I find that increasing flood insurance prices in the presence of frictions such as risk misperception leads to much larger welfare losses than revealed preference demand

suggests. In contrast, enforcing a flood insurance mandate increases social welfare. In both counterfactuals, it is the distortion in demand from frictions that determines the policy recommendation, and not inefficiencies from asymmetric information, as in other settings.

Crowding In with Impure Altruism: Theory and Evidence from Volunteerism in National Parks, with Matthew J. Kotchen

How does government provision of a public good affect private provision? Understanding how public provision affects private provision – through either crowding out or crowding in – is needed to determine the optimal supply of public goods. Existing literature on privately provided public goods uses the extent of crowding out as the standard test between leading models of individual behavior based on pure or impure altruism. We identify limitations of this frequently-used specification test, propose a more general alternative based on crowding in, and provide empirical evidence that supports the new test. We take advantage of a unique panel data set on volunteerism in U.S. National Parks to estimate the causal effect of changes in public funding to a park on the amount of within-park volunteerism. We find that each additional dollar of public expenditure within a park crowds in 27 cents worth of volunteerism on average. We show how our estimates of crowding in, along with heterogeneous effects based on park and volunteer hour types, are theoretically consistent with the mainstay model of impure altruism. We thus argue in favor of shifting emphasis in the literature to recognize that, in general, (i) crowding out need not be less with impure altruism than pure altruism, and (ii) the presence of crowding in provides a more general test for distinguishing between models of privately provided public goods.

Does Globalization Undermine Sustainability? with Joseph S. Shapiro

How does increasing integration of international markets – globalization – affect the rate and efficiency of exploiting resources like rainforests, groundwater, and fisheries? In countries with weak property rights, increased demand and investment from foreign markets could lead to faster exploitation of exhaustible and renewable resources than a social planner would choose; globalization might also directly affect the strength of property rights. We assess how shocks to the costs of international trade affect natural resource depletion and study mechanisms for these effects. To this end, we compile extensive remote sensing (satellite) and administrative measures of deforestation, groundwater withdrawal, fisheries exploitation, minerals extraction, species extinction, and governance indicators. We find that expanding a country's exposure to international trade increases its use of many natural resources. We embed the empirical estimates in a model of economic growth and resource depletion to assess the efficiency and sustainability of these effects of globalization on natural resource extraction, and study policy implications.