

MANUEL BARRANTES

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Nationality: Peruvian
Languages: Spanish (native), English (fluent), French (competent: Diplôme DELF B2)

EDUCATION

Ph.D. Philosophy, University of Virginia (2017)
M.A. Philosophy, University of Virginia (2014)
B.A. Philosophy, Pontifical Catholic University of Perú (2008)

AREA OF SPECIALIZATION

Philosophy of Science; Philosophical History of Science.

AREAS OF COMPETENCE

Modern Philosophy; Philosophy of Social Science; Ethics and Technology; Latin American Philosophy; Philosophy of Mathematics; Logic.

ACADEMIC EMPLOYMENT

2020 – *California State University Sacramento*
Assistant Professor
Department of Philosophy

2018 – 2020 *Hamilton College*
Visiting Assistant Professor
Philosophy Department

2015 – 2018 *James Madison University*
Adjunct Instructor
Department of Philosophy; Computer Science Department

2010 – 2015 *University of Virginia*
Instructor
Department of Spanish, Italian, and Portuguese

2008 – 2010 *Antonio Ruiz de Montoya University (Perú)*
Assistant of the academic Vice Chancellor for Academic Affairs, and Academic Coordinator of the Online Certificates in Scientific and Mathematics Education

PAPERS

1. Barrantes, M. (Forthcoming), 'Structural Explanations: Impossibilities vs Failures', *Synthese*.
2. Barrantes, M. (Forthcoming), 'Cartesian Certainty, Realism and Scientific Inference', in: Secada, J. and Wee, C. (Eds.) *The Cartesian Mind*, Routledge.
3. Barrantes, M. (2022), '[Un Extractor de Jugo Teórico: El Papel de las Matemáticas en la Explicación Científica](#)', *Epistemología e Historia de la Ciencia*, 7(1), 6-21.
4. Barrantes, M. (2020), '[Explanatory Information in Mathematical Explanations of Physical Phenomena](#)', *Australasian Journal of Philosophy*, 98 (3), 590-603.
5. Barrantes, M. (2019), '[Optimal Representations and the Enhanced Indispensability Argument](#)', *Synthese*, 196 (1), 247 – 263.
6. Barrantes, M. (2019), '[Estructuralismo, Ficcionalismo, y la Aplicabilidad de las Matemáticas en Ciencia](#)', *Areté. Revista de filosofía*, 31 (1), 7–34.
7. Barrantes, M. and J. Durán (2016), '[Thomas Reid on Causation and Scientific Explanation](#)', *The Journal of Scottish Philosophy*, 14 (1), 51-67.

WORK IN PROGRESS

'The Ins and Outs of Simulation Explanation' [coauthored with Juan Durán]
'Do Mathematical Explanations of Physical Phenomena Require Explanatory Proofs?'
'Counterfactual Information in Higher-Order Scientific Explanations'.
'Dispelling the Mystery: Mathematical Models in Science'

BOOK

Barrantes, M., *Structural Explanations in Science. Understanding So-Called Mathematical Explanations of Physical Phenomena* (Under contract with Springer)

OTHER PUBLICATIONS

Barrantes, M. 'Critical Point. Philosophy and Science'. Biweekly opinion column on science, philosophy, and Peruvian politics in the Peruvian digital journal [Sudaca.pe](#) (in Spanish). Some of the entries include:

- [WhatsApp and diversity of opinions](#)
- [Sinopharm and conspiracy theories](#)
- [The tobacco strategy. Peruvian edition](#)
- [Vaccines, global warming, and uncertainty](#)
- [Fake News](#)
- [Playing Jenga with Chenbacca](#)
- [What is pseudoscience?](#)
- [Horoscopes](#)
- [Causality and Chance](#)
- [Ivermectin, Vaccines, and Anti-science](#)

Murga-Zamalloa, C. and M. Barrantes (2021), '[Ivermectina. Qué sabemos del fármaco en casos de Covid-19?](#)' in *Ojo-Público.com*.

Barrantes, M. (2010), *Basic Mathematics*, Lima: Editora Lealtad, 416 pages. (In Spanish)

