1050 Massachusetts Ave
National Bureau of Economic Research
Cambridge, MA 02138

Cell: +1 203 809 2706
tanw@nber.org

Dear Professors Kevin Bryan, Ina Ganguli, and Kyle Myers,

I am writing to apply for the NBER Innovation Research Boot Camp 2026. I am a Postdoctoral Research Associate at the National Bureau of Economic Research, where I work on the Startup Cartography Project under the supervision of Scott Stern, Jorge Guzman, and Catherine Fazio. I completed my PhD in Economics at Cornell University in 2025, and I was a visiting student at Yale University from 2023 to 2025, hosted by Professor Samuel Kortum.

My research combines large-scale micro data with quantitative spatial models to study the geography of innovation and entrepreneurship. In my job market paper, I document a sharp rise in the spatial concentration of U.S. innovation after 1990 and show that the expansion of information and communication technologies can account for most of this increase. I then add endogenous innovation and technology diffusion to existing quantitative spatial models to examine the consequences of this trend on aggregate growth and welfare.

I am applying to the Boot Camp to deepen my engagement with the innovation economics community and to receive feedback as I further develop my research agenda. In particular, I would value guidance on how best to position and extend my work at the intersection of innovation, entrepreneurship, and quantitative spatial economics – both in terms of empirical design using large-scale micro data and in terms of the framing that connects micro mechanisms to aggregate outcomes. I also expect the Boot Camp to be a great opportunity to learn from faculty and peers working with complementary datasets and methods, and to build relationships that support future collaboration and ongoing exchange of ideas.

If selected, I would not require travel or lodging support, as I am based in Cambridge till August 2026.

Enclosed are my CV, list of courses, and application essay. My recommendation letter writer is **Professor Scott Stern** (email: sstern@mit.edu). I would be happy to provide any additional information or materials upon request. Thank you for your time and consideration.

Yours sincerely,
Weiliang Tan

Weiliang Tan

National Bureau of Economic Research
Office 434
1050 Massachusetts Ave
Cambridge, MA 02138

Cell: +1 203 809 2706
Email: wt289@cornell.edu; tanw@nber.org
Website: www.weiliangtan.com
Citizenship: Singapore, US F1 OPT Visa

Employment

Claremont McKenna College — Claremont, CA, USA
Assistant Professor of Economics — 2026 -

National Bureau of Economic Research — Cambridge, MA, USA
Postdoctoral Research Associate, Startup Cartography Project — 2025 - 2026
Supervisors: Jorge Guzman, Scott Stern, Catherine Fazio

Education

Cornell University — Ithaca, NY, USA
Ph.D. Applied Economics and Management — 2026
M.Sc. Applied Economics and Management — 2022
Advisor: Prof. Ivan Rudik

Yale University — New Haven, CT, USA
IvyPlus Exchange Scholar, Department of Economics — 2023 - 2025
Advisor: Prof. Samuel Kortum

Yale-NUS College — Singapore
B.A. Environmental Studies, minor in Economics (summa cum laude) — 2018

Yale University — New Haven, CT, USA
Visiting International Student Program — Spring 2017

Research Fields

Primary: International and Spatial Economics; Urban Economics; Innovation and Entrepreneurship

Secondary: Macroeconomics; Environmental Economics

Data Access

US Census Special Sworn Status (since Jan 2023)

References

Prof. Samuel Kortum
James Burrows Moffatt Professor of Economics,
Yale University
Chair, Department of Economics
Email: samuel.kortum@yale.edu

Prof. Peter Schott
Juan Trippe Professor of Economics,
Yale University
Executive Director, Yale Branch of the New York Federal Statistical Research Data Center
Email: peter.schott@yale.edu

Prof. Scott Stern
David Sarnoff Professor of Management,
Massachusetts Institute of Technology
Email: sstern@mit.edu

Prof. Ivan Rudik
Associate Professor, Cornell University
Director of Graduate Studies, Dyson School
Email: irudik@cornell.edu

Working Papers

1. Tan, Weiliang (2025). The Geography of Innovation in the United States. [Link] ***Job Market Paper***.
   - Research question: What drives the rising spatial concentration of innovation from 1990 and what are the aggregate consequences?
   - Methodological contribution: Introduce endogenous, directed, and microfounded innovation in a dynamic spatial model
2. Rudik, Ivan, Gary Lyn, **Weiliang Tan**, and Ariel Ortiz-Bobea (2022). The Economic Effects of Climate Change in Dynamic Spatial Equilibrium. [Link] ***Revise and Resubmit, Journal of Political Economy: Macroeconomics***
   - Research question: What are the welfare effects of general equilibrium adaptation via trade, migration, and capital accumulation in response to climate change?
   - Methodological contributions: (i) Model-consistent estimating equations to identify climate impacts on productivity and amenities from temperature shocks; (ii) Quantitative decomposition of general equilibrium adaptation channels (trade, migration, industry switching, capital accumulation) to shocks in fundamentals in a dynamic spatial model

