Edward Kong

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EDUCATION

Harvard University

Ph.D. Economics, *expected 2025*

M.D. Harvard-MIT Health Sciences and Technology, *expected 2027*

Yale University

B.S. Economics and Biomedical Engineering (distinction in both majors), *magna cum laude*, 2016

GRADUATE COURSEWORK

Harvard University

- ECON 2010A, 2010C, ECON 2120 (first semester G1 core courses in micro, macro, and metrics)
- HLTHPOL 2000A (1st semester seminar for the health policy PhD, rotating seminar speakers)
- ECON 2465 (audited; health policy survey course, taught by David Cutler)
- ECON 3460 (audited; reading course in health economics, taught by Joe Newhouse)

Massachusetts Institute of Technology

- 14.272 (audited; 2nd course in the IO sequence, taught by Nancy Rose and Michael Whinston)

Yale University

- ECON 550 (first semester graduate econometrics, taught by Donald Andrews)

RESEARCH

Publications

- Lee, J. J., Wedow, R., Okbay, A., **Kong, E.**, Maghzian, O., … Laibson, D., Yang, J., Johannesson, M., Koellinger, P. D., Turley, P., Visscher, P. M., Benjamin, D. J., Cesarini, D. (2018). Gene discovery and polygenic prediction from a genome-wide association study of educational attainment in 1.1 million individuals. *Nature Genetics, 50(8), 1112–1121.*
- Kim, C.-Y., Wiznia, D. H., Averbukh, L., Torres, A., **Kong, E**., Kim, S., & Leslie, M. P. (2016). PROMIS Computer Adaptive Tests Compared With Time to Brake in Patients With Complex Lower Extremity Trauma. *Journal of Orthopaedic Trauma*, *30*(11), 592–596.

In progress

- Linnér, R. K., Biroli, P., **Kong, E.**, Meddens, S. F. W., Wedow, R., Fontana, M. A., … Beauchamp, J. P. (2018). Genome-wide association analyses of risk tolerance and risky behaviors in over one million individuals identify hundreds of loci and shared genetic influences. (accepted, *Nature Genetics*)
- Ericson, K. M., **Kong, E.,** White, J. M., Laibson, D., Cohen, J. D. (revise and resubmit). Response to "Modelling choices in delay discounting". *Psychological Science*.
- "Does Paying Physicians to Increase Patient Medication Adherence Work?" (manuscript in preparation, with James Choi and many others)

EMPLOYMENT

Harvard University, Department of Economics, Post-Baccalaureate Fellow: July 2016 – Aug. 2018

- Research assistant to professors John Beshears (HBS), James Choi (Yale SOM), David Laibson (Harvard), and Brigitte Madrian (HKS) in behavioral economics. Work on modelling intertemporal choice and political attitudes.

- Research assistant to professors Dan Benjamin (USC) and David Cesarini (NYU) in genoeconomics. Conduct statistical analyses on genome-wide data and assist in writing manuscripts for publication.

Yale University, Department of Economics, Tobin Research Assistant: Jan. 2015 – June 2016

- Research in health economics with Professors Amanda Kowalski and José-Antonio Espin-Sanchez. Developed econometric models to analyze the effects of policy and medical procedures on infant and maternal mortality.
- Research in development economics with Professor Nicholas Ryan on the effect of electricity supply on firm entry and development in India.

HONORS AND FELLOWSHIPS

2016 Charles H. Dickerman Memorial Prize (best senior thesis), Yale Economics Department
2016 Phi Beta Kappa, Yale University
2016 Julia Vance and Jason Carter Travel Fellowship, Yale Engineers Without Borders
2015 Tau Beta Pi (top 12.5% of juniors in engineering), Yale University
2015 Richter Fellowship, Yale University
2013 Richard U. Light Fellowship, Yale University
2012 Valedictorian, The Pingry School
2012 National Merit Scholar

CONFERENCES

- Integrating Genetics and the Social Sciences, Institute of Behavioral Science, University of Colorado Boulder. **Presentation and Poster: "A Genetic Profile of General Risk Tolerance and Related Phenotypes."** October 2017.
- Behavior Genetics Association (BGA) Annual Meeting. **Presentation**: **"Examining the shared genetic architecture of risk tolerance and related behaviors."** July 2017.

LEADERSHIP & OTHER EXPERIENCE

Yale Varsity Men's Fencing Team (Division 1), *Sabre Fencer* 2012 – 2016

Yale Engineers Without Borders, *Co-President (formerly Treasurer)* 2013 – 2016
Directed engineering, health, and financial efforts of a 40-member group towards the development of a gravity-fed water delivery system for the rural community of Rohvitangitaa, Cameroon. Contributed to the acquisition of a $10,000 grant from the Alcoa Foundation.

