Alejandro Raga Espinosa
PhD Candidate
Faculty of Economics, University of Valencia
Av. dels Tarongers, s/n
46022 Valencia, Spain
Email: alejandro.raga@uv.es

February 2026

Dear Members of the Selection Committee,

I am writing to apply for the NBER Innovation Research Boot Camp. I am a PhD candidate in Economics at the University of Valencia, currently in the third year of my doctoral studies. My research focuses on the economics of innovation, particularly on corporate science, firm R&D, and the empirical measurement of scientific and technological outcomes.

Throughout my PhD, I have become increasingly interested in understanding why some firms invest in scientific research and how this engagement shapes scientific progress and technological performance. My current work involves constructing and analyzing large-scale datasets linking European firms to scientific publications and patents.

For me, the Boot Camp represents an opportunity to refine the conceptual framework and the econometric foundations of my research, and to receive feedback at a crucial stage of my PhD. I am particularly eager to engage with scholars whose work has directly influenced my own ideas. I am sure that having this opportunity would largely improve the clarity and rigor of my research agenda. Furthermore, I am also motivated by the opportunity to exchange ideas with other early-career researchers working on related topics.

A letter of recommendation will be provided by Prof. Oscar Llopis (University of Valencia & University of Gothenburg). I also enclose my updated CV, and a brief essay describing my current and future research interests, as well as my main motivation to attend the bootcamp.

Thank you very much for your consideration. I would be grateful for the opportunity to participate in the 2026 NBER Innovation Research Boot Camp.

Sincerely,

Alejandro Raga Espinosa



Alejandro Raga

University of Valencia
Department of Business Management
Faculty of Economics
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46071 Valencia, Spain

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Personal

Born on January 5, 1998.

Spanish citizen.

Education

Ph.D. Business Management, University of Valencia, 2024–2027 (expected)

M.S. in Economics, University of Valencia and University Jaume I, 2022–2023

B.S. in Economics, University of Valencia, 2018–2022

Doctoral Training

Qualitative Research Methods

Quantitative Research Techniques I: Multivariate Analysis

Quantitative Research Techniques II: Structural Equation Modeling

Research Theories in Business Management

General Research Skills for PhD Students

Critical Analysis of Scientific Literature (PhD General Training Courses, University of Valencia)

External Training

DRUID Academy; various lectures on innovation (Andrea Mina, Frank Neffke) (2025)

REGIS Summer School; various lectures on innovation (2024)

Other courses (2024–2025)

Python for Data Science (University of Valencia)
Course on Statistical Sample Size Calculation (University of Valencia)

Research Interests

Economics of Innovation

Economics of Science

Corporate Science

Innovation Policy

Public procurement and R&D

Research and Language Skills

1. **Econometrics:**

   GLS, panel data, time series, Instrumental variables Causal inference methods (difference-in-differences, regression discontinuity, matching, etc.) and macroeconometrics.

2. **Data & Programming Skills:**

   Python (Pandas, NumPy, Scikit-learn, etc.) Docker, HTML and CSS. Fundamental web-scraping skills (BeautifulSoup), API usage, Database management (PostgreSQL)

3. **Research Domains:**

   Theoretical knowledge in microeconomics, macroeconomics, energy economics, electricity markets, national innovation systems, public procurement & corporate R&D processes.

Languages: Spanish (mother tongue), Catalan (mother tongue), English (fluent)

Employment

Current. *Ph.D. Candidate*, Department of Business Management, University of Valencia, Spain.

Conferences and Seminar Presentations

2025

Raga, A., Llopis, O. "The Evolution of Corporate Science in Europe: Characterizing Publication Patterns and Scientific Novelty", Open Innovation in Science (OIS) Conference, Vienna (Austria), May 14–16, 2025.

Raga, A., Llopis, O. "What about the R in R&D? Mapping Corporate Science in the European Pharmaceutical Industry", Workshop on Healthcare and Medical Innovation (WOMI), Valencia (Spain), November 2025.

Raga, A., Llopis, O. "Corporate Science in Europe: Characterizing Publication Patterns", INGENIO PhD Days, Valencia (Spain), April 2025.

Raga, A., Llopis, O. "Corporate Science in Europe: A Study on Publication Patterns", DRUID Academy 2025, Copenhagen (Denmark), January 16–18, 2025.

2024

Raga, A. "Exploring Information Flows on Citizen Science Projects". REGIS Summer School 2024, Madrid (Spain). June 2024

Teaching Activities

Teaching experience

2024–2025. Fundamentals of Business Management, University of Valencia (BSc level).

