

# BRENO ARSIOLI MOURA

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## RESEARCH INTERESTS

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History of Optics  
History of Electricity  
Eighteenth-Century Natural Philosophy  
Iconography  
Translation Studies

## EDUCATION

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### University of São Paulo, Brazil

PhD in Sciences (2009-2012)

Dissertation: *Critical and Transformative Education of Physics Teachers: A Proposal from the History of Science*

Master of Science (2006-2008)

Thesis: *The Acceptance of Newtonian Optics in the Eighteenth Century: Elements to Introduce NOS in Science Teaching*

### State University of Campinas, Brazil

Bachelor of Science (2002-2005), Major: Physics

## PROFESSIONAL EXPERIENCE

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### Federal University of ABC (UFABC), Brazil (2013-present)

Assistant Professor of History of Science, Level III (tenured)

*Coordinator of the Physics Undergraduate Program (2016-2018)*

*Member of the Council of the Graduate Program in Teaching and History of Sciences and Mathematics (2015-2018; present)*

*Member of UFABC's Undergraduate Council (2016-2018)*

### Revista Brasileira de História da Ciência (Brazilian Journal of History of Science) (2020-present)

Editor-in-Chief

### A Física na Escola (Physics in School), Brazil (2016-2020)

Adjunct Editor of *History of Science*

### Laboratoire SPHere, Université Paris 7/CNRS, France (2020)

Visiting Scholar

### Department of History, University of California (Berkeley), USA (2014-2015)

Visiting Scholar

**Federal University of the Minas Gerais Triangle (UFTM), Brazil (2010-2013)**

Assistant Professor of Physics Teaching, Level I

*Coordinator of the Physics Undergraduate Program (2011-2012)*

*Member of UFTM's Undergraduate Council (2011-2012)*

**Federal University of Alfenas (UNIFAL), Brazil (2009-2010)**

Assistant Professor of Physics Teaching, Level I

**TEACHING EXPERIENCE**

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**Federal University of ABC,  
Brazil**

**Graduate courses:**

*Historiography and Philosophy of Science and Mathematics*

*Topics in History and Philosophy of Science and Mathematics*

**Undergraduate courses:**

*Evolution of Physics*

*Birth and Development of Modern Science*

*Scientific Education, Society and Culture*

*History and Philosophy of Science and Science Teaching*

**Public courses:**

*Alternative perspectives on Isaac Newton's works*

*Historical Texts to Teach Scientific Concepts*

*Nature of Science for Science Education*

*Introduction to Isaac Newton's Studies on Light and Colors*

**Federal University of Minas  
Gerais Triangle, Brazil**

**Undergraduate courses:**

*Foundations of Physics*

*Introduction to Science*

*Study and Development of Projects IV*

*Study and Development of Projects V*

**Federal University of Alfenas,  
Brazil**

**Undergraduate courses:**

*History of Physics*

*Laboratory of Physics Teaching I*

*Laboratory of Physics Teaching II*

**RECENT ADVISING EXPERIENCE**

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**R. Siqueira (2019-present)**, *PhD student – Graduate Program in Teaching and History of Science and Mathematics.*

**F. M. Damasceno (2018-present)**, *Master's degree student – Graduate Program in Teaching and History of Science and Mathematics.*

Former advisor of six graduate students, all of whom successfully completed their theses and obtained a Master's Degree in Teaching and History of Science and Mathematics or in Physics Teaching.

## CONFERENCES (CHAIRED)

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- 2018 | Fourth Latin-American Regional Conference of the International History, Philosophy and Science Teaching Group (IHPST), Santo André, Brazil. Accessible at: [http://ihpst.net/content.aspx?page\\_id=22&club\\_id=360747&module\\_id=187166](http://ihpst.net/content.aspx?page_id=22&club_id=360747&module_id=187166)

## PAPERS AND BOOK CHAPTERS IN ENGLISH

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- 2020 | “The Problem of Reflection in Eighteenth-Century Projectile Optics.” *Physics in Perspective* 22: 191-214, 2020. <https://doi.org/10.1007/s00016-020-00266-w>
- 2020 | “The First French Translation of Book II of Newton’s Opticks: Omissions, Abridgements and Quest for Authorship.” *Notes and Records of the Royal Society*. <https://doi.org/10.1098/rsnr.2020.0029>. Print forthcoming.
- 2018 | “Newtonian Optics and the Historiography of Light in the 18th Century: A Critical Analysis of Joseph Priestley’s The History of Optics.” *Transversal – International Journal for the Historiography of Science* 5: 157-170. <http://dx.doi.org/10.24117/10.24117/2526-2270.2018.i5.12>.
- 2018 | “Critical and Transformative Education of Teachers: A Rationale for History and Philosophy of Science in Teacher Education.” In M.E.B. Prestes & C.C. Silva (eds.). *Teaching Science in Context: Historical, Philosophical, and Sociological Approaches*. Springer: Dordrecht. [https://doi.org/10.1007/978-3-319-74036-2\\_1](https://doi.org/10.1007/978-3-319-74036-2_1). Co-author: C.C. Silva.
- 2012 | “Science and Society: The Case of Acceptance of Newtonian Optics in the Eighteenth Century.” *Science & Education* 21: 1317-35. <https://doi.org/10.1007/s11191-011-9380-1>. Co-author: C.C. Silva.

