

# CURRICULUM VITAE

Theodore Arabatzis

May 2020

## **Institutional Address:**

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**Date and Place of Birth:** 5/14/1965, Thessaloniki, Greece

**Military Service:** 29 May 1995 – 29 May 1996

**Current Position:** Professor of History and Philosophy of Science  
Department of History and Philosophy of Science  
National and Kapodistrian University of Athens

## **Education** (degree, date, Institution):

- B.Sc., 7/18/1988, Dept. of Electrical Engineering, Aristotle University of Thessaloniki, Thessaloniki, Greece
- M.A., 10/19/1990, Program in History of Science, Dept. of History, Princeton University
- Ph.D., 30/5/1995, Program in History of Science, Dept. of History, Princeton University

## **Fellowships / Visiting Positions / Distinctions:**

- Stanley J. Seeger Fellow, Program in Hellenic Studies, Princeton University, Academic Year 1988/1989
- Princeton University Fellow, Program in History of Science, Princeton University, Sept. 1989 - June 1993
- Princeton University Lecturer, Department of History, Princeton University, Spring Semester, 1993 – 1994
- Post-doctoral Fellow, Dibner Institute for the History of Science and Technology, MIT, Sept. 2000 – Aug. 2001
- Visiting Professor, Department of Mathematics, Johannes Gutenberg-Universität Mainz, 20-26 February 2002
- Visiting Scholar, Max Planck Institute for the History of Science, Berlin, Feb. 2007 – June 2007, June 2010
- Visiting Professor, L'École des hautes études en sciences sociales, Paris, May 2010

- Visiting Professor, Universität Bonn, Institut für Philosophie, November 2011
- Visiting Professor, Centre for Science Studies, Dept. of Physics & Astronomy, Aarhus University, 15 June – 15 August 2013
- Visiting Professor, Unit for the History and Philosophy of Science, Faculty of Sciences, University of Lisbon, September 2014
- Winner of the IUHPST Essay Prize in History and Philosophy of Science, International Union of History and Philosophy of Science and Technology, March 2017 (<http://iuhps.net/pages/inter-division-commissions/joint-commission/essay-prize.php>)
- President-elect of the European Society for History of Science, 16 September 2018
- Corresponding member of the International Academy of the History of Science, 25 May 2019

### **Selected professional activities**

- Principal Investigator of the project "PYTHIA: The Perils of Prediction in the Physical Sciences: Historical and Epistemological Perspectives" (2020-2022). Funded by the Hellenic Foundation for Research and Innovation.
- Co-Principal Investigator of the project "The Place of Experimental Practices in Science & Technology Studies" (2009-2010). Funded by the State Scholarships Foundation (IKY) and the German Academic Exchange Service (DAAD).
- Investigator in the Research Program: THALES–National and Kapodistrian University of Athens: Aspects and Perspectives of Realism in Philosophy of Science and Mathematics (APRePoSMa, 2012-2015)
- Founding member of the Research Centre for the Humanities (<https://www.rchumanities.gr/en/founding-members/>)
- Coordinator of the collaboration agreement between the European Organization for Nuclear Research (CERN) and the Research Centre for the Humanities (RCH) (2015 - )
- Collaborator of the ERC Project on Perspectival Realism (<http://www.perspectivalrealism.org/collaborators/>)
- Member of the Barcelona History and Philosophy of Science Research Group (<http://www.uab.cat/web/recerca/barcelona-hps/people-1345693085911.html>)
- Co-editor of the journal *Metascience* (2010-2014)
- Member of the editorial board of the series:
  - Boston Studies in the Philosophy and History of Science* (Springer)
  - European Studies in Philosophy of Science* (Springer)
  - Science: Philosophy, History and Education* (Springer)
  - Springer Briefs in History of Science and Technology* (Springer)
- Member of the editorial board of the journals *analytica*, *Metascience*, *Neusis*,

*Science & Education, Theory of Science*

- Member of the ESF College of Expert Reviewers (2019-2021) (<http://www.esf.org/community-of-experts/college-of-expert-reviewers/>)

- Reviewer for

**Journals:** *analytica, Biological Theory, British Journal for the Philosophy of Science, Defkalion, Erkenntnis, European Journal for Philosophy of Science, Filozofia Nauki, Foundations of Science, History of Geo- and Space Sciences, HOPOS, International Studies in the Philosophy of Science, Isis, Journal for General Philosophy of Science, Journal of the Philosophy of History, Neusis, Organon, Philosophy of Science, Science and Education, Science in Context, Studies in History and Philosophy of Modern Physics, Studies in History and Philosophy of Science, Synthese*