References

Oscar Llopis. Full Professor. University of Valencia, Spain
Department of Management. E-mail: oscar.llopis@uv.es

Pablo D'Este. Tenured Scientist. INGENIO (CSIC-UPV), Spain
Spanish Council of Scientific Research. E-mail: pdeste@ingenio.upv.es

Last updated: February 12, 2026

Alejandro Raga Espinosa
PhD Candidate
Faculty of Economics, University of Valencia, Spain

February 2026

Dear Members of the Selection Committee,

I am writing to apply for the 2026 NBER Innovation Research Boot Camp. My name is Alejandro Raga Espinosa, and I am a PhD candidate at the University of Valencia, currently entering the third year of my doctoral studies. I have a background in theoretical economics, management and quantitative methods.

My research focuses on the economics of innovation, with particular interest in the role of firms as producers of scientific knowledge and in the empirical evaluation of innovation-related outcomes. In particular, I am interested in understanding corporate science in Europe, defined as scientific research conducted and disclosed by for-profit firms (Rotolo et al., 2022). As part of this work, I have built a large-scale dataset linking more than 7,000 European publishing firms to over one million scientific articles (OpenAlex), combined with firm-level characteristics (Orbis), patent data (PATSTAT) and scientific novelty (SciSciNet).

Using these data, I have started to study variation in corporate scientific activity across institutional contexts, industries, and firm types, as well as differences between corporate and academic research in terms of novelty and knowledge recombination. My future research aims to better identify the causal mechanisms linking corporate science to innovation outcomes. Existing studies show that firms engaged in corporate science tend to have stronger R&D performance and more valuable intellectual property (Arora et al., 2018), but less is known about how these effects depend on firm capabilities, organizational structure, or exposure to public science. I am interested in exploring how changes in incentives, regulation, or access to scientific labor affect firms' scientific and technological trajectories. These questions are closely related to recent work developed by some of the NBER Innovation Research Boot Camp participants, such as P. Azoulay, K. Myers or B. Jones on incentives, careers, and the production of knowledge. Relatedly, I am interested in innovation policy, especially the role of the state in shaping technological development in contexts such as economic defense and crisis response (Belenzon & Cioaca, 2025; Chatterji & Murray, 2025).

In spring 2026, I will be visiting PhD researcher hosted by Professor Ashish Arora at the Fuqua School of Business, Duke University. I expect this visit to advance my work on corporate science. The participation in the NBER Boot Camp would be a career-changing experience for me, as it would help me to sharpen my research questions and empirical strategies, as well as to receive feedback from scholars whose work has deeply influenced my research interests and future agenda. If selected, I would view the NBER Boot Camp as an opportunity to learn and contribute to discussions at the frontier of innovation research.

Thank you very much for your consideration.

Sincerely,

Alejandro Raga Espinosa



VNIVERSITAT DE VALÈNCIA
Facultat d' Economia

Oscar Llopis
Full Professor
Faculty of Economics, University of Valencia (Spain)
Visiting Research Fellow, University of Gothenburg (Sweden)
oscar.llopis@uv.es

Valencia, February 9, 2026

Dear Members of the Selection Committee,

I am pleased to recommend **Alejandro Raga**, whom I supervise as a PhD student at the University of Valencia, for the upcoming NBER Innovation Research Boot Camp. Alejandro is currently starting the third year of his PhD, which makes this an ideal moment for him to consolidate his research agenda and benefit from his participation in the Boot Camp.

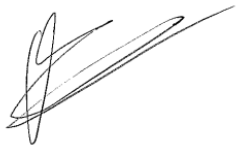
His research focuses on *corporate science in Europe*, examining why firms publish scientific research, how scientific disclosure varies across countries and sectors, and whether corporate science contributes novel scientific knowledge. His research agenda engages with important debates on corporate R&D and science–industry linkages, and addresses empirical gaps beyond the US context.

A distinctive feature of Alejandro's profile is his remarkable ability to independently construct and manage large-scale datasets. He has developed an original database linking more than one million scientific articles to over 7,000 European firms, integrating OpenAlex, ROR, Orbis , PATSTAT, and SciSciNet, among other datasets. He has already presented preliminary findings of his work at important international venues, such as the DRUID Academy Conference (Copenhagen, 2025) or the Open Innovation in Science (OIS) Conference (Vienna, 2025).

Further evidence of Alejandro's potential is his upcoming research visit from March to June 2026, hosted by **Professor Ashish Arora**, Full Professor at the Fuqua School of Business, Duke University (Durham, NC).

For all of the above, Alejandro would greatly benefit from the NBER Innovation Research Boot Camp, and would be a well-prepared and active participant. I recommend him without reservation.

Sincerely,



Oscar Llopis
Full Professor
Faculty of Economics, University of Valencia (Spain)
Visiting Research Fellow, University of Gothenburg (Sweden)