

# ALEXANDER LEHNER

Becker Friedman Institute  
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## EMPLOYMENT

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from July 2022: Postdoctoral Scholar, Development Innovation Lab  
Becker Friedman Institute for Research in Economics, University of Chicago

## DOCTORAL STUDIES

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2021-2022: Research Fellow in Economics (Assegnista di Ricerca), University of Bologna  
2021: Visting Researcher, University of Chicago (Center for Spatial Data Science, Prof. Anselin)  
2015-2021: PhD in Economics, University of Bologna  
"Essays in Long-run Development and Spatial Economics"  
External Committee: David N. Weil (Brown), Klaus Desmet (SMU)  
2018: Visiting Research Fellow, Brown University

## PRE-DOCTORAL STUDIES

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2012-2015: MSc Economics, Vienna University of Economics and Business (WU Vienna)  
Supervisor: Prof. Jesús Crespo Cuaresma  
2013: Seoul National University, South Korea (visiting student)  
2013-2015: BSc Mathematics, University of Vienna (temporarily interrupted at ~50%)  
2007-2012: BSc Business Administration (Statistics & Finance), WU Vienna

## REFERENCES

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**Prof. Matteo Cervellati**  
University of Bologna  
Piazza Scaravilli 2  
40126 Bologna  
[m.cervellati@unibo.it](mailto:m.cervellati@unibo.it)

**Prof. David N. Weil**  
Brown University  
64 Waterman Street  
Providence, RI 02912  
[david\\_weil@brown.edu](mailto:david_weil@brown.edu)

**Prof. Klaus Desmet**  
SMU Dept of Economics  
3300 Dyer, Suite 301  
Dallas, TX 75205  
[kdesmet@smu.edu](mailto:kdesmet@smu.edu)

## TEACHING AND RESEARCH

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Primary Fields: Applied (Spatial) Econometrics, Development Economics,  
Spatial Economics / Economic Geography  
Secondary Fields: Economic History, Urban & Regional Economics

## HONORS, AWARDS (Travel & participation grants, see next page)

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2021: Marco Polo scholarship for visiting the University of Chicago (c.USD5.000)  
2018: Winner of biennial RSAI Young Researcher Prize (Regional Science Assoc.) (EUR600)  
2017: Marco Polo scholarship for visiting Brown University (c.USD10.000)  
2015: Full scholarship for doctoral studies, Italian Government  
2013: Grant for overseas studies in South Korea

## RESEARCH GRANTS

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- 2022: PRIN (Italian Ministry of Education, University and Research)  
 [EUR 328.000] Core member of team, PI: Matteo Cervellati.  
 Project on long-term development in Europe

## TEACHING

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- 2022/23: **Spatial Regression Analysis**, SOCI 20559  
 One guest lecture on spatial treatment effects (Prof. Anselin), UChicago
- 2020/21: **Comparative Development, Institutions, and Demography**, 15h PhD course  
 One lecture on struct. estimation (Prof. Cervellati), University of Bologna
- 2020/21: **Senior TA Microeconomics**, (Graduate, International Studies)  
 Instructor: Prof. Luppi, Johns Hopkins University - SAIS
- 2018/19: **Advanced GIS Analysis**, 15h PhD course  
 Co-taught with Prof. Giovanni Prarolo, University of Bologna
- 2018/19: **GIS Tools Laboratory**, 15h course (Graduate, LMEC)  
 Co-taught with Prof. Giovanni Prarolo, University of Bologna
- 2016/17: **TA Growth Theory** (Macro 1 I.C.), 30h course (Graduate, LMEC)  
 Instructor: Prof. Carlotta Berti Ceroni, University of Bologna
- 2016/17: **TA Macroeconomics**, 60h course (Undergraduate, CLEF)  
 Instructor: Prof. Flavio Delbono, University of Bologna
- 2014/15: **Introductory Statistics**, (development of interactive e-learning)  
 PI: Prof. Ronald Hochreiter, Vienna University of Economics and Business

## ADDITIONAL EDUCATION

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- 2023/8: Advanced Causal Inference Workshop, Northwestern University
- 2017/7: RSAI-GSSI Summer School of Advanced Economic Geography, L'Aquila  
 (full travel & accommodation grant)
- 2017/5: IIPF Doctoral School: Dynamics of Inequality, Ifo Institute Munich  
 (full travel & accommodation grant)
- 2017/5: Association for Asian Studies, Emerging Fields workshop:  
 "New Frontiers in Asian Economic History", Michigan State University  
 (full travel & accommodation grant)
- 2017/2: ASREC workshop: "Introduction to the Economics of Religion", Boston  
 (full travel & accommodation grant)
- 2015/2: Training School: Spatial Econometrics, WU Vienna

## PRESENTATIONS

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- 2023: Northwestern Economic History Lunch, SED Meeting (Cartagena)
- 2022: Chicago (Mansueto Institute), Clermont-Ferrand (CERDI),  
 Chicago (Development Innovation Lab), Trondheim
- 2021: Warwick (CAGE Summerschool), Chicago (Center for Spatial Data Science), Brown Growth Lab
- 2019: Bologna (internal), NOeG19 (Graz), EEA-ESEM (Manchester) [EUR400 Student Travel Grant],  
 EHES (Paris)
- 2018: Brown Macro Lunch, RSAI18 (Goa, India), WEAI18 (Vancouver), Bologna (PhD-Forum)
- 2017: Tübingen (EHES 2017) [EUR300 travel grant], ASREC Europe (Bologna),  
 L'Aquila (GSSI Summer School), Bologna (PhD-Forum)  
 Michigan State, Munich (CESifo Doctoral School), SMYE (Halle/Saale)
- 2016: Oxford (Nuffield, ESH Graduate Seminar Series), Bologna (PhD-Forum)
- 2015: WU Vienna, University of Bologna (internal)