**Publishers and Institutions:** *Cambridge University Press, University of Pittsburgh Press, Springer, The Greek Open University, European Philosophy of Science Association, European Society for the History of Science, International Union of History and Philosophy of Science and Technology*

**Funding Agencies:** *European Research Council, European Science Foundation, The Danish Research Council, Fund for Scientific Research – FNRS (Belgium), Czech Science Foundation, Greek State Scholarships Foundation (IKY), Research Center for the Humanities, John S. Latsis Public Benefit Foundation*

- Member of the IUHPST Joint Commission, February 2020 –
- Member of the Executive Board of the *Integrated HPS Committee*, 2015 – 2018 (<http://integratedhps.org/en/past-committee-membership/>)
- Member of the steering committee of the *European Philosophy of Science Association* (2009-2011)
- Member of the academic societies *European Society for the History of Science, History of Science Society, Philosophy of Science Association*

### **Research interests**

- History of the physical sciences in the 19<sup>th</sup> and 20<sup>th</sup> centuries
- Historiography of science
- General philosophy of science

### **PUBLICATIONS**

#### **A. Monographs:**

- T. Arabatzis, *Representing Electrons: A Biographical Approach to Theoretical Entities* (Chicago: University of Chicago Press, 2006).

Reviews have appeared in *Ambix, Australian Physics, British Journal for the History of Science, Canadian Undergraduate Physics Journal, Chemical Heritage News Magazine, Chemistry World, Contemporary Physics,*

*Historical Studies in the Physical and Biological Sciences, International Studies in the Philosophy of Science, Isis, Journal of Chemical Education, Metascience, NTM, Studies in History and Philosophy of Modern Physics, Nuncius, Physics Education, Science & Education, Science & Public Policy.*

## **B. Edited Volumes**

- T. Arabatzis, J. Renn, A. Simões (eds.), *Relocating the History of Science: Essays in Honor of Kostas Gavroglu*, Boston Studies in the Philosophy and History of Science, Vol. 312 (Springer; 2015).

A review has appeared in *The British Journal for the History of Science*.

- T. Arabatzis and D. Howard (eds.), "Integrated HPS in Practice," special issue of *Studies in History and Philosophy of Science* (50, April 2015) with a selection of papers from the conference &HPS4 at the University of Athens.
- V. Kindi and T. Arabatzis (eds.), *Kuhn's The Structure of Scientific Revolutions Revisited* (Routledge, 2012).

Reviews have appeared in *HOPOS, Metascience, Notre Dame Philosophical Reviews, Philosophy in Review, Science & Education*.

- J. Schickore and T. Arabatzis (eds.), special issue of *Perspectives on Science* (20:4, 2012) with a selection of papers from the conference &HPS3 at Indiana University Bloomington.
- T. Arabatzis and K. Gavroglu (eds.), *The Cultural History of Quantum Theory* (Crete University Press, 2012), (in Greek).
- T. Arabatzis and K. Gavroglu (eds.), *Einstein & Relativity: Historical Studies* (Crete University Press, 2006), (in Greek).

## **C. Textbooks (in Greek):**

- D. Anapolitanos, T. Arabatzis, V. Karakostas, V. Kindi, *Philosophy of Science* (The Greek Open University, 2003).
- T. Arabatzis, J. Christianidis, D. Dialetis, K. Gavroglu, N. Kanderakis, S. Vernikos, *History of Science and Technology* (Athens, 1999). For a description see T. Arabatzis et al, "History of Science in Greek Schools," *British Society for the History of Science Education Forum*, No. 28 (June 1999), pp. 3-6; and <http://www.iono.noa.gr/hellinomnimon/book%201.htm>

## **D. Articles**

- T. Arabatzis, "Do scientific objects have a life (which may end)?" under review.
- T. Arabatzis, "The electron's hesitant passage to modernity, 1913-1925." In M. Epple and F. Müller (eds.), *Science as Cultural Practice* (Akademie-Verlag, forthcoming).
- T. Arabatzis, "What are scientific concepts?" In K. McCain and K. Kampourakis

(eds.), *What is Scientific Knowledge? An Introduction to Contemporary Epistemology of Science* (Routledge, 2020), pp. 85-99.

