Mattias Nilsson
PhD Candidate, Department of Economics
European University Institute
Florence, Italy
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Dear Selection Committee,

I am writing to apply for the NBER Innovation Research Boot Camp 2026. I am a third-year PhD student in Economics at the European University Institute in Florence, Italy. I have completed all core PhD coursework and will complete my advanced coursework by the end of May 2026. I have not previously attended the NBER Innovation Research Boot Camp or the Entrepreneurship Research Boot Camp, and I would be very eager to participate for the first time.

My research examines the economics of science and innovation, particularly how scientific research funding generates knowledge spillovers that extend beyond direct recipients and translate into real-economy innovation. The boot camp represents an invaluable opportunity to deepen my understanding of innovation measurement, structural modeling approaches, and policy evaluation methods, while connecting with the international community of scholars working in this field. A detailed description of my current and future research is provided in the attached research essay, and an overview of my profile and coursework in my CV.

Professor Matthew Mitchell (Matthew.Mitchell@eui.eu), my secondary supervisor, has agreed to provide a confidential letter of recommendation on my behalf and will submit it directly to maranjian@nber.org by the February 12, 2026 deadline. Professor Mitchell recently joined the department but is closely familiar with my research.

Thank you for considering my application. I am excited about the opportunity to participate in this program and contribute to the boot camp community.

Sincerely,

Mattias Nilsson

RESEARCH STATEMENT

My research examines how public funding shapes scientific knowledge production and its translation into real-economy innovation, with particular focus on how these effects should inform research funding policy design.

In my current project with a fellow PhD student, we estimate the effect of scientific grants on both scientific output and commercial innovation, accounting for within-academic spillovers. Specifically, we study Italy's "Dipartimenti di Eccellenza" program, which awarded large, multi-year grants to a subset of shortlisted public university departments. We assemble a department-level panel for 2014–2022, combining administrative program data with publication records from OpenAlex and publication–patent linkages from Marx and Fuegi's "Reliance on Science" dataset. We map departments into a pre-treatment knowledge network using citation links (with complementary co-authorship evidence) to construct an exposure-based measure of indirect treatment.

Using a difference-in-differences design with exposure mapping, we measure each department's "indirect treatment" by its pre-treatment citation exposure to departments that later receive grants (excluding coauthor-linked citations to reduce mechanical channels). We find economically meaningful direct increases in high-impact publications and patent-linked outcomes for treated STEM departments. Crucially, estimated spillover effects are comparable in magnitude: departments with greater exposure to treated units experience sizeable publication gains over five years. Moreover, categorizing departments as upstream or downstream based on their proximity to patenting, we document a tradeoff: funding downstream units produces more immediate patenting, but downstream performance depends disproportionately on spillovers from upstream science. In ongoing work, we are building a quantitative model of knowledge production and diffusion to evaluate counterfactual allocations that maximize innovation under different policy objectives.

My future research agenda has two directions. First, I want to examine firm-level responses to scientific output: when is academic research a complement versus substitute for private R&D, and does science policy differentially affect incumbent versus younger innovators? Second, I plan to explore place-based innovation policy, building on recent work showing that innovative U.S. firms operate in too few locations and generate positive spillovers when opening R&D establishments in new places. I want to test whether this pattern holds in Europe and whether scientific grants (e.g., European Research Council awards) can induce innovative firms to establish R&D presence in underserved regions, potentially addressing spatial inequality in innovation capacity.

The Innovation Research Boot Camp would significantly advance my research agenda. I am particularly interested in deepening my understanding of innovation measurement, both capturing the use of science within firms and better identifying spillover channels beyond citation networks. I am also eager to learn how others are modeling science, R&D, and spillovers in structural frameworks, which would inform my ongoing work building quantitative models for science funding policy evaluation. Finally, I am excited to engage with the international innovation research community and connect with scholars working on related questions in this field.

MATTIAS NILSSON

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EDUCATION

European University Institute — Florence, Italy
PhD in Economics — *2023 –*
MRes in Economics — *2023 – 2024*

University College London — London, United Kingdom
MSc in Economics — *2018 – 2019*

University of Nottingham — Nottingham, United Kingdom
BSc in Economics and Econometrics — *2015 – 2018*

RESEARCH FIELDS

Primary: Economics of Science and Innovation
Secondary: Innovation Policy, Applied Microeconomics, Firm Dynamics

RESEARCH

"Allocation of Grants in Academia: Cascading Knowledge Within and Beyond the Ivory Tower"
(with Lorenzo Alderighi)

Abstract: This paper estimates the direct and spillover effects of scientific grants on both scientific output and commercial innovation. Using Italy's "Dipartimenti di Eccellenza" program, which awarded large multi-year grants to selected university departments, we employ an exposure-based difference-in-differences design that maps departments into a pre-treatment knowledge network through citation linkages. We find economically meaningful direct increases in high-impact publications and patent-linked outcomes for treated STEM departments. Crucially, estimated spillover effects are comparable in magnitude: departments with greater exposure to funded units experience sizeable publication gains over five years. We document a tradeoff where funding downstream departments near the patent frontier rapidly generates new patents, while grants to upstream departments generate larger spillovers on downstream scientific output.