Selected Works In Progress

3. The Geography of Technology Vintages (with Bernardo Ribeiro and Anh Tran)
   - Research question: Why are newer technology vintages disproporately created in high-skill regions?
   - Methodological contribution: Introduce technology vintages in a dynamic spatial model with endogenous innovation
4. The Geography and Spatial Networks of Innovation
   - Research question: What drives the rising intensity and changing geography of cross-region coinventor collaborations, and what are the implications on local and aggregate innovation in the United States?

Non-Academic Publications

1. Addicott, Ethan, Alhasan Badahdah, Luke Elder and **Weiliang Tan** (2019). Internal Carbon Pricing: Policy Framework and Case Studies. Yale Center for Business and the Environment: Research. [Link]

Referee Service

Journal of the European Economic Association; Journal of the Association of Environmental and Resource Economists (x2)

Research Experience

Cornell University

Research Assistant to Prof. Ivan Rudik — Fall 2020 – Spring 2021, Spring 2022
Research Assistant to Prof. Todd Gerarden — Summer 2020

Yale University

Herb-Scarf Summer Research Assistant to Prof. Mushfiq Mobarak — Summer 2017

Yale-NUS College

Participant, Summer Research Program — Summer 2017
Research Assistant to Prof. Lei Yu-Hsiang — Winter 2016
Research Assistant to Prof. Guillem Riambau — Winter 2016
Participant, EnviroLab Asia (joint with Claremont Colleges) — Jan 2016, May 2018

Teaching Experience

Yale University

Teaching Assistant, ECON 184 International Economics (undergraduate) — Spring 2023

Cornell University

Teaching Assistant, AEM 6510 Environmental Economics (masters) — Fall 2021
Teaching Assistant, AEM 4500 Resource Economics (upper-level undergraduate) — Spring 2020
Teaching Assistant, AEM 7010 Applied Microeconomics (first-year Ph.D.) — Fall 2019

Yale-NUS College

Peer Tutor, Economics — Spring 2018

Fellowships, Honors, and Awards

Yale-NUS Overseas Graduate Scholarship — 2018
Yale-NUS Outstanding Capstone Prize in Environmental Studies — 2018
Singapore National Environment Agency EcoFriend Award — 2017
Santander International Experience Scholarship — 2016
Yale-NUS Social Impact Fellowship — 2015

Volunteering

Co-founder & Chairman, Singapore Sustainable Solutions Network — 2015 – 2016
President, I'dECO: Yale-NUS Sustainability Movement — 2014 – 2016
Poster Session Presenter, UNFCC COP 21 Global University Climate Forum — 2015

Miscellaneous

Programming	R, STATA, Julia, Python, Matlab
Languages	English (native), Standard Chinese (limited), Spanish (basic)
Other	World Chess Federation (FIDE) Candidate Master

Last Updated: February 2026

Weiliang Tan

National Bureau of Economic Research
1050 Massachusetts Ave
Cambridge, MA 02138

Cell: +1 203 809 2706
wt289@cornell.edu; tanw@nber.org
www.weiliangtan.com

List of Current and Completed PhD Courses

1. Microeconomics: Microeconomic Theory I, Applied Microeconomics, Game Theory, General Equilibrium Analysis
2. Macroeconomics: Macroeconomics I, Macroeconomics II, Applied Macroeconomics, Dynamic Optimization, Industry Dynamics, Macro Labor, Introduction to Information Economics, Applied Bayesian Time Series
3. Econometrics: Econometrics I, Applied Econometrics, Empirical Strategies II
4. Empirical Innovation: Economics of Ideas (MIT), Entrepreneurship & Innovation (Harvard)
5. International Trade: International Economics (UC Berkeley)
6. Environmental and Resource Economics: Environmental Economics, Resource Economics
7. Others: Intermediate Mathematical Economics, Industrial Organization and Regulation II, Public Finance