## OPINION PIECE IN ENGLISH

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- 2020 | “Franklin and the Kite: What Can We Learn From This Episode?” *HPS&ST Newsletter*, September Issue. Accessible at: <https://www.hpsst.com/uploads/6/2/9/3/62931075/2020septoped.pdf>.

## BOOKS IN PORTUGUESE (titles in English)

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- In progress | *Finding the Nature of Light: A Singular History of Optics from the Seventeenth to the Nineteenth Century*. Due to be published in 2022.
- 2019 | *Benjamin Franklin’s Natural Philosophy: Translations of Essays and Papers on Electricity and Light*. São Bernardo do Campo: EdUFABC. Honorable Mention in the Brazilian Association of University Publishers (ABEU) 2020 Prize, category “Translation”.
- 2019 | *Humanistic Objectives, Scientific Contents: Contributions to History and Philosophy of Science to Science Teaching*. Campina Grande: EDUEPB. Co-edited with A.P.B. Silva.
- 2017 | *History of Science, Epistemology, Gender and Art: Essays for Teacher Education*. São Bernardo do Campo: EdUFABC. Co-edited with T.C.M. Forato.

**PAPERS IN PORTUGUESE (titles in English)**

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<b>Forthcoming</b>	“Thomas Melvill’s ‘Observations on Light and Colours’: An Annotated Translation.” <i>Caderno Brasileiro de Ensino de Física</i> .
<b>Forthcoming</b>	“Stars, Light and Black Bodies in the Eighteenth Century: An Annotated Translation of John Michell’s (1724-1793) Paper.” <i>Revista Brasileira de História da Ciência</i> . Co-authors: A.P.B. Silva and T.R.M. Medeiros.
<b>2020</b>	“Estevão Cabral (1734-1811) against Newton: Notes on his Unpublished Memoir on the Nature of Light.” <i>Khronos – Revista de História da Ciência</i> 9: 204-215. <a href="http://dx.doi.org/10.11606/khronos.v0i9.170754">http://dx.doi.org/10.11606/khronos.v0i9.170754</a> .
<b>2018</b>	“Benjamin Franklin’s Contributions to the Eighteenth-Century Electricity.” <i>A Física na Escola</i> , 16, no. 2: 27-35.
<b>2016</b>	“Vibration Theories of Light in Eighteenth-Century Great Britain.” <i>Scientiae Studia</i> , 14, no. 2: 333-56. <a href="http://dx.doi.org/10.11606/S1678-31662016000200003">http://dx.doi.org/10.11606/S1678-31662016000200003</a> .
<b>2016</b>	“Newton vs. Huygens: How the Dispute Between their Theories of Light (have not) Occurred.” <i>Caderno Brasileiro de Ensino de Física</i> , 33, no. 1: 111-41. <a href="http://dx.doi.org/10.5007/2175-7941.2016v33n1p111">http://dx.doi.org/10.5007/2175-7941.2016v33n1p111</a> .
<b>2015</b>	“Thomas Young and The Recovering of the Wave Theory of Light: An Annotated Translation of his ‘On the theory of light and colours’.” <i>Revista Brasileira de Ensino de Física</i> , 37, no. 4: paper n° 4203. <a href="http://dx.doi.org/10.1590/S1806-11173731818">http://dx.doi.org/10.1590/S1806-11173731818</a> . Co-author: S.L.B. Boss.
<b>2015</b>	“Voltaire and Algarotti: Diffusers of Newtonian Optics in Eighteenth-Century Europe.” <i>Scientiae Studia</i> , 13, no. 2: 397-423. <a href="http://dx.doi.org/10.1590/S1678-3166201500020000707">http://dx.doi.org/10.1590/S1678-3166201500020000707</a> . Co-author: C.C. Silva.
<b>2014</b>	“Isaac Newton and the Double Refraction of Light.” <i>Revista Brasileira de Ensino de Física</i> , 36, no. 4: paper n° 4602. <a href="https://doi.org/10.1590/S1806-11172014000400021">https://doi.org/10.1590/S1806-11172014000400021</a> .
<b>2014</b>	“What is the Nature of Science and What is its Relation with History and Philosophy of Science?” <i>Revista Brasileira de História da Ciência</i> , 7, no. 1: 32-46.
<b>2008</b>	“Did Newton Anticipate the Concept of Wave-Particle Duality of Light?” <i>Latin American Journal of Physics Education</i> , 2, no. 3: 218-227.

