LJUBICA "LJ" RISTOVSKA

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Undergraduate Studies:

B.A., Computer Science and Economics, Wellesley College, *magna cum laude*, 2013

Graduate Studies:

Harvard University, 2017 to present
Ph.D. Candidate in Economics
Expected Completion Date: June 2022

Completed first year courses: Microeconomic Theory I (with E. Glaeser and E. Maskin), Microeconomic Theory II (with M. Powell and J. Green), Macroeconomic Theory I (with D. Laibson and R. Barro), Macroeconomic Theory II (with E. Farhi and K. Rogoff), Principles of Econometrics (with G. Chamberlain), Econometric Methods (with M. Kasy and E. Tamer), Psychology and Economics (with D. Laibson and A. Shleifer)

Current second year courses: Public Economics and Fiscal Policy (with N. Hendren), Labor Market Analysis (with L. Katz), Industrial Organization I (with A. Pakes), Research in Health Economics (with J. Newhouse)

Teaching and Research Fields:

Primary fields: Public Economics, Labor Economics
Secondary field: Health Economics, Industrial Organization

Teaching Experience:

Fall, 2012	Introduction to Microeconomics (undergraduate course), Wellesley College, tutor for Professor Andre Switala
Spring, 2012	Introduction to Probability and Statistics (undergraduate course), Wellesley College, teaching assistant for Professor Brett Danaher
Fall, 2011	Data Structures (undergraduate course in Computer Science), Wellesley College, teaching assistant for Professor Brian Tjaden

Research Experience and Other Employment:

07/2018 – present	Graduate Research Assistant for Professor David Cutler
06/2018 – present	Graduate Research Assistant for Professor Amanda Kowalski
09/2015 – 07/2017	National Bureau of Economic Research (located at Stanford and Yale), Research Assistant for Professor Amanda Kowalski
06/2013 – 09/2015	Analysis Group, Inc., Senior Analyst (promoted from Analyst)
06/2012 – 08/2012	Center for Economic Analyses (in Skopje, Macedonia), Economic Policy Intern
12/2011 – 12/2012	Wellesley College Economics Department, Research Assistant for Professor Brett Danaher

Honors, Scholarships, and Fellowships:

2017	Peggy Howard Fellowship, Wellesley College Economics Department
2013	Phi Beta Kappa
2013	Sigma Xi
2013	Case Fellowship, Wellesley College Economics Department
2012	Audrey Freedman '51 Endowed Fund for Students in Economics, Wellesley

	College
2011	Three Generations Prize for Writing in Science (awarded for the paper *Predictions Using Google and Twitter*), Wellesley College Writing Department
2010	Elizabeth Vogel Falk Prize in German, Wellesley College German Department

Service

2018-present	Harvard Graduate Women in Economics, core member
2018-present	Harvard Economics Professional Development Team, core member

Publications:

"Impact of Symptomatic Skeletal Events on Healthcare Resource Utilization and Quality of Life Among Patients with Castration-Resistant Prostate Cancer and Bone Metastases". Rana McKay, Batool Haider, Mei Duh, Adriana Valderrama, Mari Nakabayashi, Matthew Fiorillo, **Ljubica Ristovska**, Lonnie Wen, and Philip Kantoff. *Prostate Cancer and Prostatic Diseases* 20, 276–282 (2017).

"Functional Limitations and Health Care Resource Utilization for Individuals with Cognitive Impairment without Dementia: Findings from a US Population-Based Survey". J. Scott Andrews, Urvi Desai, Noam Y. Kirson, Caroline J. Enloe, **Ljubica Ristovska**, Sarah King, Howard G. Birnbaum, Adam S. Fleisher, Wenyu Ye, Kristin Kahle-Wrobleski. *Alzheimer's and Dementia: Diagnosis, Assessment and Disease Monitoring* 1(10), published online Dec. 2016.

"Assessing the Economic Burden of Alzheimer's Disease Patients First Diagnosed by Specialists". Noam Y. Kirson, Urvi Desai, **Ljubica Ristovska**, Alice Kate G. Cummings, Howard G. Birnbaum, Wenyu Ye, Scott J. Andrews, Daniel Ball, Kristin Kahle-Wrobleski. *BMC Geriatrics* 16(1), 2016.