- T. Arabatzis, "Explaining science historically," *Isis* 110:2 (2019), 354-359.
- T. Arabatzis, "Engaging philosophically with the history of science: two challenges for scientific realism," *Spontaneous Generations* 9:1 (2018), 35-37.
- T. Arabatzis, "What's in It for the Historian of Science? Reflections on the Value of Philosophy of Science for History of Science," *International Studies in the Philosophy of Science*, 31:1 (2017), 69-82.
- T. Arabatzis and K. Gavroglu, "From discrepancy to discovery: How argon became an element." In T. Sauer & R. Scholl (eds.), *The Philosophy of Historical Case-Studies* (Springer, 2016), pp. 203-222.
- T. Arabatzis, "*The Structure of Scientific Revolutions* and history and philosophy of science in historical perspective." In A. Blum, K. Gavroglu, C. Joas, and J. Renn (eds.), *Shifting Paradigms: Thomas S. Kuhn and the History of Science*. (Berlin: Max Planck Institute for the History of Science, Edition Open Access, 2016), pp. 191-201.
- T. Arabatzis and K. Gavroglu, "Myth 18: That the Michelson-Morley experiment paved the way for the special theory of relativity." In R. L. Numbers and K. Kampourakis (eds.), *Newton's Apple and Other Myths about Science* (Harvard University Press, 2015), pp. 149-156, 254-255.
- T. Arabatzis and N. J. Nersessian, "Concepts out of theoretical contexts." In T. Arabatzis, J. Renn, A. Simões (eds.), *Relocating the History of Science: Essays in Honor of Kostas Gavroglu* (Springer; 2015), pp. 225-238.
- T. Arabatzis and D. Ioannidou, "The role of models and analogies in the Bohr atom." In F. Aaserud and H. Kragh (eds.), *One hundred years of the Bohr atom* (The Royal Danish Academy of Sciences and Letters, 2015), pp. 360-376.
- T. Arabatzis and D. Howard, "Introduction: Integrated history and philosophy of science in practice." *Studies in History and Philosophy of Science*, 50 (2015), 1-3.
- T. Arabatzis, "Experiment." In M. Curd and S. Psillos (eds), *The Routledge Companion to the Philosophy of Science*, 2<sup>nd</sup> ed. (Routledge, 2014), pp. 191-202; an updated version of Arabatzis 2008.
- T. Arabatzis and V. Kindi, "The problem of conceptual change in the philosophy and history of science." In S. Vosniadou (ed.), *International Handbook of Research on Conceptual Change*, 2<sup>nd</sup> ed. (Routledge, 2013), pp. 343-359; a revised and abridged version of Arabatzis & Kindi 2008.
- T. Arabatzis & J. Schickore, "Introduction: Ways of integrating history and philosophy of science." *Perspectives on Science*, 20:4 (2012), 395-408.
- T. Arabatzis, "Experimentation and the meaning of scientific concepts." In U. Feest and F. Steinle (eds.), *Scientific Concepts and Investigative Practice* (de Gruyter, 2012), pp. 149-166.
- T. Arabatzis, "Hidden entities and experimental practice: Renewing the dialogue

between history and philosophy of science." In S. Mauskopf and T. M. Schmalz (eds.), *Integrating History and Philosophy of Science: Problems and Prospects* (Springer, 2012), pp. 125-139.

