

# Elías Fuentes Guillén

[eliasfg@flu.cas.cz](mailto:eliasfg@flu.cas.cz)  
[eliasfuentesguillen.com](http://eliasfuentesguillen.com)

## Education

- 2017 PhD, Logic and Philosophy of Science, University of Salamanca  
Thesis: “The Germanic development of the pre-modern notion of number.  
From c. 1750 to Bolzano’s *Rein analytischer Beweis*”  
Advisors: José Ferreirós and María Manzano  
(*Summa Cum Laude* with International Doctorate Mention)
- 2010 MPhil, Logic and Philosophy of Science, University of Salamanca
- 2008 BPhil, Philosophy, Autonomous University of the State of Mexico

## Research stays

- 2018 Institute of Philosophy of the Czech Academy of Sciences
- 2014 Metropolitan Autonomous University. Advisor: Max Fernández de Castro
- 2012 IHPST-University Paris 1. Advisors: Marco Panza, Hourya Benis-Sinaceur

## Teaching and employment

- 2023– Researcher, Junior Star Research Fellow, Institute of Philosophy of the Czech Academy of Sciences.
- 2023 Researcher, Faculty of Philosophy, University of Seville, I+D+i programme. Position not accepted.
- 2020–22 Postdoctoral Fellow, Centre for Science, Technology and Society Studies, Institute of Philosophy of the Czech Academy of Sciences.
- 2018–20 Postdoctoral Fellow, Faculty of Sciences, UNAM, Mexico. Advisors: Carmen Martínez Adame Isais and Carlos Álvarez Jiménez.
- 2015–18 Professor, *Philosophy of Science, General Epistemology, Epistemology of Natural Sciences*, BPhil, UAEMex, Mexico.
- 2015–17 Project Developer, Area of Research and Studies in Physical Culture and Sport, UAEMex, Mexico.
- 2012–14 Teaching Assistant, *Logic I, Logic II, Extensions and Applications of Logic* (Professor: María Manzano), BPhil, USAL, Spain.
- 2009 Research Assistant (Professor: Nelson Arteaga Botello), Faculty of Political and Social Sciences, UAEMex, Mexico.

## Publications

2023

*Matematické dílo Bernarda Bolzana ve světle jeho rukopisů*. Translations by Alena Šolcová, Kateřina Trlifajová and Jakub Šolc, Nakladatelství Filosofia, Praha.

*Irrationality, transcendence and the circle-squaring problem. An annotated translation of J. H. Lambert's Vorläufige Kenntnisse and Mémoire* (with Eduardo Dorrego López). Foreword by José Ferreirós. Springer, Cham.

“La reforma de la geometría propuesta por Bolzano en 1804” (with Davide Crippa). In: María de Paz and José Ferreirós (Eds.), *La génesis del conocimiento geométrico*, Plaza y Valdés, in production.

#### 2022

“Bolzano on Bolzano: A hitherto unknown announcement of Bolzano’s *Beyträge*”. *History and Philosophy of Logic* (DOI: 10.1080/01445340.2022.2147750).

“Bolzano’s Theory of *meßbare Zahlen*: Insights and Uncertainties Regarding the Number Continuum”. In: Bharath Sriraman (Ed.), *Handbook of the History and Philosophy of Mathematical Practice*. Springer, Cham, 1–38.

#### 2021

“The 1804 examination for the chair of elementary mathematics at the University of Prague” (with Davide Crippa), *Historia Mathematica* 57, 24–54.e18.

*Dilucidando  $\pi$ . Irracionalidad, trascendencia y cuadratura del círculo en J. H. Lambert (1728-1777)* (with Eduardo Dorrego López), Preface by José Ferreirós. College Publications, ISBN 978-1-84890-359-3.

“Reseña sobre ‘Georg Cantor. Obra matemática’, de Carlos Gómez Bermúdez”, *Gaceta de la Real Sociedad Matemática Española* 24(1), 211–219.

#### 2020

“Continuity between Cauchy and Bolzano: Issues of antecedents and priority” (with Jacques Bair, Piotr Błaszczyk, Peter Heinig, Vladimir Kanovei and Mikhail G. Katz), *British Journal for the History of Mathematics* 35(3), 207–224.

“Tecnología y transparencia” (with Iago Ramos), *Trans/Form/Ação* 43(1), 77–98.

“The notion of variable quantities  $\omega$  in Bolzano's early works” (with Carmen Martínez Adame), *Historia Mathematica* 50, 25–49.

#### 2019

“The notion of natural numbers among Germanic mathematicians during the second half of the 18<sup>th</sup> century”, *RBHM* 19(37), 1–23.

#### 2018

“La cárcel física y mental en la narrativa de José Revueltas”, *Contrastes. Revista Internacional de Filosofía* 23(3), 53–69.

### **Conferences**

#### 2022

“A hitherto unknown text by Bolzano on his *Beyträge*” (Plenary talk), Czech Gathering of Logicians, Praha.