**SELECTION OF PAPERS PRESENTED AT INTERNATIONAL CONFERENCES**

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<b>2019</b>	“The problem with reflection in eighteenth-century projectile optics.” <i>European Society for the History of Science First Young Scholars Conference</i> , Paris, France.
<b>2018</b>	“Contextual reading of primary sources: a proposal for university classes of history of science.” <i>XI International Conference on History of Science and Science Education</i> , Campina Grande, Brazil.
<b>2017</b>	“Thomas Melvill and the hanging drop: a study of his short career on optics.” <i>25th International Congress of History of Science and Technology</i> , Rio de Janeiro, Brazil.

- 2016** “The resistance to Newtonian Optics in eighteenth century: what did the opponents say?” *3rd Biennial Early Career Conference for Historians of the Physical Sciences*, Annapolis, USA.
- 2016** “The changing role of Newton’s fits in the eighteenth century: social and cultural factors for the rejection of a theory.” *1st European Regional History, Philosophy and Science Teaching Group (IHPST) Conference*, Flensburg, Germany.
- 2015** “The concept of repulsion in eighteenth-century projectile theories of light: a critical analysis.” *Évora 6th Symposium in Philosophy and History of Science and Technology*, Évora, Portugal.
- 2015** “Joseph Priestley and *The History of Optics*: historiography for Science Education.” *13th International History, Philosophy and Science Teaching Group (IHPST) Conference*, Rio de Janeiro, Brazil.
- 2009** “Mechanical models for light in the eighteenth century: enhancing physics teachers’ views of Nature of Science.” *GIREP-EPEC 2009 International Conference*, Leicester, UK.

## RECENT INVITED TALKS IN PORTUGUESE (titles in English)

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“Experimental Practices in Science: Glimpses from History” (online), **Lecture Cycle “Why Trust in Science?”**, University of São Paulo, 2020.

Accessible at: [https://youtu.be/DzoVBxrS\\_6E](https://youtu.be/DzoVBxrS_6E).

“Isaac Newton’s Quarantine: Truths and Lies” (online), **National Physics Day**, Federal University of Minas Gerais Triangle, 2020.

Accessible at: <https://youtu.be/zIH5iFlHBQQ>.

“Is the Historiography of Science Also Mutable?” (online), **Filosofísica**, University of São Paulo, 2018.

Accessible at: <https://youtu.be/2i36oJQ7kKY>.

“Benjamin Franklin’s Conceptions of Electricity”, **Third Physics Week**, Federal Institute of Education, Science and Technology of Goiás, 2018.

“Did Newton propose a corpuscular theory of light?”, **Colloquium of Physics**, Federal University of ABC, 2016.

## GRANTS AND FELLOWSHIPS

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**São Paulo Research Foundation (Fellowship)**, to conduct research on the history of optics in France and Portugal at the Université Paris 7/CNRS (Paris) from January to March 2020. Fellowship #2018/21711-6.

**São Paulo Research Foundation (Travel Grant)**, to conduct research in the archives of the Library of the Royal Society of London in September 2018. Grant #2018/12578-0.

**Brazilian National Council for Scientific and Technological Development (Grant)**, to conduct the research project “The Nature of Light from Newton to Young: A Study of Optics between the Seventeenth and Nineteenth Centuries” from June 2017 to May 2020. Grant #400118/2016-5.

**American Institute of Physics (Travel Grant)**, to attend the Early-Career Historians of the Physical Sciences Conference, hosted by the Center for History of Physics of the American Institute of Physics (AIP) in Annapolis, Maryland, in April 2016.

**São Paulo Research Foundation (Fellowship)**, to conduct research on the history of optics in Great Britain and the United States of America at the University of California (Berkeley) from September 2014 to January 2015. Fellowship #2014/04366-2.

**São Paulo Research Foundation (Scholarship)**, to conduct research on the history of optics in Great Britain during my Master’s degree in Sciences from September 2006 to August 2008. Scholarship # 2006/02410-8.

**São Paulo Research Foundation (Scholarship)**, to conduct research on Isaac Newton’s *Opticks* from July 2004 to December 2005. Scholarship # 2004/03131-0.

## PROFESSIONAL MEMBERSHIPS

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History of Science Society (HSS)

Brazilian Society for the History of Science (SBHC)

International History, Philosophy and Science Teaching Group (IHPST)

## LANGUAGES

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**Portuguese** – Native speaker

**English** – Advanced (Reading, Writing, Speaking, Listening)

**French** – Intermediate (Reading, Writing, Speaking, Listening)

**Italian** – Beginner (Reading)