Yale iGEM Research Team, *President (formerly Treasurer)* 2013 – 2015
Directed projects for entry in the International Genetically Engineered Machine (iGEM) synthetic biology competition. Led a 10-person team with an annual budget of $25,000.

Yale New Haven Hospital, Dept. of Orthopedics and Rehabilitation, *Researcher* 2014 – 2015
Assessed orthopedic trauma patients for a clinical research project on lower limb trauma.

Yale Department of Psychiatry, *Researcher* 2013 – 2014
Molecular biology research on major depression in rodent models.

Endeavor Global, New York, NY, *Research Intern* summer 2014
Co-authored reports on the impact of scaleup companies on jobs in emerging markets

Yale College Student Advisory Committee on Science and Quantitative Reasoning 2013 – 2015

The Politic, Yale University, *Staff Writer* 2013 – 2014

OTHER

Computing: R, MATLAB, Python, Java, STATA, Unix shell; **Languages:** Mandarin (functional proficiency)

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September 18, 2018

Elisa Pepe, NBER
Professor Ben Handel, University of California, Berkeley
Katherine Ho, Princeton University
Jonathan Kolstad, University of California, Berkeley

National Bureau of Economic Research
1050 Massachusetts Ave.
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epepe@nber.org

Dear Elisa, Ben, Kate, and Jonathan,

I am writing to very strongly recommend Ed Kong, a G1 in the doctoral program at Harvard, as an applicant for admission to the National Bureau of Economic Research's Health Economics Research Boot Camp program.

From June 2016 to June 2018, Ed worked as a full-time research assistant (and coauthor) at the National Bureau of Economic Research and Harvard University for me and my coauthors Dan Benjamin (USC), John Beshears (Harvard), Jon Cohen (Princeton), David Cesarini (NYU), James Choi (Yale), Keith Ericson (Boston University), Brigitte Madrian (Harvard), and Patrick Turley (Broad Institute).

Ed is one of the most thoughtful, dedicated, and deeply knowledgeable research assistants I've had in my career, spanning 69 research assistants employed at some point over 22 years. This is a highly select group, almost all of whom have gone on to graduate school

in top five economics departments and most of whom are now leaders in their respective fields.[1]

Ed stands out within this group for his deep understanding of advanced statistical methods, his analytic skills, his extraordinary dedication to research, his creativity, his mentorship of other colleagues, and the breadth of this knowledge, spanning the fields of bioengineering, genomics, medicine, data science, and economics.

The only minor "weakness" in his undergraduate record is a B+ received at Yale in a doctoral econometrics course taken when he was an undergraduate. This is the first semester doctoral course in econometrics (taught by Don Andrews). Ed took this course out of sequence – he hadn't taken real analysis yet and was not yet ready for graduate econometrics. (When he did take real analysis the next semester, he finished third in the class of 50.) Other than this one B+, his grades at Yale were stellar.

Comparing Ed to undergraduates at Harvard, he would rank in the top 1%. Comparing Ed to doctoral students in Harvard's economics department (where he is now a student), he ranks in the top 25%.

Ed has many major strengths, which are illustrated by the remarkable work that Ed started in the summer of 2016. That summer, I asked Ed to help with a short paper that my coauthors and I were submitting to *Psychological Science* (the paper is now revise and resubmit on its third round; it is coauthored with Jon Cohen, Keith Ericson, Ed Kong, John White and myself). Our paper critiques and corrects the statistical methods of another paper published in the journal (essentially, we derive the biases that arise when samples with insufficient size are used to estimate intertemporal choice models). Ed approached this project with extraordinary energy and insight. He generated many of the best ideas, conducted the lion's share of the statistical analysis, wrote half of our first draft, and also wrote our response to reviewers as the paper reached the second and third rounds of reviews. Ed has been the key contributor to this collaboration. He took the initiative to learn a new computer language to implement some of the analysis of this project and he worked out and resolved some of the hardest statistical issues that we faced, especially convergence problems in our maximum likelihood algorithms and Monte Carlo simulations to calculate boot-strapped standard errors.

That summer he earned the status of coauthor many times over. Ed has long since stopped being a research assistant. On this project he is the co-author driving the project forward and generating the key ideas. He is the one who sees the big picture and enables us to take large conceptual steps in our brainstorming sessions. He is performing at the level of a mature scholar (someone in their late 30's), though he has not even entered

[1] To illustrate the strength of this comparison group, here is a selected list of some of my past research assistants and the departments where they now hold faculty appointments: Gabriel Carroll (Stanford), Ian Dew-Becker (Northwestern), Keith Ericson (Boston University), John Friedman (Brown), Ben Hebert (Stanford), Chris Nosko (Chicago Booth), Parag Pathak (MIT), Nick Roussanov (University of Pennsylvania, Wharton), Kelly Shue (Univesity of Chicago), Eric Zwick (University of Chicago).

graduate school. When he starts writing his own research papers, I expect him to be a path breaking scholar.