- T. Arabatzis, "On the historicity of scientific objects." *Erkenntnis*, 75:3 (2011), pp. 377-390.
- T. Arabatzis, "Electron." In *Eine Naturgeschichte für das 21. Jahrhundert: hommage à, zu Ehren von, in honor of Hans-Jörg Rheinberger* (Berlin: Max-Planck-Institut für Wissenschaftsgeschichte, 2011), pp. 231-232.
- T. Arabatzis, "The cognitive permeability of observation," *Noesis* 6 (2010), 91-98 (in Greek).
- T. Arabatzis, "Cathode Rays" & "Electrons". In F. Weinert, K. Hentschel, & D. Greenberger (eds.), *Compendium of Quantum Physics: Concepts, Experiments, History and Philosophy* (Springer, 2009), pp. 89-92, 195-199.
- T. Arabatzis, "Causes and contingencies in the history of science: a plea for a pluralist historiography," *Centaurus* 50 (2008), 32-36.
- T. Arabatzis and V. Kindi, "The problem of conceptual change in the philosophy and history of science." In S. Vosniadou (ed.), *International Handbook of Research on Conceptual Change* (Routledge, 2008), pp. 345-373.
- T. Arabatzis, "Experiment." In S. Psillos and M. Curd (eds.), *The Routledge Companion to the Philosophy of Science* (Routledge, 2008), pp. 159-170.
- T. Arabatzis, "Experimenting on (and with) hidden entities: The inextricability of representation and intervention." In U. Feest, G. Hon, H.-J. Rheinberger, J. Schickore, F. Steinle (eds.), *Generating Experimental Knowledge* (MPIWG preprint 340, 2008), pp. 7-17.
- T. Arabatzis, "Conceptual change and scientific realism: Facing Kuhn's challenge." In S. Vosniadou, A. Baltas, X. Vamvakoussi (eds.), *Reframing the Conceptual Change Approach in Learning and Instruction* (Elsevier 2007), pp. 47-62.
- T. Arabatzis, "On the inextricability of the context of discovery and the context of justification." In J. Schickore and F. Steinle (eds.), *Revisiting Discovery and Justification: Historical and Philosophical Perspectives on the Context Distinction*, Archimedes 14 (Springer, 2006), pp. 215-230.
- T. Arabatzis and K. Gavroglu, "Einstein and the Special Theory of Relativity in History and Philosophy of Science," in Arabatzis & Gavroglu (eds.), *Einstein & Relativity: Historical Studies* (Crete University Press, 2006), pp ix-xlix (in Greek).
- T. Arabatzis and K. Gavroglu, "Physical chemistry." In G. Roberts (ed.), *Chemical History: Reviews of the Recent Literature* (Royal Society of Chemistry, 2005), pp. 135-153.
- T. Arabatzis, "Experiment." In M. Horowitz (ed.), *New Dictionary of the History of Ideas*, Vol. 2 (Detroit: Charles Scribner's Sons, 2005), pp. 765-769.
- T. Arabatzis and K. Gavroglu, "Criogenia, superconduttività e superfluidità." In

*Storia della scienza*, 10 vols., editor-in-chief Sandro Petruccioli (Roma: Istituto della Enciclopedia Italiana, 2001-2004), vol. VIII, 2004, pp. 423-430.

- T. Arabatzis, "Towards a historical ontology?" *Studies in History and Philosophy of Science* **34** (2003), 431-442.
- T. Arabatzis, "Thermodynamics and statistical mechanics." In J. L. Heilbron (ed.), *The Oxford Companion to the History of Modern Science* (Oxford University Press, 2003), pp. 798-799.
- T. Arabatzis and K. Gavroglu, "Entropy." In J. L. Heilbron (ed.), *The Oxford Companion to the History of Modern Science* (Oxford University Press, 2003), pp. 268-269.
- T. Arabatzis, "The Zeeman effect and the discovery of the electron." In J. Z. Buchwald and A. Warwick (eds.), *Histories of the Electron: the Birth of Microphysics* (Cambridge, Mass.: MIT Press, 2001), pp. 171-194.
- T. Arabatzis, "Can a historian of science be a scientific realist?" *Philosophy of Science* **68**, suppl. (2001), S531-S541.
- T. Arabatzis, "History of science and relativism," *Neusis* **9** (2000), 75-93 (in Greek).
- T. Arabatzis, "How the electrons spend their leisure time: Philosophical reflections on a controversy between chemists and physicists." In P. Janich and N. Psarros (eds.), *The Autonomy of Chemistry: 3rd Erlenmeyer-Colloquy for the Philosophy of Chemistry* (Würzburg: Königshausen & Neumann, 1998), pp. 149-159.
- T. Arabatzis and K. Gavroglu, "The chemists' electron," *European Journal of Physics* **18** (1997), 150-163.
- T. Arabatzis, "Rethinking the 'discovery' of the electron," *Studies in History and Philosophy of Modern Physics* **27** (1996), 405-435.
- T. Arabatzis, "Remarks on the historiography of scientific discovery: The case of the electron," *Neusis* **5** (1996), 33-53 (in Greek).
- T. Arabatzis, "Rational versus sociological reductionism: Imre Lakatos and the Edinburgh school." In K. Gavroglu et al. (eds.), *Trends in the Historiography of Science*, Boston Studies in the Philosophy of Science 151 (Dordrecht: Kluwer, 1994), pp. 177-192.
- T. Arabatzis, "The discovery of the Zeeman effect: A case study of the interplay between theory and experiment," *Studies in History and Philosophy of Science* **23** (1992), 365-388.