## REFeree SERVICE

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GeoJournal, Journal of Economic Behaviour & Organization, Journal of Economic Growth, Spring Meeting of Young Economists

## PERSONAL INFORMATION

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Citizenship: Austrian

Languages: German (native), English (fluent), Italian (good, [C1]), French (fading)

Skills: ~~TeX~~, R (fluent); QGIS, GeoDA, python, MATLAB, Git/SVN, SQL (good)

General Interests: Cycling (qualified for UCI amateur World Championships 2022),  
Swimming (sev. podium spots in open-water competitions in the past)

## RESEARCH

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- **Market Integration and Urban Europe, 1100 - 1800 A.D.**

joint with Matteo Cervellati & Gianandrea Lanzara

[\[paper\]](#)

[What are the drivers of European development in the pre-industrial era (1100-1800) is a long-standing question in the social sciences. In this paper, we argue that falling trade frictions can provide a unified explanation for several stylized facts of European pre-industrial development: a shift of the center of economic gravity to Northern Europe, increasing inequality in the city-size distribution, and falling importance of a fertile hinterland for urban success. To conceptualize this process, we develop a novel quantitative spatial economic model with two sectors of production and endogenous hinterlands. We then use the model to structurally estimate the trade friction parameters in each period. Our results show that trade frictions were overall falling over time, and most importantly, that the differential timing of the reduction between sectors is crucial to explain the stylized facts. A counterfactual exercise illustrates that the peculiar geography of Europe was a crucial condition for the so-called Little Divergence, the shift of the center of economic gravity to the North.]

- **Culture, Institutions, and the Roots of Gender Inequality:**

**450 Years of Portuguese Colonialism in India**

[\[paper\]](#) [Winner of RSAI Young Researcher Prize]

[When are economic phenomena persistent over time, and when are they not? If they are, do inequalities persist forever, or do they converge, and if so, at what speed? By analyzing the Indian state of Goa, this research makes use of a historical quasi-natural experiment to document the persistent effect of Portuguese (catholic) colonialism in a South Asian context. To achieve econometric identification, I apply a spatial regression discontinuity design alongside a border that was abandoned in the 18th century. The same institutions were in place on both sides of this former border for almost 250 years. However, only on one side, the colonizers imposed what I characterize as a "cultural treatment", which mainly pertained to education and societal gender norms. This provides a rare opportunity to isolate and identify the effect of culture, holding constant geography, income, and institutions. I find that historically induced gaps in male education can be closed within roughly one generation. Outcomes pertaining to females, on the other hand, are far more rigid, highlighting the differential degree of persistence. Inequalities in female education do converge, albeit at a much slower speed, while male-biased sex ratios appear not to move at all. I conclude that institutions, combined with the right incentives and equal infrastructural investment, can be able to overcome differences in specific important outcomes. Yet, when it comes to deep-rooted cultural norms such as male son preferences, they appear to be little effective.]

- **A Note on Spatial Regression Discontinuity Designs**

[[paper](#)] [[slides](#)] [[R-package](#)]

[I briefly review the state-of-the-art spatial regression discontinuity (RDD) framework that is suitable to isolate causal effects when there are sharp spatial breaks. I then propose several improvements. First, I illustrate that some commonly used specifications are prone to type-I errors, especially when there are spatial trends in the data. Second, I propose a way to report heterogeneous treatment effects alongside the RD cutoff. Third, I introduce randomization inference to the spatial RD framework by creating a set of functions that allow to randomly shift borders. These tools might be interesting for other identification strategies that rely on the shift of boundaries. A companion R-package called "SpatialRDD" includes all the tools necessary to carry out spatial RD estimation, including the proposed improvements. Furthermore, I address recent concerns that spatial RDDs might suffer from spurious regression problems due to spatially correlated omitted variables - or spatial autocorrelation more generally. Using spatial Monte Carlo simulations I demonstrate the opposite. In the presence of such phenomena, spatial RDDs are actually a solution when it comes to too small standard errors in frequentist hypothesis testing induced by spatial correlation.]

- **A Time-Varying Index for Agricultural Suitability across Europe from 1500-2000**

joint with Dylan Philippe (Wyss Academy for Nature)

[[paper](#)]

[Throughout the last centuries, European climate changed substantially, which in turn necessarily affected the potential to plant and grow crops. These changes happened not just over time but also had a spatial dimension. Yet, despite large climatic fluctuations, quantitative historical studies typically rely on static measures for agricultural suitability due to the non-availability of time-varying indices. Relying on recent advances in paleoclimatology, we bridge this gap by constructing a spatio-temporal measure for agricultural suitability across Europe for a period of 500 years. Our gridded index has a 0.5° resolution and is available at a yearly level. We rely on the established methodology by Ramankutty et al. (2002), focusing only on so-called exogenous geographic and climatic features. As a consequence, we are not dependent on largely unreliable and imprecise historical estimates of population density and cropland cover. Our index is able to not just capture long-term trends, such as the so-called little ice age, but also short-term climatic shocks.]

IN PROGRESS

- **Note on Kernel Bandwidth Choices for SpatialHAC Standard Errors**

SOFTWARE

- **SpatialRDD: an R-package to conduct multiple types of geographic regression discontinuity designs**

[[CRAN](#)] [[Github](#)] [[vignette: basics](#)] [[vignette: shifting borders](#)]

- **SpatialInference [R-package currently in development]**

[[Github](#)]