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Dear Sir or Madam, February 6, 2025

I am writing to you to express my interest in participating in the NBER Innovation Research Boot Camp 2025. I recently handed in my PhD thesis in Economics at the University of Hamburg, where I specialised in environmental economics. My research so far has focused in two disciplines, namely behavioral economics and innovation studies. During my PhD, I was supervised by Prof. Andreas Lange (who is my reference for this application).

During my studies, I have found a passion for the study of innovation and metascience, in particular the impact that policies can have in fostering technological and scientific advances. In the last two years of my PhD, I have concentrated on the study of innovation activities by using quasi-experimental methods to analyse patent data, especially to study the effect of environmental policies on green technologies. During this time, I also attended the "Economics of Ideas, Science, and Innovation" PhD course offered by the Institute for Progress, where I gained insightful knowledge about state-of-the-art research on innovation studies and metascience, both from a theoretical and empirical point of view.

I am drawn to this boot camp due to the opportunity that it offers to deepen my knowledge in innovation studies and to get to know young, like-minded colleagues working in the field. I already had the chance of attending presentations from some of the faculty (e.g. Pierre Azoulay, Ina Ganguli or Heidi Williams), and I found their work and passion for the topic to be an excellent motivation to pursue a research career in innovation. I am particularly interested in getting to know fellow junior researchers working on the topic to discuss and exchange ideas, as well as potentially find common interest to work on joint projects in the future.

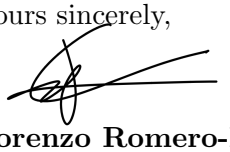
As part of my studies, I have gained experience with experimental and survey designs, as well as with quasi-experimental methods and large-scale databases. I am particularly proud of the joint research we did with the University Klinikum-Eppendorf, where we studied how to improve participation rates and representativity of participants in a large-scale health survey. I have also become proficient using Stata for data analysis and I am familiar with R and Python, as well as working with databases such as EPO's PATSTAT, Bureau van Dijk's Orbis and the German Socioeconomic Panel SOEP. I am currently working on submitting the last chapter of my dissertation to a journal, where I analyse the effect that Germany's 1999 Eco-tax reform had on green innovation.

At the University of Hamburg, I have been a tutor of different Microeconomics courses and taught specialised seminars on behavioral and environmental economics, as well as supervising bachelor's and master's theses. This has increased my confidence in my communication and organisational skills. I especially enjoy working in teams of like-minded colleagues, as the constant and frequent exchange of ideas inspire me to explore new approaches and improve my work. Lastly, I made a research stay at the London School of Economics to work on the solo-authored project of my dissertation, where I gained insightful notions about green innovation.

I am confident that my research expertise, my breath of interests in technology and science, and my interdisciplinary background makes me an ideal candidate for this boot camp. I would appreciate the chance to discuss in more depth about my experience and interests with you.

I am looking forward to hearing from you soon.

Yours sincerely,



Lorenzo Romero-Fernández

Research interests, Lorenzo Romero-Fernández

I want to devote my research career to better understand how innovation takes place, both from the scientific and technological side, with the ultimate goal of understanding the role of the public sector on nurturing innovation. In particular, I am interested in how to foster innovation that can address pressing issues such as (but not limited to) climate change. As a trained biotechnologist, I have always felt fascinated by scientific advances in biology and biomedicine and the possibilities that they open, e.g. for the development of new medicines or materials. As an economist, I understand that the main drivers of long run economic growth are technological and scientific development. I would like to improve our understanding of how these developments happen, in order to promote and foster new advances.

I have previously worked in projects in behavioral economics and innovation studies. Regarding the former, I worked in two projects involving public good games in a lab setting and in one survey-based project that aimed to evaluate how informational interventions can improve both the rate of participation in health surveys and the representativity of the individuals taken part in them. Regarding innovation studies, I have worked on different projects evaluating the effects of environmental policies on innovation. In one of them, I studied the heterogeneous effect that carbon pricing has on firms' innovation activities. A second one was a large-scale analysis of what combinations of environmental policies have most consistent positive effect on green innovation.

The following are two examples of projects that I would like to work on in the future relating to these interests. The first one is a project where I plan to work on is to evaluate the effect that President Bush' 2001 presidential ban on the use of NIH funds for embryonic stem cell research had on research stem cell output in the US. This decision was opposed by both the Republican and the Democrat parties, and it was not part of the political program that the president run with, what makes this ban a credible exogenous shock to the US research landscape. This ban was enforced until 2009, when President Obama lifted it. I plan to evaluate the (negative) effect that this ban had on US embryonic stem cell research output, with a special focus on how US researchers adapted to the ban. Secondly, the lift of the ban gives a perfect opportunity to study how (or even if) US researchers caught up with international researchers in the field after the ban was lifted. This could shed some light in how science and know-how diffuse and spill over to lagging countries – a kind of Convergence Hypothesis applied to scientific development.

