NBER Innovation Research Bootcamp 01/30/2025
National Bureau of Economic Research
1050 Massachusetts Avenue
Cambridge, MA 02138

Dear Selection Committee,

I am writing to apply for the NBER Innovation Research Boot Camp this upcoming summer. I am Franco Malpassi, a third year Economics PhD student at Northwestern University specializing in Innovation Economics and Economic History. Attached to this cover letter, you should find my application essay, my CV, and a list of all my completed PhD courses, as requested in the call for applications. My recommendation letter will be provided by Prof. Joel Mokyr, who is my main advisor.

I am very excited about the possibility of participating in this boot camp and engaging with researchers at the forefront of innovation and the science of science. As a graduate student, I have found that my research interests and current projects fit best in the field of Innovation Economics, where I frequently use rich historical contexts to answer key questions. One of my current research projects studies the role of a breakthrough technological innovation, the invention of the digital computer, in impacting the direction of scientific research. Another research project studies the how access to knowledge and formal education can shape innovations. In the future, I plan to apply tools from the field of Industrial Organization, my third completed field sequence, and tackle questions studying the role of innovation as both a determinant and outcome of market power for firms.

My current and future research projects are motivated by the idea that technological change and scientific discovery are key determinants of modern progress, especially in the economy. I aspire to make significant contributions to our understanding of how original inventions and ideas are generated and then translated into economic progress, and how we can support such processes through better policy. Taking part in this boot camp, I believe, will take me a step closer in this direction.

Thank you for your time and consideration. I appreciate the opportunity to apply and look forward to hearing back from you.

Sincerely,
Franco Malpassi

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Application Essay

Franco Malpassi, PhD Candidate in Economics, Northwestern University

I am a third year Economics PhD student working on research at the intersection of Innovation Economics and Economic History. My current research makes use of historical contexts to explore the relationship between science and technological innovations. In an ongoing research project, I study how technological breakthroughs can impact and push scientific research, and in another project, I examine how access to scientific knowledge can act as a key input for the development of high-quality inventions. In future work, I plan to use tools from Industrial Organization to study the role of research and development as sources of market power for firms and how policy can alter the trajectory of innovations.

In my main current project, coauthored with my classmate Pedro Aldighieri, we examine how technological changes can impact scientific research. Specifically, we study the effect of the introduction of early digital computers to US universities during the mid-twentieth century on scientific research, particularly on the rise of physical sciences and STEM fields. The technological change brought about by computers to universities represented a drastic reduction in the cost of performing computationally intensive tasks for researchers and, importantly, these machines were only accessible through institutional affiliation. To study the effect of computer adoption, we create the first comprehensive database of computer installations to US universities, covering over 150 institutions from 1945 to 1970, which we then combine with data on publications from OpenAlex. Using our novel database of computer installations, we leverage the staggered adoption of computers in an event-study design. Preliminary results show that installation of the first computer at universities led to a sharp increase in both the usage of computer technology in research as well as total academic output from the university. In ongoing work, we are studying effects of computer adoption on researchers' career trajectories, shifts in specific fields and the overall direction of scientific research.

In a joint project with Walker Hanlon, we study how access to scientific education and knowledge can shape inventions and their quality. To study this question, we focus on the expansion of scientific education and access to knowledge brought by the Mechanics' Institute Movement in Great Britain in the early 1800's. Mechanics' Institutes, the precursors of technical colleges, were educational establishments founded with the aim of providing free or low cost technical and scientific education to mechanics and engineers, and to the public in general. Preliminary descriptive evidence shows that the nineteenth century also saw an increasing overlap between published scientists and inventors as well as measurably higher quality inventions, denoting a growing interaction between scientific research and technical inventions. Using geographic- and time-varying exposure to Mechanics' Institutes, we plan to study the effect of enhanced access to scientific education on inventors and the quality of their patents to shed light on the benefits of expansionist educational policies for technological innovation.

While my current research focuses on science and its connection to innovation, my future research plans encompass innovation more broadly. I am particularly interested in exploring the relationship between successful market innovations in firms and market power, as well as the potential role of antitrust enforcement in shaping these processes. Taking part in the Innovation Research Boot Camp will expose me to valuable perspectives from peers and from experts in the field, broadening the scope of my research and allowing me to make stronger contributions to Innovation Economics.