#### **E. Selected reviews**

- T. Arabatzis, Review of J. Navarro (ed.), *Ether and Modernity* (Oxford: Oxford University Press, 2018), *Centaurus*, 2020, DOI: 10.1111/1600-0498.12265.
- T. Arabatzis, Review of J. Schickore, *About Method: Experimenters, Snake Venom, and the History of Writing Scientifically* (Chicago: University of Chicago

Press, 2017), *Berichte zur Wissenschaftsgeschichte* **41** (2018), 473-474.

- T. Arabatzis, "How *Physica* Became Physics," Review of J. L. Heilbron, *Physics: A Short History from Quintessence to Quarks* (Oxford: Oxford University Press, 2015), *Science & Education* **27** (2018), 211-218.
- T. Arabatzis, Review of A. Franklin, *What Makes a Good Experiment?* (Pittsburgh: University of Pittsburgh Press, 2016), *Isis* **109** (2018), 146-147.
- T. Arabatzis, Review of Jaume Navarro, *A History of the Electron: J. J and G. P. Thomson* (Cambridge: Cambridge University Press, 2012). *Isis* **106** (2015):204-205.
- T. Arabatzis, Review of Jimena Canales, *A Tenth of a Second: A History* (Chicago: University of Chicago Press, 2009), *Isis* **102** (2011), 774-775.
- T. Arabatzis, Review of Pierre Duhem: *ΣΩΖΕΙΝ ΤΑ ΦΑΙΝΟΜΕΝΑ*, *Neusis* **18** (2009), 276-277 (in Greek).
- T. Arabatzis, Review of M. Norton Wise (ed.), *Growing Explanations: Historical Perspectives on Recent Science* (Durham: Duke University Press, 2005), *Centaurus* **49** (2007), 178-179.

### Invited talks

- "The contingentism/inevitabilism debate and its implications for the historiography of science", *Is a Radically Different Science Plausible? Path Dependence and the Contingency of Scientific Results*, International Conference, Nancy, France, December 18-19, 2019.
- "Rethinking the project of philosophical history of science," Department of Philosophy & Center for History of Science (CEHIC), Autonomous University of Barcelona, 14 June 2019.
- "Creating a historical effect: Biographies of scientific objects," *Looking Back as We Move Forward: A Conference in Honor of Jed Z. Buchwald*, Caltech, 26-27 April 2019.
- "Rethinking the project of philosophical history of science," Mara Beller Memorial Lecture, Van Leer Jerusalem Institute, 14 March 2019.
- "Do scientific objects have a life (which may end)?" University of Cambridge, 3-4 December 2018.
- "The Weimar Republic and the crisis in the foundations of physics," The Historical Archive of the University of Athens, Athens, 11-12 May 2018.
- "Introductory remarks," CERN History Days, CERN, Geneva, 1-2 February 2018.
- "What's in it for the historian of science? Reflections on the value of philosophy of science for history of science," IUHPST Essay Prize Lecture, 25<sup>th</sup> International Congress of History of Science and Technology, Rio de Janeiro, 23-29 July 2017.
- "Conceptual change and philosophical history of science," *Conceptual Change in History*, University of Helsinki, September 22-24, 2016.



- "Perspectival realism about what? Tracking the electron across shifting theoretical perspectives," *Perspectival Modelling: Pluralism & Integration*, University of Edinburgh, 2-3 July 2016.
- "Fading away: How the lives of scientific objects end," *Transformation, Degradation, Disappearance of Scientific Objects*, The Institute of Philosophy of the Czech Academy of Sciences, 14-15 June 2016.
- "A philosophical history of the discovery of argon," *Knowledge, Technologies, and Mediation: A Workshop in Honor of Norton Wise*, Department of History, UCLA, 17 October 2015.
- "Experiment in historical & philosophical perspective," CITA | Centre for Information Technology and Architecture, Royal Academy of Fine Arts, School of Architecture, Copenhagen, 18 September 2015.
- "A historian's perspective on integrated HPS," IUC Philosophy of Science Conference, *Philosophy of the History of Science*, Dubrovnik, 17 April 2015.
- "The history and prospects of integrated HPS," The Faculty of Humanities, The Hebrew University of Jerusalem, 21 January 2015.
- "Experimentation and the meaning of scientific concepts: The philosophy of experiment meets the causal theory of reference," The Cohn Institute for the History and Philosophy of Science and Ideas, Tel Aviv University, 19 January 2015.
- "Integrated HPS in historical perspective," International Summer School in Social and Historical Epistemology, University of Pécs (Hungary), 30 June – 8 July 2014.
- "That the Michelson-Morley experiment paved the way for the special theory of relativity: The Myth that Isn't," *Conference: Newton's apple and other historical myths about science*, Washington & Lee University, Lexington, Virginia, 9-10 May 2014.
- "Telling (and evaluating) philosophical tales about the scientific past," *International Workshop: The Philosophy of Historical Case Studies*, Bern, 21-22 November 2013.
- "The prospects of integrated HPS: Historical philosophy of science and philosophical history of science," *Science and Reality Conference*, Rotman Institute of Philosophy, Western University, London, Ontario, Canada, 5-6 October 2013.
- "What is wrong with the received view of the discovery of the electron?" Institute of Physics and Astronomy, University of Aarhus, 26 June 2013.
- "Philosophical history of science," Hungarian Academy of Sciences, Budapest, 15 May 2013.
- "*The Structure of Scientific Revolutions* and the prospects of philosophical history of science," *Conference: Towards a history of the history of science: 50 years since "Structure"*, Max Planck Institute for the History of Science, Berlin, 17-20 October 2012.