He is also a coauthor on two more projects. These are genomics studies in which Ed has been one of the key contributors. On these studies, he has played a leadership role in running genome-wide association studies on cognitive function phenotypes, including educational attainment and risk preferences. These landmark studies – one published and one R&R -- are the first in the world to incorporate over 1,000,000 genomes (i.e., 1,000,000 participants with genotyped data) for the GWAS that are being run. Ed has played a key role in generating the statistical analysis and mentoring/managing other research assistants. The projects would be vastly less successful without his key contributions, both intellectually and as a supportive member of a large team of scholars.

He is also a remarkable person: extremely mature, creative, sophisticated, self-motivated, wise, humble, and always interested in the perspectives of others. He has an open mind. He is a great listener, a strong team member, and a kind person. He is curious and knowledgeable about other cultures and deeply cares about the welfare of others – including people that he has only just met. He loves sharing ideas and taking on new intellectual challenges. He is compassionate and friendly. He is always modest and will be a wonderful member of an academic community. He is likely to be a great teacher, a valued mentor to younger scholars, a prized source of feedback to his peers, and a leading researcher.

I'm very excited about and supportive of Ed's keen desire to combine the studies of medicine, healthcare, and economics. He is getting both a PhD in Economics and an MD (from Harvard Medical School). He has all of the key skills that need to be integrated to study our healthcare system. With his knowledge of data science, statistics, econometrics, bioengineering, and genomics he is perfectly positioned to build bridges between the fields of medicine, health science, and behavioral science, as both a scientist and a practicing physician.

Putting it all together, I predict that he will be a leading scholar in health economics. I very strongly recommend Ed for admission to your program. He has extraordinary promise and I am confident that he will benefit enormously as an active participant of the NBER's Health Economics Research Boot Camp.

Please let me know if I can be of any further assistance in evaluating this extraordinary young scholar and outstanding young person.

Sincerely,

David Laibson

David Laibson
Robert I. Goldman Professor of Economics
Director, Foundations of Human Behavior Initiative

Application to the NBER Health Economics Research Boot Camp for Graduate Students

Contact information

Edward Kong
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Cell: (862) 703-8383
Littauer Center of Public Administration,
1805 Cambridge St, Cambridge, MA 02138

Recommendation letter writer
David Laibson

Note:
I will not need any NSF funding to attend the boot camp but would of course do the necessary readings. I have already contacted Ben Handel and was instructed to submit an application.

Application packet contents:

- Cover letter (this page)
- CV with list of current/completed PhD courses
- Application essay

I write to apply for the NBER research boot camp for graduate students, scheduled for Dec 4-6, 2018. I am an MD/PhD student at Harvard, currently a G1 in the Economics department[1], with a strong interest in health economics, IO, and how behavioral ideas could be incorporated with these fields. The research conducted by the boot camp speakers is thus of considerable interest to me, and I believe the program would be beneficial in terms of continuing to develop my ideas.

Although I am currently a G1, I believe I am equipped for the boot camp given my two years of full-time research experience and prior graduate coursework (outlined in the attached CV and described further below). I would also not require NSF funding (for lodging or travel), because I am local to the NBER.

In terms of research experience, I spent the last two years as an RA for David Laibson and co-authors, including work on genoeconomics (how genetics relate to behavior), intertemporal choice, and an RCT studying physician incentives.

The genoeconomics work led to several conference presentations and publications in the field of behavior genetics and has challenged me to think more deeply about heterogeneity between individuals and how this might interact with the health care system. One topic of interest to me is how personalized medicine will affect treatment effectiveness and cost through decisions made by providers, drug & device companies, and patients.

While a research assistant, I audited two graduate courses in health economics (David Cutler's survey course, ECON 2465, and Joe Newhouse's reading course ECON 3460). These courses gave me foundational knowledge of the literature and resulted in a research proposal in which I aim to study the effects of the ACA on firm decisions in the specialized substance use treatment industry – in particular, how firms choose investments in capacity and quality. I currently have a continued interest in studying substance use from the perspective of health care providers. I also audited a graduate IO course at MIT taught by Nancy Rose and Michael Whinston, which covered important papers in the field.

Prior to my full-time RA work, I was a research assistant for Amanda Kowalski as an undergraduate at Yale. I wrote my undergraduate thesis on firm entry in the generic pharmaceutical industry, in which I estimate a static game of imperfect information between firms. The structural estimates imply that an increase in number of expected competitors by one decreases a firm’s entry probability by 10 percentage points. This project helped to spark my current interest in health IO, and I continue to be interested in topics regarding the pharmaceutical industry.

Because of my past experience and current interests in health economics research, I would greatly value the opportunity to attend this bootcamp. Thank you for your consideration.

[1] My full program of study at Harvard will consist of two years in Economics, followed by two years in medical school, followed by several years of dissertation writing, followed by completion of medical school.