Franco Malpassi

Contact Information

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Evanston, IL 60208

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E-mail: francomalpassi@u.northwestern.edu

Education

Northwestern University *2022 - present*
PhD in Economics

Universidad de San Andres *2019 - 2020*
M.A. in Economics

Universidad de San Andres *2015 - 2018*
B.A. (*summa cum laude*) Economics

Fields

Economic History, Innovation Economics, Industrial Organization

References

Prof. Joel Mokyr
Northwestern University
j-mokyr@northwestern.edu

Prof. Walker Hanlon
Northwestern University
whanlon@northwestern.edu

Prof. Ryan Hill
Northwestern University
ryan.hill@kellogg.northwestern.edu

Works in Progress

"Computer Adoption and the Evolution of Science" with Pedro Aldighieri

"Attitudes and Policies toward Refugees: Evidence from Low- and Middle-Income Countries" with Cevat Giray Aksoy and Thomas Ginn

Research Experience

RA to Prof. Joel Mokyr *June 2023 - June 2024*
Northwestern University

RA to Profs. Cevat Aksoy and Thomas Ginn *Feb 2021 - Aug 2022*
King's College (remote)

RA to Prof. Nicolas Ajzenman *Oct 2019 - Dec 2020*
Sao Paulo School of Economics - FGV (remote)

Teaching Experience

TA for US Economic History (undergraduate) *Winter 2025*
Prof: Jesse McDevitt-Irwin - Northwestern

TA for Intro to Micro (undergraduate) *Fall 2024*
Prof: James Hornsten - Northwestern

TA for Economic History (undergraduate) *Spring 2020*
Prof: Tomas E. Murphy - UdeSA

TA for Industrial Organization (undergraduate) *Fall 2019*
Prof: Joaquin Coleff - UdeSA

Awards and Scholarships

Price Theory Summer Camp — *2024*
University of Chicago BFI

Gold Medal for Highest Rank — *2018*
Universidad de San Andres

Merit Scholarship — *2016 and 2018*
Universidad de San Andres

Department Service

Organizer, *Economic History Advising Group* — *2024*

Mentor, *First Year Economic PhD Students* — *2023 - 2024*

Additional Information

Programming: STATA, Python, R, QGIS

Languages: English (fluent); Spanish (native)

Courses Taken During PhD

Franco Malpassi
Northwestern University

Fall 2022

- ECON 410-1 Microeconomics - Grade: A-
- ECON 411-1 Macroeconomics - Grade: A
- ECON 480-1 Econometrics - Grade: A-

Winter 2023

- ECON 410-2 Microeconomics - Grade: A
- ECON 411-2 Macroeconomics - Grade: A
- ECON 480-2 Econometrics - Grade: A-

Spring 2023

- ECON 410-3 Microeconomics - Grade: A-
- ECON 411-3 Macroeconomics - Grade: B+
- ECON 480-3 Econometrics - Grade: A-

Fall 2023

- ECON 420-1 American Econ History - Grade: A
- ECON 425-1 Development Economics - Grade: A
- ECON 450-1 Industrial Organization - Grade: A

Winter 2024

- ECON 420-2 European Econ History - Grade: In progress
- ECON 450-2 Industrial Organization - Grade: A
- MECS 548-0 Innov Econ/ Science of Science - Grade: A

Spring 2024

- ECON 450-3 Industrial Organization - Grade: A
- ECON 481-3 Advanced Econometrics - Grade: A
- MECS 570-2 Economics of Organizations II - Grade: A

Fall 2024

- MECS 549-1 Technology and Innovation Econ - Grade: A

NORTHWESTERN UNIVERSITY

Judd A. and Marjorie Weinberg College of Arts and Sciences

Joel Mokyr
Robert H. Strotz Professor of Arts and Sciences
Professor of Economics and History

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January 25, 2025

Brett Maranjian
NBER

Dear Brett:

I am writing in support of *Franco Malpassi* who has applied to the NBER summer bootcamp in the Economics of Innovation in 2025. Franco is a 3rd year student in our Ph.D. program in economics at Northwestern University in excellent standing. He has done well in our theory and applied courses, but these tend to be as abstract as they are rigorous and do not deal much with innovation, and for the applied work he plans to do for his dissertation in economic history, the NBER bootcamp in innovation would be perfect.

The project he is currently working on concerns the effect of technology on science (as opposed to the more common channel that works in the opposite direction). Joint with another graduate student, Pedro Aldighieri (who is also applying) they have collected a completely new database of the installation of computers into research universities in the 1950s and 1960, and measuring their effect on research by looking at the impact of buying a university computer compared to similar institutions that had not done so yet. This involves complex identification issues, since the effect of the installation of a computer needs to be separated from other factors that may have determined the timing of buying a mainframe machine and also affected publication quality.

Yet a carefully specified difference-in-difference methodology is deployed here that will measure the exact impact of both the quantity and quality of the ensuing publications, as well as the impact on the fields in which papers were published. The importance of this work is self-evident: we have long known that the technology and tools of research affect the growth and direction of scientific research, and the paramount importance of computers in research is self evident. That said, actually measuring it, areas by area and in the early days of mainframe computers, will be extremely valuable in understanding the history of the computer as well as the growth of science in the second half of the twentieth century.

Franco is primarily an economic historian interested in innovation, and the bootcamp (for which I lectured a few years back) would be of enormous use to him in his research in the next few years.

Sincerely yours,



Joel Mokyr

JM/jm