The second project I plan to conduct is a joint collaboration with a colleague, where we want to study what is the role that a multidisciplinary inventor plays inside of a R&D team. There have been many discussions on how it is increasingly difficult and time-consuming for experts to arrive and stay at the frontier of knowledge. One solution to this might be to explore new research avenues by mixing expertise and results from different fields. The recombinant growth theory states that the more ideas a researcher has access to, the higher are the potential combinations that she can make to develop new, second-generation ideas. Therefore, we want to study whether multidisciplinary inventors can increase innovation outputs by contributing to R&D teams made by single-discipline experts.

I believe that the NBER Innovation Research Boot Camp is a perfect opportunity for learning about the frontier of knowledge in the fields of innovation studies and metascience. The line-up of lecturers includes some of the most important experts in these fields, and I would benefit enormously from the opportunity of learning from them. I would also like to discuss ideas with fellow junior researchers, to share our interests and learn from each other, as well as finding colleagues with whom to work together in future joint projects. Finally, I think that other researchers could also benefit from my ideas and comments, as I have a relatively uncommon direct insight of how science works from the inside due to my background in natural sciences.

Lorenzo Romero-Fernández

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Current position

PhD Candidate
Department of Economics, University of Hamburg, 2020 - to date
Supervisors: Prof. Andreas Lange (main supervisor) and Prof. Moritz Drupp
Main topics: Environmental Economics, Innovation, Behavioral Economics

Education

MSc. in Economics
University of Konstanz (Germany), 2017 - 2019
Thesis: "Financial Crisis and Crime: The Case of Southern Spain."

BSc. in Biotechnology
University of Salamanca (Spain), 2013-2017
Thesis: "Study of the localization and activity of a newly-developed CarO fusion protein."

Research stay

London School of Economics
Department of Geography and Environment, 09-12/2023
Host: Dr. Eugenie Dugoua

University of Bremen
Faculty of Business Studies and Economics, 09/2024 - to date
Host: Prof. Torben Klarl

Exchange stay

ERASMUS, Two semesters
Julius-Maximilians-Universität Würzburg (Germany), 2016-2017
Internship under Dr. Ulrich Terpitz for thesis' research and writing.
Short research under Prof. Dr. Thomas Dandekar for a bioinformatic research project.

References

Prof. Andreas Lange, University of Hamburg
andreas.lange@uni-hamburg.de

Prof. Moritz Drupp, University of Hamburg
moritz.drupp@uni-hamburg.de

Working Papers	*Heterogeneous effects of carbon taxation on green innovation* *Weakest links in space – On the voluntary provision of public goods in overlapping neighborhoods* (w/ A. Lange) (R&R, under review) *A good neighbor – a found treasure: on the voluntary public good provision in overlapping neighborhoods* (w/ J. Koch, A. Lange)
Work in Progress	*Attributing Increases in Green Patenting to Disruptive Innovation Policies* (w/ P. Klösel, N. Koch, L. Menicacci, N. Rochowicz, A. Stechemesser) *Taking part in research and transfer: motivation and obstacles of low-SES individuals* (w/ A. Lange, C. Schwirplies) *Can you engineer a Silicon Valley? Long-run effects of BioRegio initiative on innovation* (w/ S. Badini)
Presentations	**2024** CESifo/ifo Junior Workshop on Energy and Climate Economics, *Munich* REGIS Summer School, *Madrid*; EAERE Annual Conference, *Leuven* **2023** EAERE Annual Conference, *Limassol*; Environmental and Resource Economics (AURÖ) Workshop, *Hagen*; "The role of public research and innovation measures on mitigating climate change" Workshop, *Kiel*. **2022** ECORES Summer School, *Leuven*.; EAERE Summer School on "Behavioral Enviromnetal Econmics", *Graz*; ZEW workshop on Experimental Economics for the Environment, *online*.
Funding, grants	Landesinnovationsförderung Fördermaßnahme: Science for Society, State of Hamburg, "Ökonomie plus Medizin! Die Hamburger Gesundheitsforschung öffnet sich" (*Economy plus medicine! Hamburg's health research opens up*) - Contributing author, 2022-2023
Teaching	**Courses - Program** Microeconomics for Business Administration - BSc. in Business Administration Microeconomics II - BSc. in Economics Individual Decisions, Games and Markets - MSc. in Economics Seminars - BSc. in Economics *(Topics: environmental economics, behavioral economics, charitable behavior)* **Bachelor's and Master's thesis supervision** Supervision of four bachelor's and one master's theses in Economics.
Work experience	**Student assistant, University of Konstanz** 11/2017 - 01/2018, 04/2018 - 09/2019 HiWi, Dept. of Economics, of Biology and Limnological Institute Different positions as student assistant, among others, IT support and lab assistant.
Research interests	Environmental Economics, Innovation, Behavioral Economics, Spatial Economics, Machine Learning.
Languages	Spanish (native), English (fluent), German (conversational), French (basic), Italian (basic).
Skills and databases	Stata (advanced), R (intermediate), Python (intermediate), LaTeX(advanced), Machine Learning (basic). Orbis Global, Orbis IP, PATSTAT, SOEP.