- "Scientific realism and the history of experimentation," *Conference: Scientific realism in light of the history of science*, Dept. of Philosophy, Durham University, 7-8 September 2012.
- "Theoretical concepts and experimental practice," Institut für Philosophie, Universität Bonn, 10 November 2011.
- "The prospects of integrating history and philosophy of science," Centre for the History of Science, Universitat Autònoma de Barcelona, 26 June 2011.
- "Forming a concept vs discovering an entity: the case of the electron," *Conference: Concepts, Induction, and the Growth of Knowledge*, Dept. of History and Philosophy of Science, Univ. of Pittsburgh, 17-19 Sept. 2010.
- "Analogies in Bohr's atomic model," Historisches Institut, Abt. für Geschichte der Naturwissenschaften und Technik, Universität Stuttgart, 22 June 2010.
- "The historicity of scientific objects," Institut d'histoire et de philosophie des sciences et des techniques, Université Paris-1, 19 May 2010.
- "Experimentation and the meaning of scientific concepts," L'École des hautes études en sciences sociales, Paris, 17 May 2010.
- "Hidden entities and experimental practice: renewing the dialogue between history and philosophy of science," Equipe REHSEIS - Université Paris 7, 11 May 2010.
- "The memory of concepts: a subject for historical epistemology," *Conference: Historical Epistemology*, Institute of Philosophy of the University of Leuven, Leuven, 10-12 December 2009.
- "Biographies of theoretical entities vs. scientific biographies," *Conference: The Sciences in Historical and Philosophical Context*, Universität Wien, 27th-28th November 2009.
- "Experimentation and the meaning of scientific concepts," *Workshop: Scientific Concepts and Investigative Practice*, Technische Universität, Berlin, 22-23 May 2009.
- "Hidden entities and experimental practice: towards a two-way traffic between history and philosophy of science," The Vienna Circle Institute, Universität Wien, 15 October 2008.
- "The historicity of scientific objects: from cathode rays to electrons," *Conference: What (Good) Is Historical Epistemology?* Max Planck Institute for the History of Science, Berlin, 24-26 July 2008.
- "Experimenting on (and with) hidden Entities: the inextricability of representation and intervention," *Workshop: Generating Experimental Knowledge*, Bergische Universität Wuppertal, Wuppertal, 14-16 June 2007.
- "The electron's hesitant passage to modernity, 1913-1925," *Conference: Modernism in the Sciences, ca. 1900-1940*, Universität Frankfurt am Main, Frankfurt, 22-24 March 2006.

- "Conceptual change and scientific realism: Facing Kuhn's challenge," *European Association for Research on Learning and Instruction, 4<sup>th</sup> European Symposium, Conceptual Change*, Delphi, 19-23 May 2004.
- "Hypothetical demonstration or 'conceptual construction backwards: Comments on Jim Lennox and Roger Ariew," *Proof and Demonstration in Philosophy and Science: The 4th Athens-Pittsburgh Symposium in the History and Philosophy of Science and Technology*, Delphi, 1-6 June 2003.
- "On the inextricability of the context of discovery and the context of justification," *Conference: Revisiting Discovery and Justification*, Max Planck Institute for the History of Science, Berlin, 28 February-3 March 2002.
- "Revisiting the discovery of the electron: what is wrong with the received view?" Johannes Gutenberg-Universität Mainz, 21 February 2002.
- "The discovery of the electron and the atomism debate," Dibner Institute for the History of Science and Technology, MIT, 1 May 2001.
- "Fashioning a quantum identity: a chapter from the life of the electron," *Conference: The Electron and the Birth of Microphysics*, Dibner Institute, MIT, Boston, 9-10 May 1997.
- "The electron and the construction of the 'old' quantum theory: a chapter from the biography of a theoretical entity," *Conference of the British Society for the History of Science: The Electron, 100 Years of Physics and History*, Science Museum, London, 18-19 April 1997.
- "How the electrons spend their leisure time: methodological reflections on a controversy between chemists and physicists," *The 3rd Erlenmeyer-Colloquy for the Philosophy of Chemistry at the University of Marburg*, Marburg, 16-17 September 1996.
- "Rational or sociological reconstruction of science?" *Conference: Contemporary Trends in the Historiography of Science*, Corfu, 27 May -1 June 1991.