WORK EXPERIENCE

King's College London — London, United Kingdom
Predoctoral Researcher — *Oct. 2021 – Aug. 2023*

European Central Bank — Frankfurt, Germany
Research Trainee — *Aug. 2020 – Jul. 2021*

European Commission Joint Research Centre — Ispra, Italy
Research Trainee — *Dec. 2019 – Apr. 2020*

SEMINAR AND CONFERENCE PRESENTATIONS

2026: Geography of Innovation Winter School (Pisa)

REFERENCES

Giancarlo Corsetti (supervisor)
European University Institute
Department of Economics
giancarlo.corsetti@eui.eu

Matthew Mitchell (supervisor)
European University Institute
Department of Economics
matthew.mitchell@eui.eu

MATTIAS NILSSON – PHD COURSEWORK

COMPLETED PHD COURSES

Core Courses (2023–2024)

Macroeconomics I	Russell Cooper
Macroeconomics II	Eduard Challe
Macroeconomics III	Alexander Monge-Naranjo
Microeconomics I	Laurent Mathevet
Microeconomics II	Özlem Bedre-Defolie
Microeconomics III	Andrea Mattozzi
Statistics and Econometrics I	Andrea Ichino
Statistics and Econometrics II	Alessandro Tarozzi & Fabrizia Mealli
Statistics and Econometrics III	Jesús Bueren
Mathematics for Economists	Antonio Villanacci

Advanced Elective Courses (2024–2025)

Heterogeneous Firms in Macroeconomics	Leo Kaas
International Macroeconomics	Giancarlo Corsetti
Statistical Approach to Macro Finance	Piotr Zoch
Life Cycle Heterogeneous Agents Models	Jesús Bueren
Technological Change and Inequality	Siyu Shi
Empirical Banking and Finance	Deyan Radev
Topics in Macroeconometrics	Barbara Rossi
Econometrics of Causality	Fabrizia Mealli
Estimation with DiD and Event Study	Alessandro Tarozzi
Demand and Pricing	Marc Rysman

CURRENT PHD COURSES (SPRING 2026)

Macro-Spatial Economics	Roberto Pancrazi
The Economics of Innovation	Matthew Mitchell

SHORT COURSES AND ADDITIONAL TRAINING

Network Econometrics Summer School	Italian Econometrics Association, June 2025
Network Analysis in Finance and Economics	Florence School of Banking and Finance, March 2021

DEPARTMENT
OF ECONOMICS

Matthew Mitchell
Professor and Chair in Microeconomics
Managing Editor, Journal of Industrial Economics

To whom it may concern,

I am writing this letter in support of Mattias Nilsson, who is applying for the the NBER Innovation Research Bootcamp. I have known Mattias since last semester, and I have become his dissertation advisor at the EUI. Mattias is a third year student, but well ahead of what I consider the usual progress of a third year student. He is on track to produce an excellent dissertation and is a great candidate for the Bootcamp.

Students at the EUI are very talented, as many of them would have gotten into first rate North American programs, but for one reason or another prefer Europe. The program here is very much like a North American program, but with a slightly different atmosphere; since PhD education is the entire mission, the building has only Economics researchers, which makes for a potentially productive environment.

Mattias has a paper that, at Toronto, was produced on the timetable of a "second year paper." His is at the very top (probably the top) of all second year papers I encountered at Toronto. Probably the best was by Tommaso Alba, who in turn produced an excellent dissertation and is now on faculty at KU Leuven. I see the same trajectory for Mattias.

His first paper is about how grants to science impact patenting. He measures both the direct effects and the indirect ones: imagine a math department receives a grant, and no patents cite the math papers, but many applied papers do, and in turn are cited by patents. He categorizes, in a data driven way, the basic and applied grants, and shows that these indirect effects from basic to patents via applied is as important as the impact on patents from applied grants. It is a nice paper and a first step to the larger structural paper which will comprise the rest of his dissertation, and likely his job market paper.

This makes him an idea candidate for the bootcamp. On the one hand, he has already produced real research and understands it. On the other, he is still formulating his eventual job market package, which is still years away. He would benefit greatly from learning more at the bootcamp as he embarks on this next stage. Further, although the program here is very international and follows a very North American structure, exposure to the North American community would of course be high value for him.

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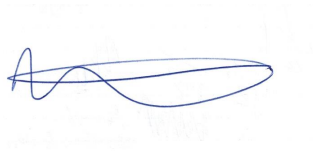
EUI DEPARTMENT OF ECONOMICS

On a separate point, Mattias is an excellent student on simple objective measures, and a mature researcher especially for his point of study. He is also an outgoing person. I have only been at EUI a short time and we have connected right away, due to his initiative. He would provide great externalities to other attendees.

I recommend Mattias most highly for the bootcamp. He is among the very best students I have seen at this stage, and is at exactly the right time to benefit from the bootcamp.

Please feel free to contact me if you have further questions.

Sincerely,



Matthew Mitchell

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