Last Updated: February 2026

I study the causes and consequences of the geography of innovation and entrepreneurship by connecting empirical work with quantitative spatial models. In my job market paper, *The Geography of Innovation in the United States*, I document a sharp change in the spatial distribution of domestic innovation. Leveraging comprehensive data on patents, firms, and inventors from 1976 to 2018, I find that innovation became more concentrated in high-skill regions only after 1990, with the sudden rise of information and communication technologies (ICT) playing two distinct roles in this process. First, there was a compositional shift in innovation toward ICT, which is colocated with the ICT service sector and more concentrated in high-skill regions relative to non-ICT innovation. Second, falling communication costs facilitate multi-region firm organization: firms initially concentrated in high-skill regions expand production to lower-cost regions, increase scale, and disproportionately generate non-ICT patenting in their original innovation centers. To interpret these mechanisms and their implications for long-run growth, I introduce endogenous and directed innovation integrated with technology diffusion to existing dynamic spatial models. My framework delivers an analytical characterization of the spatial direction of innovation on the transition path and how its steady-state distribution across space determines long-run aggregate growth.

The methodological tools in my job market paper are the foundation for a broader agenda on the spatial and network empirics of innovation and entrepreneurship, disciplined by quantitative spatial models. In ongoing work, I study the rise of cross-region coinventor collaboration in the United States since 1976 and examine why patents originating in high-skill regions are disproportionately associated with newer technology vintages. Separately, as a postdoc on the Startup Cartography Project (with Jorge Guzman, Scott Stern, and Catherine Fazio), I update predictive analytics on the quality of domestic entrepreneurship across regions from 1960-2025; future work with the team will use my framework to quantify the welfare consequences of the geography of entrepreneurship. Looking ahead, I also plan to study how the geography of clean energy potential, production, and innovation shapes the pace of the energy transition; how university research affects aggregate growth and spatial inequality; and how automation and AI are changing the dynamics of spatial inequality.

I am eager to attend the NBER Innovation Research Boot Camp because it is an ideal environment to sharpen both the positioning and execution of this agenda within the innovation literature. In particular, I would value guidance on how best to frame my work on innovation concentration to core questions in innovation economics about the sources of productivity growth and the microfoundations of technological change. I am also seeking feedback on empirical design and measurement choices that arise when combining patents, inventors, and firm networks over time, especially in separating mechanisms such as talent sorting, multi-region firm expansion, and changing collaboration patterns. Finally, the Boot Camp's intensive workshop format and close-knit community would help me refine the next papers in my pipeline, learn best practices from researchers working with complementary data and methods, and build relationships foster collaboration and ongoing exchange as I develop this research program.

MIT MANAGEMENT SLOAN SCHOOL

Scott Stern
David Sarnoff Professor of Management
Technological Innovation, Entrepreneurship,
and Strategic Management Group

100 Main Street, E62-476,
Cambridge, MA 02142
Phone: 617-253-3053
Fax: 617-253-2660
Email: sstern@mit.edu
http://www.scott-stern.com

February 2026

RE: NBER Innovation Boot Camp Recommendation for Weiliang Tan

Dear Committee,

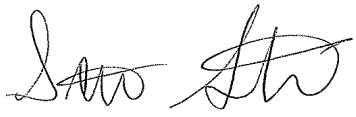
I am delighted to recommend Weiliang Tan for the NBER Innovation Research Boot Camp. Weiliang is currently an NBER Postdoc where he is working with me (as well as Jorge Guzman and Cathy Fazio) on an NSF-funded revision and update to the Startup Cartography Project. Since moving to Cambridge last summer, he has been doing an outstanding job—both substantively and organizationally—bringing the project to a higher level. He has contributed sharp analytical insights, helped integrate new data and methods into the project, and played an important role in bringing the project to fruition.

Beyond his work on the SCP, Weiliang is an exceptionally strong young economist whose research focuses on the changing geography and concentration of innovation. His job market paper, *The Geography of Innovation in the United States*, is a very impressive piece of work that combines careful empirical analysis with a sophisticated dynamic spatial model to shed light on the forces driving the increasing concentration of innovation in high-skill cities. This work fits squarely within the intellectual core of the Innovation Boot Camp and positions him to be both a strong participant and a valuable contributor.

Equally important, Weiliang has immersed himself in the NBER and Cambridge research community. He was a great participant in my doctoral class (with Pierre Azoulay) in the Fall, and regularly attends and contributes to various workshops (NBER Productivity, TIES, etc). He is curious and collegial. He is also local to Cambridge and therefore will not require lodging or additional logistical support.

I recommend Weiliang Tan enthusiastically and without reservation for the NBER Innovation Research Boot Camp. Please feel free to contact me if I can provide any additional information.

Sincerely,



Scott Stern
David Sarnoff Professor of Management
Technological Innovation, Entrepreneurship, and Strategic Management Group
MIT Sloan School of Management