Zhouyu "Joy" Wu
Cornell University, Applied Economics & Management Department
Warren Hall 434 — 137 Reservoir Ave, Ithaca, NY 14850
(224) 715-3153 • zw369@cornell.edu

March 30, 2018

11th Entrepreneurship Research Boot Camp
NBER Entrepreneurship Working Group
Cambridge, Massachusetts, USA

Dear Sir or Madam,

I am applying to the 11th Entrepreneurship Research Boot Camp (ERBC) hosted by the NBER Entrepreneurship Working Group. I look forward to the invaluable opportunity to participate in this intensive workshop and attend the subsequent NBER Working Group Meeting.

I am a PhD student in Applied Economics & Management at Cornell University. My research interest is at the nexus of (i) digitization, entrepreneurship, and innovation and (ii) behavioral and experimental economics. This is my first time applying to the ERBC, and I have not attended prior NBER Entrepreneurship Working Group meetings. My prior affiliations with the NBER include attendance at this year's Digitization Tutorial for PhD students (February 28 to March 1) and the Economics of Digitization winter meeting (March 1 to March 2).

In this document, you will find my Curriculum Vitæ and an essay explaining my motivation to attend the ERBC. As part of my ERBC application, my current PhD advisor Aija E. Leiponen will provide a letter of recommendation to Brett Maranjian at maranjian@nber.org. Her contact information is provided below:

Professor Aija E. Leiponen
Cornell University, Applied Economics & Management Department
Warren Hall 351C — 137 Reservoir Ave, Ithaca, NY 14850
(607) 255-7588 • aija.leiponen@cornell.edu

Thank you for your time and effort in considering my application.

Sincerely,

Zhouyu "Joy" Wu

Attached: Curriculum Vitæ and Application Essay

Zhouyu "Joy" Wu | CV
Cornell University, Applied Economics & Management Department
Warren Hall 434 — 137 Reservoir Ave, Ithaca, NY 14850

(224) 715-3153 • zw369@cornell.edu

Education

Graduate Studies:

PhD Student in Applied Economics & Management, Cornell University *2015 – Present*

Special Committee: Aija E. Leiponen (Chair), David R. Just, and Vicki L. Bogan

Coursework:

- Microeconomic Theory I & II
- Econometric Theory I & II
- Mathematics for Economists
- Macroeconomic Theory I
- Applied Microeconomics I & II
- Applied Econometrics
- Statistical Methods I
- Applied Discrete Choice Modeling (Current)

Undergraduate Studies:

BA in Economics, University of Chicago *2008 – 2012*

Research Area

Primary:
Economics of Digitization
Innovation & Entrepreneurship

Secondary:
Experimental & Behavioral Economics

Research Experience & Other Employment

Research Assistant for Professor David Just and Professor Vicki Bogan *2018 – Present*

Research Assistant for Professor Aija Leiponen *Summer – Fall 2016*

Consultant, Navigant Economics *2013 – 2015*

Jr. Associate Consultant, IRI Group *2012 – 2013*

Teaching Experience

Teaching Assistant, Cornell University *2016 – Present*

- AEM 2400 "Marketing for Non-Dyson Majors" with Prof. David Wooten (S 2018)
- AEM 4230 "Contemporary Topics in Behavioral Finance" with Prof. Vicki Bogan (F 2017 & F 2016)
- NCC 5070 "Principled Leadership" with Profs. K. O'Connor, I. Smith, and M. Duguid (F 2017)
- AEM 2400 "Fundamentals of Modern Marketing" with Prof. Sherif Nasser (Su 2017)
- AEM 2420 "Marketing for Dyson Majors" with Prof. Sherif Nasser (S 2017)

Professional Activities

Department Service:

President of AEM Graduate Student Association, Cornell University *2017 – Present*

Other Service:

Alumni Interviewer for College Admissions, University of Chicago *2014 – Present*

Presentations & Conferences

Presentations:

Digitization Round Table, Aalto University *Oct. 2017*

Title: "The Effects of Rights, Contracts, and Access in IP: Experiments on behavioural mechanisms and licensing structures"

Participant:

NBER Digitization Winter Meeting *Mar. 2018*

NBER Digitization Tutorial *Feb. – Mar. 2018*

Wharton Innovation Doctoral Symposium (WINDS) *Oct. 2017*

Honors, Scholarships, & Fellowships

Crowe Endowment Summer Fellowship *Summer 2016 & 2017*

Cornell Graduate Fellowship *Academic Year 2015 – 2016*

Research in Progress

Endowment, invention, and expertise effects in IP licensing: This experimental study simulates IP creation, rights assignments, and licensing transactions in a laboratory. IP ownership, creation, and expertise are examined as non-normative factors influencing licensing decisions. Participants are asked to license or exploit solutions to a logic puzzle. I elicit patent licensor (licensee) WTA (WTP) royalty rates, as well as the probabilistic belief of a solutions' success.

The curse of knowledge in data ownership (with Aija Leiponen): Data sellers may overestimate the value of their commodity to potential buyers. We simulate data ownership and data exploitation using stylized digital text data in a laboratory, and we elicit data owners' prediction on the expected value of data exploiters' success in using data. There are plans for a computerized data game to be used in workshops with companies, where they can gain exposure to strategic issues in data sharing.

Paying for privacy while selling your information: How an individual values personal data may vary depending on whether it is framed as a transfer of information or a purchase of protection. I posit that individuals subjectively view privacy goods as distinct from non-disclosure of personal information — even when the objective outcomes are identical — and the value of privacy is influenced by the individual's *ability* to exploit or exclude information.

Application Essay for the 11th NBER Entrepreneurship Research Boot Camp

Zhouyu "Joy" Wu
March 30, 2018

Decision-making in idea generation and information trading may be subject to biases and heuristics like any other market studied by behavioral economists. Moreover, the valuation of ideas and information is inherently difficult: The trade-offs, pay-offs, and risks are unclear and prices are often determined at the individual-transaction level. Empirical literature on entrepreneurship has found evidence on how valuations of opportunities are vulnerable to psychological influences [e.g., Busenitz and Barney (1997), Camerer and Lovallo (1999), Hooshangi and Lowenstein (2016)]. While the existing literature on entrepreneurship is primarily non-experimental, experimental studies have been growing in recent years [e.g., Cooper and Saral (2013), Hölm et al. (2013), Koudstaal et al. (2015)]. I believe there is opportunity to continue the growing behavioral and experimental entrepreneurship literature in examining systematic biases of firms and individuals, who are traditionally assumed to be only profit maximizing in their decisions.

My research area examines non-normative factors that influence decision-makers in information markets — an economic setting that entrepreneurs frequently participate in. My research methodology currently consists of laboratory experiments, which I intend to use as training and motivation for future, large-scale field experiments. Given that my research area and methodology are niche and nascent in the entrepreneurship literature, my participation in the NBER ERBC would be the ideal opportunity for intensive training in and exposure to the frontier of entrepreneurship research. By gaining a deep and comprehensive understanding of the leading areas of entrepreneurship research, I can identify the pressing behavioral questions and contribute to the research conversation in a meaningful way.

My current projects study three very kinds of information categories and exchanges: Patents, data, and privacy. The common behavioral thesis among my projects is the assertion that decision outcomes can vary based on property rights assignments, due to the framing effects they impose on its agents. Below is a summary of my current projects pursued:

(1) Endowment, invention, and expertise effects in IP licensing: This 2x2 laboratory experiment simulates patent creation, rights assignments, and licensing transactions in a hypothetical marketplace. A royalty payment system is used for transactions between different agents: Owner-noncreators and

buyers versus owner-creators and buyers. To simulate IP creation and trading in a laboratory setting, participants are presented with a logic puzzle that — if solved by an accurate solution — can earn them profits. A solution to the logic problem represents the patent in a simulated transaction, which is either created by, endowed to, or licensed by participants (depending on their assigned group). Three outcome variables are measured through a computerized survey to elicit IP valuation, including the probabilistic belief of a patent's success, an assessment of patent quality, and a minimum WTA or maximum WTP royalty price for licensing the patent. Since real-life inventors are typically experts in their field, I plan to examine the role that expertise plays into valuations in a follow-up experiment.

