Guglielmo Imperiali d'Afflitto
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Recommendation letter writer:
Jennifer La'O
Columbia University, Economics
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February 10, 2026

Re: Application to the NBER Innovation Research Boot Camp 2026

Dear Selection Committee,

I am writing to apply to the NBER Innovation Research Boot Camp 2026. I am a third-year PhD student in Economics at Columbia University (Business Economics track), and my research interests center on innovation and growth, with an emphasis on modeling research as an inherently uncertain, learning-driven activity. I am developing a dissertation agenda that bridges micro-theoretic tools for experimentation into macroeconomics, with the goal of producing theory that is both disciplined and useful for policy.

My background combines formal training in macroeconomics with experience working on applied questions as a research assistant. I have also spent time in policy institutions (including the European Commission and the Italian Council of State). My CV provides full details on my training and experience.

I am particularly drawn to the Boot Camp because it offers structured exposure to the innovation literature and, just as importantly, sustained interaction with researchers who approach innovation from different angles. That multidisciplinary setting is a strong match for my current stage: it would help me sharpen how to bridge the macroeconomic literature on growth and innovation with microeconomic insights, learn what empirical patterns are most informative to target in theory, and build connections with scholars working across different fields. I would be grateful for the opportunity to participate and to engage actively with the cohort and faculty.

Thank you for your consideration.

Sincerely,
Guglielmo Imperiali

The following is a list of the coursework I completed in the first two years of my PhD.

Coursework

- **First year:**
  - First-year sequences in *Microeconomics*, *Macroeconomics*, and *Econometrics*
  - *Mathematical Methods for Economics* (J. La'O)
  - *Perspectives on Economic Research* (S. Naidu, J. Stiglitz)
  - *Financial Economics of Climate Change* (online inter-doctoral course)
- **Second year:**
  - *International Macro-Finance* (J. Schreger)
  - *Topics in Macro-Development, Growth, and Firm Dynamics* (T. Porzio, C. Walsh)
  - *Macroeconometrics* (J. Bai)
  - *Climate Economics and Finance* (H. Hong, J. Scheinkman)
  - *Trade and Spatial Economics* (J. Dingel)
  - *Computational Macroeconomics* (V. Midrigan)

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EDUCATION

Columbia University, New York, USA — *Aug 2023 - present*
PhD in Economics, Business Economics Track

Bocconi University, Milan, Italy — *Sep 2020 - Mar 2023*
MSc Economic and Social Sciences (ESS-DES) **Summa cum Laude**

Bocconi University, Milan, Italy — *Sep 2017 - Oct 2020*
BSc International Economics and Finance (BIEF) **Summa cum Laude**
Exchange semester at Columbia University, Spring 2020

RESEARCH EXPERIENCE

Research Assistant for Prof. Decarolis (Bocconi, IGIER), Milan, Italy — *Nov 2022 - Jun 2023*
Topics: competition in digital markets

Research Assistant for Prof. Giustinelli (Bocconi, IGIER), Milan, Italy — *Oct 2021 - Jun 2022*
Topics: education policy and climate change

OTHER EDUCATION

Alliance Graduate Summer School, Paris, France — *Jun 2024*

Exchange student, **Columbia College**, New York, USA — *Spring 2020*

PROFESSIONAL EXPERIENCE

Teaching Assistant for undergrad International Trade, Columbia University — *Fall 2025 - Spring 2026*
Undergraduate course, Profs. Noor and Dingel

Committee for the Reform of Public Procurement Law, Rome, Italy — *Jul 2022 - Oct 2022*
Italian Council of State, *Assistant to Prof. Francesco Decarolis*

EU Commission, DG Economic and Financial Affairs, Bruxelles, Belgium — *Jun 2021 - Sep 2021*
Unit L.4 "Investment Programmes Management", *Trainee*

Private tutor for Macroeconomics, undergraduate level, Milan, Italy — *Oct 2022 - Dec 2022*

LANGUAGE AND IT SKILLS

Languages: Italian (native), English (proficient), German (intermediate)
Programming skills: Stata, Python, Matlab

Essay on research interests

My research agenda sits at the intersection of macroeconomics and innovation, with a focus on how the economy generates new ideas when research is inherently uncertain and learning is gradual. A motivating gap is that many macro growth frameworks treat innovation as a smooth function of R&D inputs, while the underlying process is closer to sequential experimentation: researchers choose among approaches with uncertain payoffs, update beliefs as evidence arrives, and reallocate effort in response to new information and competitive pressure. I am interested in bringing that micro-theoretic structure into macroeconomics in a way that preserves tractability, delivers clear welfare implications, and generates testable predictions about how market structure and policy affect the nature of innovation—not only its level.

A core pillar of my current project is to use a bandit-style framework to model research choice under uncertainty within an endogenous growth environment. Bandit models are attractive in this context because they formalize the idea that research effort has an "option value": pursuing uncertain projects is valuable not only because it may succeed, but because it generates information that changes future decisions. Embedding this logic into a macro setting provides a disciplined way to study how incentives and competition shape experimentation intensity, risk-taking in research, and the pace at which new technologies arrive. More broadly, this approach helps connect micro-level decision problems—how researchers learn, when they persist, and how they react to rivals—to aggregate outcomes such as productivity growth, the distribution of innovation types, and welfare.

Looking forward, I plan to expand this research program along two complementary dimensions. First, I want to explore how institutions and policies affect experimentation incentives in general equilibrium. Standard tools such as patent design, R&D subsidies, and competition policy plausibly shift the allocation between safer incremental work and riskier exploration. A bandit-based macro framework can make those margins explicit and help clarify when greater competition encourages exploration versus when it leads to duplication and short-termism.

Second, I aim to discipline the model with empirical findings from the empirical innovation literature. I am applying to the NBER Innovation Research Boot Camp because its multidisciplinary environment would directly support this second goal. Exposure to researchers who measure and study innovation from different angles would help me identify which empirical patterns are most robust and informative for theory, and translate those insights into a macro framework in a way that is both empirically grounded and meaningful for policy.