"Economic Outcomes among Medicare Patients Receiving Bioengineered Cellular Technologies for Treatment of Diabetic Foot Ulcers". J. Bradford Rice, Urvi Desai, **Ljubica Ristovska**, Alice Kate G. Cummings, Howard G. Birnbaum, Michelle Skornicki, David J. Margolis, Nathan B. Parsons. *Journal of Medical Economics* 18(8), 2015.

"Political Consensus for the Economic Future of Republic of Macedonia". Marjan Nikolov, Borce Trenovski, Hristijan Risteski, **Ljubica Ristovska**. Supported by Open Society Institute Think Tank Fund, Budapest. Published in Macedonian, 2013.

Stata commands:

"MTEBINARY: Stata Module to Compute Marginal Treatment Effects (MTE) with a Binary Instrument," with Amanda Kowalski and Yen Tran. First Version: December 2016. Latest Version: July 2018. http://users.nber.org/~kowalski/mtebinary_package.zip

"MTEMORE: Stata Module to Compute Marginal Treatment Effects (MTE) with a Binary Instrument," with Amanda Kowalski and Yen Tran. First Version: July 2018. http://users.nber.org/~kowalski/mtemore_package.zip

HARVARD UNIVERSITY
DEPARTMENT OF ECONOMICS

DAVID M. CUTLER
Otto Eckstein Professor of Applied Economics

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September 23, 2018

To Whom It May Concern:

I am writing in recommendation of Ljubica "LJ" Ristovska for the health economics 'boot camp'. I recommend LJ extremely highly.

LJ is a second year student in the Ph.D. program at Harvard. I am LJ's primary advisor, and thus I know her well. LJ is a fantastic student. Her grades are excellent, she is already attending seminars, and she has many research ideas. I am extremely optimistic that LJ will write an exceptional dissertation. LJ's interests are very much in line with the boot camp. LJ is interested in health economics in all its many manifestations: IO issues, public economics issues, development issues, and the like. LJ hasn't settled on a dissertation topic just yet, but she is working in a number of areas. Thus, I think the boot camp will benefit her greatly, and that she will have a lot to contribute to other students.

Personally, LJ is a great person to interact with. She is bright, considerate, widely read, and able to consider multiple points of view. She is also a good speaker – though I have not yet seen her give a seminar.

For all these reasons, I recommend LJ Ristovska highly for the boot camp. Please contact me if you would like additional information.

Sincerely,



David M. Cutler

Ljubica "LJ" Ristovska

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Mobile phone: 617-412-1095
Email: ristovska@g.harvard.edu

September 22, 2018

Dear Professor Handel, Professor Ho, and Professor Kolstad,

It is with great pleasure that I am applying to the Health Economics Research Boot Camp for Graduate Students held at the National Bureau of Economic Research (NBER) on December 4-6, 2018.

I am currently a second-year PhD candidate in the Economics Department at Harvard University. I obtained my B.A. in Computer Science and Economics at Wellesley College in 2013, focusing on topics at the intersection of industrial organization and information economics. Upon graduation, I joined the Health Economics and Outcomes Research Practice at Analysis Group as an Analyst, where I worked on topics related to epidemiology, cost-effectiveness, and burden-of-illness analyses. My interest in broader and more impactful research in health economics motivated my work as a research assistant for Professor Amanda Kowalski at Stanford and subsequently at Yale prior to beginning my PhD studies.

During my PhD studies, I have been continuing to work in the health economics field – as I elaborate further in the enclosed essay, I have been working on a joint project with Professor Kowalski trying to estimate the social welfare effects of Medicaid, and have also been working with Professor David Cutler on the topic of whether living in a more educated area correlates with life-expectancy. Given my strong interest in health economics, I would be incredibly honored to join a select group of graduate students at this boot camp and learn about the frontier of health economics from the top academics in the field.

As instructed, please find enclosed in this application the following documents:

- This cover letter
- Curriculum vitae containing completed first-year courses and current courses
- A short essay describing my motivation for attending the boot camp, my current research agenda, and future research aspirations.