(2) The curse of knowledge in data ownership (with Aija Leiponen): Data is an experience and non-rival commodity, in which revealing more about the product decreases its value to potential buyers. Thus, it is often the case that data sellers are more knowledgeable than buyers in a transaction. This information asymmetry may result in a "curse of knowledge," leading owners to overestimate the value of their commodity to potential buyers. An experiment with an internet-based game on text data will be used to test for this bias in data-transactions where better-informed agents predict the performance of less-informed agents in a hypothetical data market. We hope to develop a data game using this experiment as an exercise for companies to gain exposure to data sharing issues while generating research data for us to analyze.

(3) Paying for privacy while selling your information: The privacy paradox of how individuals' stated preferences for privacy are strong and their revealed preferences for privacy are weak have been confounding researchers in recent years, particularly in regards to digital personal data. As a possible explanation of the seemingly disparate privacy preferences, I posit that individuals subjectively view privacy goods as distinct from non-disclosure of personal information — even though they can be objectively identical, and the value of privacy is influenced by the individual's ability to exploit or exclude personal information. This experiment will test for whether the exercise of that ability (either exploitation or exclusion) is strictly preferred to the "do-nothing" option, by eliciting participants' preferences in a simple discrete choice experiment. Another important phenomenon I plan to incorporate into the experiment is a test for preference reversal over time.

CORNELL
UNIVERSITY

Dyson School of Applied Economics and Management

Aija Leiponen
Associate Professor
351C Warren Hall
Ithaca, New York 14853-7801
Telephone: 607-255-7588
Fax: 607-255-9984
E-mail: aija.leiponen@cornell.edu

March 30, 2018

Dear NBER Entrepreneurship Bootcamp organizers:

This letter is to support the application of Joy (Zhouyu) Wu to attend the bootcamp this summer. Joy is a third-year PhD student in the Applied Economics and Management program within the Cornell SC Johnson College of Business. She has completed and passed the required economics course sequence (partly taught within the Dyson School of Applied Economics and Management and partly through the Cornell Economics department). Joy is interested in creativity, innovation and entrepreneurship particularly in the digital economy, and her primary research approach is experimental economics. Specifically, much of her work is focused on the valuation of intangible goods.

In her second-year paper, Joy studied the "invention bias" that may influence the valuation of ideas, such that idea creators view them as more valuable than pure resellers or buyers. Such a bias would hamper markets for ideas and complicate negotiations for access to technological assets. Her initial experiments provided evidence in the expected direction and she decided to continue exploring this set of topics in a number of different ways.

An alternative explanation for observing the invention bias (excessive valuation of creative ideas by the creator) is the "curse of knowledge," whereby the idea creator might have more information about the importance and applicability of the idea than potential buyers or resellers. In another set of experiments, Joy is attempting to distinguish inventor bias from the curse of knowledge. The specific context for this work is the market for data, and some of this research is joint with me.

In our joint work we are interested in the nature of data as an economic commodity and attempt to highlight its unique characteristics through a set of trading experiments using data as the focal intangible good. This set of experiments is still under development, but one of the key theoretical issues we aim for is to distinguish the data creator effect (invention bias) from the curse of knowledge (where the creator has more information about the context of the data). We are also developing treatments that allow us to explore the notion of data "ownership" through varying contractual specifications for data sharing. These experiments will be carried out both within the lab (with students or local residents) and in the field with a set of industry partners. For the latter initiative, we are in the process of developing a "data trading game" for companies to use to explore and learn about strategic issues in data sharing while generating research data for us to analyze.

Joy's third paper is delving more directly into the highly topical issue of data privacy. Here she is developing an experiment where subjects would first need to reveal personal information and would then be asked to either sell it or "buy it back", i.e. prevent it from being published on a website. This attempts to reveal the core issue of the privacy debate, namely, why people tend to be lax about protecting their information but then aggravated when they realize their information being released – a sort of a "reverse endowment effect."

Overall, Joy is a very thoughtful and focused young scholar who is able to distill essential aspects of a research puzzle into an experimental design and think through how to identify the different effects operating within the research context. She also has a flexible mind to both deeply engage theoretical ideas and select and focus on those that are the most critical in the economy. In other words, she is seeking to develop research that has both rigor and relevance. I highly recommend her to the NBER bootcamp as I believe she has an interesting research profile that complements the NBER community and also has what it takes to benefit from the experience and incorporate it in her future research.

Sincerely,



Aija Leiponen