#### **Presentations in international conferences**

- "Explaining Science Historically," *1<sup>st</sup> Conference of the International Academy of the History of Science*, 12-15 September 2019, Athens, Greece.
- "Revisiting the Crisis in High Energy Physics," *1<sup>st</sup> Conference of the International Academy of the History of Science*, 12-15 September 2019, Athens, Greece (with G. Panoutsopoulos).
- "CERN's Balancing Act: Between Unity and Disunity," *4th Early-Career Conference for Historians in the Physical Sciences of the American Institute of Physics*, Donostia-San Sebastian (Spain), 17-20 October 2018 (with G. Panoutsopoulos).
- "The (Dis-)unity of CERN," *European Society for the History of Science & British Society for the History of Science*, London, 14-17 September 2018 (with G. Panoutsopoulos).

- "Commentary on Concept Formation in the Physical Sciences," *25th International Congress of History of Science and Technology*, Rio de Janeiro, 23-29 July 2017.
- "Perspectival realism about what? Tracking the electron across shifting theoretical perspectives," *Meeting of the Philosophy of Science Association*, Atlanta, 2-5 November 2016.
- "The turn to practice and the rapprochement between history and history of science," *International Conference: History of 20<sup>th</sup> Century Historiography*, University of Athens, 18-20 June 2015.
- "Concepts out of theoretical contexts," *Relocating the History of Science: Conference in Honor of Kostas Gavroglu*, co-organized by the Department of Philosophy & History of Science, University of Athens and the Max Planck Institute for the History of Science, Athens, 15 May 2015. (With Nancy J. Nersessian)
- "Revisiting the discovery of argon," *Annual Meeting of the History of Science Society*, Chicago, Illinois, 6-9 November 2014. (With Kostas Gavroglu)
- "The philosophy of experiment meets the causal theory of reference," *Workshop on Experiment, Conceptual Change, and Scientific Realism*, University of Athens, 2-3 May 2014.
- "The role of models and analogies in the Bohr atom," *One hundred years of the Bohr atom, 1913–2013*, Niels Bohr Archive, Copenhagen, 12-14 June 2013. (With Despina Ioannidou)
- "Modeling the atom in early 20th century," *Values and Norms in Modeling 2012*, Eindhoven University of Technology, Eindhoven, 25-27 June 2012. (With Despina Ioannidou)
- "Experimentation and the meaning of scientific concepts," *2nd Conference of the European Philosophy of Science Association*, VU University Amsterdam, 21-24 October 2009.
- "The mediating role of models in conceptual transitions: How the electron became a quantum entity," *COGSCI 2009, The Annual Meeting of the Cognitive Science Society*, VU University Amsterdam, 29 July – 1 August 2009. (With Despina Ioannidou)
- "Truth and historical interpretation: Kuhn versus the analytic philosophical tradition," *Conference on T. S. Kuhn's The Structure of Scientific Revolutions: Impact, Relevance and Open Issues*, Athens, 21-23 August 2008.
- "Rethinking the theory-ladenness of observation: implications of the new experimentalism," *1<sup>st</sup> Conference of the European Philosophy of Science Association*, Complutense University, Madrid, 14-17 November 2007.
- "Hidden entities and experimental practice: towards a two-way traffic between history and philosophy of science," *&HPSI: Conference in Integrated History and Philosophy of Science*, Center for Philosophy of Science, University of Pittsburgh, 11-14 October 2007.