My Profile

Participant's Major Subject: –

Any questions about the WiSo Graduate School or courses at the WiSo faculty? Graduate_School@wiso.uni-hamburg.de

Any questions about the MIN Graduate School or courses at the MIN faculty? geventis-min@uni-hamburg.de

Course in Your Major Subject or Doctoral Program

Course	Type of Course	Semester	Subject Area	Number of Semester Hours	Number of CP	Semester Hours/CP recognized?

No entries could be found.

General Academic Skills (Keyskills)

1 - **3** von **3** Entries per page 10 **30** 100

Course	Type of Course	Semester	Subject Area	Number of Semester Hours	Number of CP	Semester Hours/CP recognized?
Academic Writing Workshop for PhD Candidates	–	SoSe 22	WiSo key competences		1	Yes
The Path from Thesis to Journal Article: A Skills Workshop on Academic Publishing	workshop	SoSe 24	WiSo key competences		0.5	Yes
Advances in Environmental Economics	–	SoSe 23	WiSo key competences	2	4	Yes
Total Creditable Semester Hours/CP			2	5.5		

1 - **3** von **3** Entries per page 10 **30** 100

Additional Academic Performances

1 - **13** von **13** Entries per page 10 **30** 100

Course	Type of Course	Semester	Subject Area	Number of Semester Hours	Number of CP	Semester Hours/CP recognized?
WiSo-How to write Stata code for easy replication of results	–	WS 21/22		1	2	No
Advances in Environmental and Resource Economics	seminar	SoSe 24		2	4	No
Ph.D. Seminar in Empirical and Theoretical Economics	seminar	SoSe 24		1	2	Yes
Model-based and empirical approaches in economic policy-making	–	SoSe 22		2	4	Yes
Ph.D. Seminar in Empirical and Theoretical Economics	seminar	SoSe 23		1	2	Yes
Advances in Environmental and Resource Economics	seminar	SoSe21		2	4	Yes
Numerical Methods and Practical Skills for Computational Physics-Part I (IMPRS UFAST focus course)	block	WS 22/23		1	1	Open
Advances in Environmental and Resource Economics	–	WS 20/21		2	4	Yes
Opinion Dynamics in Social Networks	workshop	SoSe21		2	4	Yes
Ph.D. Seminar in Empirical and Theoretical Economics	–	WS 21/22		1	2	Yes
Quantitative Text Analysis using R and quanteda	seminar	SoSe21		2	4	Yes
Social Preferences and the Demand for Redistribution - Experimental Methods and Evidence	seminar	WS 21/22		2	4	Yes
Advances in Environmental Economics	seminar	SoSe 20		2	4	Yes
Total Creditable Semester Hours/CP			17	34		

1 - **13** von **13** Entries per page 10 **30** 100

Open/Rejected Applications for Recognition of Academic Performances

Course	Type of Course	Provider	Status

No entries could be found.

Universität Hamburg
DER FORSCHUNG | DER LEHRE | DER BILDUNG

FAKULTÄT
FÜR WIRTSCHAFTS- UND
SOZIALWISSENSCHAFTEN

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Prof. Dr. Andreas Lange

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06.02.2025
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Letter of support for Lorenzo Romero-Fernández – Application to NBER bootcamp

Dear colleagues,

I am very happy to support Lorenzo Romero-Fernández' application for the NBER innovation bootcamp 2025. Lorenzo is about to defend his PhD here at University of Hamburg. I am serving as Lorenzo's main advisor and thus am familiar with his research. Lorenzo is also employed at my chair as research and teaching assistant. I have and excellent impression of him.

In his work, Lorenzo shows a passion for empirical as well as experimental approaches. He is particularly interested in analyzing micro data and analyzing policy-relevant questions. His main focus is on innovation activities. In one paper in his dissertation he considers the effect of policy changes on green innovation. He exploit the German ecological tax reform from 1999 to identify the impacts on innovation activities (filed patents). He carefully distinguishes the effects on transportation vs. energy related activities as the tax was imposed primarily on these two sectors. With this research interests, I consider Lorenzo an excellent candidate for the boot camp.

Lorenzo has excellent expertise in both empirical and experimental methods. His dissertation is complemented by to experimental papers on spatial aspects of cooperative decision-making. He extends the literature on voluntary contributions by a novel spatial context of overlapping neighborhoods. This work fits well with his interest in spatial econometrics which he also can leverage in ongoing empirical work.

Lorenzo is a knowledgeable young economist driven by a strong desire to investigate policy-relevant empirical research question. He has the methodological skills needed to do interesting empirical work and the keen interest in having impact and dealing with actual policy and institutional contexts.

Lorenzo will tremendously benefit from participating in the NBER boot camp and I highly recommend that you have a close look at Lorenzo's application.

If you desire further information, please do not hesitate to contact me (andreas.lange@uni-hamburg.de).



Prof. Dr. Andreas Lange