PRESENTATIONS

- 2023 *Do Mathematical Explanations Require Explanatory Proofs?*
North Carolina Philosophical Society, Duke University (Durham, North Carolina, USA)
- 2022 *Do Mathematical Explanations Require Explanatory Proofs?*
California State University Sacramento, Philosophy Club (Sacramento, California, USA)
- 2019 *Navigating the Fog of Scientific Uncertainty*
Fireside Chat hosted by the Autonomous Hamilton Affinity Group ‘Making Scientific Knowledge’. Natural Things Conference, Hamilton College (Clinton, New York, USA)
- Comments on Anna Toledano’s “Taxonomic Colonialism: The Persistence of Linguistic Hybridity in Azara’s South American Species Names.”*
Natural Things Conference, Hamilton College (Clinton, New York, USA)
- Philosophy of Science: Methods and Practices*
Hamilton College, Making Scientific Knowledge: An Interdisciplinary Focus Group.
Autonomous Hamilton Affinity Group (AHA!) (Clinton, New York, USA)
- 2018 *Non-Causal Explanations and Explanatory Asymmetries*
University of Virginia. Jefferson Scholars Foundation. Recent Trends in the Philosophy of Logic, Science, and Action (Charlottesville, Virginia, USA)
- 2017 *Mathematical Explanation and Scientific Explanation*
Afternoon Sessions of the Masterclass in the Philosophy of Mathematical Practice, at Vrije Universiteit Brussel (Brussels, Belgium)
- Psychotechnology and the Rise of Antirealism in Validity Theory and Psychological Measurement*
Midwinter Meeting of the Society for Theoretical and Philosophical Psychology (Richmond, Virginia, USA) (with John D. Hathcoat)
- Motivations and Limitations of Moral Relativism*
James Madison University, Madison Learning Community (Harrisonburg, Virginia, USA)
- The Role of Mathematics in Scientific Explanation*
James Madison University. Department of Mathematics & Statistics (Harrisonburg, Virginia, USA)
- Four Problems in Contemporary Philosophy of Mathematics*
University of Stuttgart. High Performance Computing Center Stuttgart (Stuttgart, Germany)
- 2016 *Is the Enhanced Indispensability Argument Circular?*
25th Biennial Meeting of the Philosophy of Science Association (Atlanta, Georgia, USA)
- Is the Enhanced Indispensability Argument Circular?*
1st Latinx Philosophers Conference. Department of Philosophy, Columbia University (New York, New York, USA)
- Comments on Peter Tan’s ‘Inconsistent Idealizations’*
University of Virginia. Philosophy Department. Fall Retreat at Morven Farm (Charlottesville, Virginia, USA)
- 2015 *Mathematical Representation in Science*
2nd Annual Graduate Student Conference at Fordham University: Change and Its Challenges (New York, New York, USA)
- Optimal Representation in Scientific Explanation*
Universidad Nacional de Córdoba, Centro de Investigación de la Facultad de Filosofía y Humanidades (Ciffyh) (Córdoba, Argentina)
- Optimal Representation in Scientific Explanation*
James Madison University, Department of Philosophy and Religion – Philosophy Colloquium (Harrisonburg, Virginia, USA)
- 2014 *Mathematical Explanations of Physical Phenomena*
3rd Colombian Conference on Logic, Epistemology and Philosophy of Science (Bogotá, Colombia)

- Science, Mathematics and Philosophy*
University of Virginia, Systems Engineering Department (Charlottesville, Virginia, USA)
- Mathematical Explanations and Mathematical Realism*
University of Virginia, Philosophy Department, Philosophy after Dark (Charlottesville, Virginia, USA)
- Mathematical Explanations and Mathematical Realism*
The State University of New York at Potsdam, Philosophy Forum (Potsdam, New York, USA)
- Descartes and the foundations of Science*
Invited Lecture for the class ‘Selected Philosophers: Descartes’. Instructor: Jorge Secada. The State University of New York at Potsdam, (Potsdam, New York, USA)
- 2013 *Mathematical Explanations and Mathematical Realism*
National University of San Marcos, Philosophy Department (Lima, Perú)

TEACHING EXPERIENCE

- 2020 – *California State University Sacramento*
Philosophy of Science
Modern Philosophy
Explanation in the Natural and Social Sciences (Senior seminar)
Descartes’ Philosophy of Science (Senior seminar)
Introduction to Philosophy
- 2018 – 2020 *Hamilton College*
Explanation in the Natural and Social Sciences (Senior seminar)
Ethical and Social Issues in the Digital Age
Symbolic Logic
Latin American Philosophy
Introduction to Philosophy
- 2015 – 2018 *James Madison University*
Social and Ethical Issues in Computing
Ethical Reasoning
Introduction to Philosophy
Critical Thinking
- 2017 *Massachusetts Institute of Technology - PIKSI Boston*
Four Problems in the Philosophy of Scientific Explanation (90’ lecture)
- 2015 *Universidad Nacional de Córdoba (Argentina)*
The Philosophy of Scientific Explanation (2-week Graduate Seminar)
- 2014 *George Mason University*
Introduction to Philosophy
- 2010 *Antonio Ruiz de Montoya University (Perú)*
Ancient and Medieval Political Philosophy
Bioethics
- 2010 – 2014 *University of Virginia*
Advanced Intermediate Spanish (Teaching assistant)
Accelerated Elementary Spanish (Teaching assistant)

SERVICE AT CALIFORNIA STATE UNIVERSITY SACRAMENTO

- Faculty Mentor for the Center on Race, Immigration, and Social Justice Research Mentorship Program
- Fellow for the College of Arts & Letters Faculty Fellows Program (2022-2023)
- Member of the Philosophy Department Curriculum Committee
- Member of the Philosophy Department Teaching Evaluation Committee
- Member of the Philosophy Department 2021-2022 Hiring Committee
- Chair of the Philosophy Department Weddle Award (an undergraduate writing contest)
- Guest teacher for the Future Philosophers Program at Río Americano High School

SERVICE TO THE PROFESSION

Referee:

Australasian Journal of Philosophy

Synthese

European Journal for Philosophy of Science

Minds and Machines

Ethics and Information Technology

Simulation

Artificial Intelligence

Epistemología e Historia de la Ciencia.

GRANTS

- Project: ‘The Public Understanding of Science’, Levitt Public Affairs Center, *Hamilton College* (\$5600)
- Project: ‘Making Scientific Knowledge: An Interdisciplinary Focus Group’, Autonomous Hamilton Affinity Group (AHA!), *Hamilton College* (\$4000). (Team Member. PI: Mackenzie Cooley)
- Wellin Museum Grant for Innovative Teaching, *Hamilton College* (\$600).
- Travel grant: ‘Afternoon Sessions of José Ferreirós’ Masterclass in the Philosophy of Mathematical Practice’, *Vrije Universiteit Brussel* (\$400)

REFERENCES

Otávio Bueno

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University of Miami

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Saray Ayala-López

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California State University, Sacramento

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Professor of Philosophy

University of Virginia

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Juan Durán

Assistant Professor of Philosophy

TU Delft

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