Professor David Cutler, the Otto Eckstein Professor of Applied Economics in the Department of Economics at Harvard University, is submitting a recommendation letter speaking to my interests and background via email to epepe@nber.org.

Thank you for your consideration, and please do not hesitate to contact me at 617-412-1095 or ristovska@g.harvard.edu should you have any questions or would need further clarification. I look forward to hearing from you.

Sincerely,

LJ Ristovska

Why do physicians behave the way they do? How do they learn about new treatments and guidelines? How does physician behavior relate to health care utilization and spending? Few studies have explored these topics, even though a thorough understanding of physician behavior is crucial for determining the regional variation in healthcare utilization and spending. Additionally, continuous physician development and learning is essential for delivering contemporary and high-quality healthcare, particularly in light of changing clinical guidelines and the introduction of novel treatments. Policies optimizing physician behavior and formal/informal physician learning (e.g., from interactions with patients or consultations with colleagues) could have a large positive impact on social welfare. Understanding physician learning can also shed light on information transfer and diffusion in healthcare, where physicians frequently act as gatekeepers for treatments and procedures. Finally, such insights can provide a foundation for many inference and learning models in health economics.

These questions represent the main drivers behind my current research agenda, which focuses on understanding physician behavior, how they prescribe treatments or diagnose patients, how they learn about new treatments and guidelines, and how all of these factors relate to health care utilization and spending, as well as patient outcomes. I am also interested in inference based on physician knowledge, in particular combining novel machine learning techniques with assumptions on expert knowledge specialists possess relative to primary care physicians.

To further this research agenda, I have been exploring novel data sources which allow for measuring physician learning. For example, I have been researching programs offered through Partners in Health where U.S. physicians work in developing countries to train local medical providers and staff. Part of the identification strategy is to use the quasi-random placement of physicians in developing countries to explore behavior changes among local physicians after having been trained by a highly skilled physician. Additionally, if selection into this program can be plausibly addressed, I intend to follow the physicians’ behavior after they return to the U.S. in order to explore whether working in an environment that does not allow for extensive reliance on advanced technologies has an effect on their behavior as well as their patient outcomes and spending.

While my current research agenda focuses on the provider side of health care, another avenue of research that I am interested in includes regional variation in health care utilization, spending, and mortality. I am also interested in socio-economic determinants of health, insurance, and spending. One arm of this research agenda originated while I was a research assistant for Professor Amanda Kowalski, with whom I worked intensively on evaluating heterogeneity in emergency room utilization within the Oregon Health Insurance Experiment using marginal treatment effect methods. I am currently working with Professor Kowalski on a joint project where we use the marginal treatment effect methods for estimating social welfare and related heterogeneity in social welfare from health insurance.

Another research project that brought me closer to my current research agenda began this summer while working as a research assistant for Professor David Cutler. We are continuing to work together, along with Professor Edward Glaeser and Professor Jacob Bor, to determine the relationship between area-level human capital and education and mortality, which sparked my interest in the regional variation in health status, utilization, and spending.

My broad goal is to contribute unique, innovative, and policy-relevant research to the field of economics and assist in the evaluation of public and health policy. The above research agenda builds on my current

research interests and capabilities. But it is not meant to foreclose on opportunities to learn about other topics through coursework, research, and interaction with my colleagues. For exactly these reasons, I am applying for the Health Economics Research Boot Camp for Graduate Students.

During my first year as a PhD candidate in Economics at Harvard University, I focused intensely on learning the essentials of microeconomic theory, macroeconomic theory, and econometrics. However, this coursework provided few opportunities to specifically delve into the health economics literature, and I regard the Health Economics Research Boot Camp as an excellent opportunity to learn about the frontiers of health economics via the assigned readings and the presentations of accomplished health economists. Furthermore, it represents a great opportunity to meet faculty and students outside of Harvard’s community and discuss my current research interests with a broader audience. Because the boot camp is research-focused, I also see it as a stepping stone for refining my research ideas and translating them into actionable items, either through ideas on identification of physician learning or through learning about novel data sets that can help me address this research question. Finally, I hope to be inspired by the readings, my peers in attendance of the boot camp, and participating faculty members to expand my research agenda and pursue new avenues of research, both methodologically and conceptually.