“La reforma de la geometría propuesta por Bolzano en 1804” (Invited talk), Seminar of History and Philosophy of Sciences, Seville.

“On Limits and Values: their Concepts and Expressions” (with Steve Russ), BSHM conference The History of Mathematical Analysis, Birkbeck.

“Bolzano’s Early Research on Elementary Geometry” (with Davide Crippa), Workshop “The genesis of Geometry”, Seville.

#### 2021

“The 1804 examination for the chair of Elementary Mathematics at Prague University” (with Davide Crippa), Seminar on the History and Didactics of Mathematics, Brno.

“The tensions underlying Bolzano’s *Größenlehre*”, Joint BSHM - CSHPM/SCHPM Conference, St Andrews.

“A recently discovered text by Bolzano”, 26<sup>th</sup> International Congress of History of Science and Technology, Praha.

#### 2020

“‘Give me a lever’: Bolzano and the practice of applied mathematics in Prague at the beginning of the 19th century” (with Davide Crippa and Jan Makovský), 5<sup>th</sup> International Meeting of the APMP, Zürich.

#### 2019

“La transición del continuo dinámico al continuo estático”, 3<sup>rd</sup> Seminar on the Philosophy of Mathematics, Mexico City.

“On Bolzano’s early rejection of infinitesimals”, 16<sup>th</sup> CLMPST, Praha.

“Bolzano’s 1804 examination: mathematics and mathematical teaching in early 19<sup>th</sup> century Bohemia” (with Davide Crippa and Jan Makovský), 16<sup>th</sup> CLMPST, Praha.

“The notion of quantities  $\omega$  in the early works of Bolzano”, 3<sup>rd</sup> Franco-Mexican Advanced Seminar in the History and Philosophy of Science, Paris.

“La dislocación de la teoría de Bolzano: la interpretación Weierstrassiana que nos fue heredada”, 2<sup>nd</sup> Seminar on the Philosophy of Mathematics, Mexico City.

#### 2018

“Conflicting mathematical objects c. 1800”, 29<sup>th</sup> Novembertagung on the History of Mathematics, Seville.

“Bolzano’s early mathematical concepts: Old terms within new practices?” (Lecture; chair: Steve Russ), Praha.

“Bolzano’s early conception of mathematics”, Colloquium “What are mathematics?”, Mexico City.

“El desarrollo de la teoría conjuntista cantoriana”, 4<sup>th</sup> Discrete Mathematics Regional Colloquium, Toluca.

“La noción premoderna de número de Bernard Bolzano”, 1<sup>st</sup> Congress of History and Philosophy of Formal Sciences, Mexico City.

#### 2017

“The Germanic route from negative quantities to natural numbers”, 4<sup>th</sup> International Meeting of the APMP, Salvador da Bahia.

“La ciencia de la forma de las cantidades”, 1<sup>st</sup> Seminar on the Philosophy of Mathematics, Toluca.

#### 2016

“Sobre las relaciones y enfrentamientos entre géometras alemanes y franceses a inicios del siglo XIX”, 6<sup>th</sup> Seville Workshop on Philosophy of Mathematics, Seville.

#### 2015

“‘Bienvenue, Monsieur Brejnev’. Weierstrass or the dilemma of revolutionaries”, 3<sup>rd</sup> International Meeting of the APMP, Paris.

#### 2014

“Some remarks about Bolzano’s mathematical sources (1804-1817)” (Short Talk), International Symposium on the Work of Bernard Bolzano, Praha.

#### 2013

“Bolzano’s ‘Rein analytischer Beweis...’ reconsidered” (with José Ferreirós), 2<sup>nd</sup> International Meeting of the APMP, Urbana-Champaign.

#### 2012

“Los métodos iniciales en la teoría de conjuntos cantoriana”, 2<sup>nd</sup> Joint Meeting RSME - SMM, Torremolinos.

### **Organisation of scientific events**

#### 2022

4<sup>th</sup> Seminar on the Philosophy of Mathematics. Organiser. Institute of Philosophy of the Czech Academy of Sciences, Praha.

Lecture by Steve Russ (University of Warwick), “Feeling for a Context: Bernard Bolzano and his Contexts”, Institute of Philosophy of the Czech Academy of Sciences, Praha.

#### 2021

Symposium “Real Numbers in Transition: aspects of the 18th and 19th centuries”, Joint BSHM - CSHPM/SCHPM Conference. Co-organiser with Eduardo Dorrego López. University of St Andrews, St Andrews.

#### 2019

3<sup>rd</sup> Seminar on the Philosophy of Mathematics. Organiser. UNAM, Mexico City.

2<sup>nd</sup> Seminar on the Philosophy of Mathematics. Organiser. UNAM, Mexico City.

#### 2018

29<sup>th</sup> Novembertagung: History of Mathematical Concepts and Conceptual History of Mathematics. Member of the organising committee. US / IMUS, Seville.

## 2017

1<sup>st</sup> Seminar on the Philosophy of Mathematics. Organiser. UAEMex, Toluca.

### **Research projects**

“Normalisation and Emergence: Rethinking the Dynamics of Mathematics. The case of Prague in the First Half of the 19th Century”. Principal Investigator. GAČR Junior Star, Czech Republic, 1/1/2023 to 31/12/2027.

“Matematización y cambio conceptual.” Principal Investigators: Carlos Álvarez Jiménez and Vincent Jullien. Mexico and France, 1/1/2019 to 31/12/2022.

“Mathematics in the Czech lands: from the Jesuit teaching to Bernard Bolzano.” Principal Investigator: Davide Crippa. Czech Republic, 1/5/2019 to 31/12/2021.

“La comprensión matemática.” Principal Investigator: Carmen Martínez Adame Isais. Mexico, 2018.

“La Génesis del Conocimiento Matemático: Cognición, Historia, Prácticas.” Principal Investigator: José Ferreirós. Spain, 01/09/2015 to 31/12/2018.

“Acerca da Elucidação do Conceito de Número: Lógica, Teoria de Conjuntos e Prática Matemática.” Principal Investigators: José Ferreirós and Abel Lassalle Casanave. Brazil, 2013.

### **Research groups**

Historia y Filosofía de las Ciencias Físicas y Matemáticas. Principal Investigator: José Ferreirós. University of Seville (<http://grupo.us.es/hum717/index.html>).

### **Grants and awards**

“National Researcher Level I”, SNI-CONACYT, Mexico, 2023–27.

“National Researcher Candidate”, SNI-CONACYT, Mexico, 2021–22.

Funding for young scholars organising a symposium at the Joint BSHM - CSHPM/SCHPM Conference, International Commission for the History of Mathematics, July 2021 (not implemented).

Josef Dobrovský Fellowship for short-term study stays of foreign researchers, Institute of Philosophy of the Czech Academy of Sciences, May to June 2018.

Extraordinary Doctorate Award for the best PhD thesis (Philosophy), 2016–17 academic year, University of Salamanca, December 2017.

Honorary Assistant (Professor: José Ferreirós), Department of Philosophy and Logic and Philosophy of Science, University of Seville, 2013–14 academic course.

Short Term Mobility Funding for FPU beneficiaries (IHPST-Université Paris 1), Ministry of Education, Spain, February to June 2012.

Training Programme for Academic Staff Scholarship (FPU), PhD, Ministry of Education, Spain, October 2010 to September 2014.

Mobility Scholarship for Master students (Universidade de Santiago de Compostela), Ministry of Education, Spain, 2009/2010.

Santander Bank Grant for Iberoamerican Students, Master's degree, Santander Bank, Spain, October 2009 to July 2010.

FOCAEM Grant, CONACULTA, Mexico, January to December 2007.

### **Thesis advisor**

*Los orígenes de la noción de evidencia en el marco de la filosofía de la ciencia del siglo XX.* Axel Gómez Sánchez. Co-advisor: Alberto Saladino García. BPhil, UAEMex, Mexico, 2022.

### **Examination board**

*El problema de los Datos de Euclides como la puerta de entrada al estudio del análisis geométrico de los antiguos.* Germán Cárdenas Leroy. Advisor: Carlos Álvarez Jiménez. PhD, Philosophy of Science, UNAM, Mexico, in progress.

*Los orígenes del conocimiento geométrico: una aproximación cognitiva, epistemológica y arqueo-histórica orientada al continente Euroasiático.* Manuel Jesús García Pérez. Advisor: José Ferreirós. PhD, Philosophy, Universidad de Sevilla, Spain, 2023.

*Acción Libre y Causación de la Acción.* Miguel Ángel Rotter Zimbrón. Advisor: Santiago Echeverri. MPhil, Philosophy of Science, UNAM, Mexico, 2022.

*La crítica de Berkeley al cálculo de Newton.* Mauricio Algalán Meneses. Advisor: Cristian Alejandro Gutiérrez Ramírez. MPhil, Philosophy of Science, UNAM, Mexico, 2019.

*El debate de la cuerda vibrante y el concepto de función matemática en el Siglo XVIII.* Julio Martín Arriaga Romero. Advisor: Carmen Martínez Adame Isais. MPhil, Philosophy of Science, UNAM, Mexico, 2017.

### **Associations**

Member of the Association for the Philosophy of Mathematical Practice (APMP).

Member of the Internationale Bernard Bolzano-Gesellschaft (IBBG).

### **Other professional activities**

Developer and responsible for the website [BernardBolzano.org](http://BernardBolzano.org) (with Steve Russ).

Tutor, MPhil, Philosophy of Science, UNAM, Mexico, from 2023.

Responsible for the website of the APMP from October 2012 to December 2015.

Referee for *Springer*, *Foundations of Science*, *Cuestiones de Filosofía*, *THEORIA*, *Antiquitates Mathematicae*, *DIÁNOIA*, *Azafea*, *Revista de Filosofía*, *Revista Valenciana* and *Revista Portuguesa de Filosofia*.