- "Relativism and the history of science," *The 4<sup>th</sup> Bogazici University-Athens University Conference: Universalism/Realism vs. Culturalism/Relativism: Philosophical, Historical, and Political Perspectives*, Bogazici University, 18-20 May 2006.
- "The historiography and the philosophy of science: Towards a two-way traffic," *Conference of the British Society for the History of Philosophy: Philosophy and Historiography*, Robinson College, Cambridge, 3-5 April 2006.
- "Armchair principles of charity and the practice of historical interpretation," *Translation and Interpretation, International Symposium in collaboration with the European Center of Translation*, Paros, 25-26 March 2006.
- "Misinterpreting (correct) experimental results: Kaufmann's rejection of the particulate interpretation of cathode rays," *Meeting of the History of Science Society*, Austin, Texas, 18-21 November 2004.
- "The relevance of philosophy of science to history of science," *Conference of the International Union of History and Philosophy of Science: New perspectives on the relation between history and philosophy of science*, Paris, 3-5 October 2002.
- "Can a historian of science be a scientific realist?" *Meeting of the Philosophy of Science Association*, Vancouver, 2-5 November 2000.
- "The discovery of the electron and the atomism debate," *Meeting of the History of Science Society*, Vancouver, 2-5 November 2000.
- "The historicity of scientific realism: reflections on meaning variance," *Conference: Incommensurability (and related matters)*, Universität Hannover, 13-16 June 1999.
- "Rethinking scientific discovery," *International Congress on Discovery and Creativity*, Gent, 14-16 May 1998.
- "The Zeeman effect and the construction of the concept of the electron," *Joint Annual Meeting of the History of Science Society and the Society for the History of Technology*, Madison, Wisconsin, 30 October - 3 November 1991.
- "The discovery of the Zeeman effect: A case study of the interplay between theory and experiment," *Joint Atlantic Seminar in the History of the Physical Sciences*, Harvard University, Boston, 20-21 April 1991.

## Teaching Experience

### Undergraduate Courses

- *Science in the Modern World*, Assistant in Instruction (Instructor: Nancy Nersessian), Princeton University
- *Technologies and their Societies: Historical Perspectives*, Assistant in Instruction (Instructor: Michael Mahoney), Princeton University
- *Introduction to Newtonian Mechanics and Special Relativity*, National and Kapodistrian University of Athens (NKUA)

- *Philosophy of Science in the 20<sup>th</sup> Century*, NKUA
- *Topics in Philosophy of Science: Explanation, Confirmation, Realism*, NKUA
- *Philosophy of the Physical Sciences*, NKUA
- *History of Philosophy of Science*, NKUA
- *Introduction to the History of Science*, University of Crete
- *The Scientific Revolution*, NKUA
- *The Scientific Revolution*, University of Bogazici Summer School, Istanbul
- *Science in the 18<sup>th</sup> and 19<sup>th</sup> Centuries*, NKUA
- *Special Topics in History of Science: 19<sup>th</sup> Century Physics*, Senior Seminar, NKUA
- *History of the Physical Sciences*, NKUA
- *Special Topics in the History of the Physical Sciences: The Making of the Atomic Bomb*, Junior & Senior Seminar, NKUA
- *Women in the History of Science*, NKUA

#### **Graduate Seminars**

- *Scientific Realism*, NKUA & National Technical University of Athens (NTUA)
- *Contemporary Trends in Philosophy of Science*, NKUA & NTUA
- *The Problem of Theoretical Concepts*, NKUA & NTUA
- *On the Very Idea of a Conceptual Scheme*, NKUA & NTUA
- *Scientific Representations: Theories and Models*, NKUA & NTUA
- *Scientific Objectivity*, NKUA & NTUA
- *The Relationship between History and Philosophy of Science*, NKUA & NTUA
- *Styles of Scientific Reasoning*, NKUA & NTUA
- *Introduction to the Historiography of Science*, Institut Francais De Thessalonique
- *Historiography of Science*, NKUA & NTUA
- *History of 18<sup>th</sup> and 19<sup>th</sup> Century Science*, NKUA & NTUA
- *Hidden Entities in the Physical Sciences*, NKUA & NTUA
- *History of Early 20<sup>th</sup> Century Physics*, Institut Français De Thessalonique
- *History of 20<sup>th</sup> Century Physics*, NKUA & NTUA
- *The Making of the Atomic Bomb*, NKUA & NTUA
- *The Commercialization of Science*, NKUA & NTUA
- *Philosophical Approaches to the History of Science*, NKUA & NTUA
- *The Process of Scientific Discovery*, NKUA & NTUA

- *The History and Philosophy of Experiment*, NKUA & NTUA
- *The Problem of Demarcation: The Distinction between Science & Pseudoscience*, NKUA & NTUA
- *Science & Values*, NKUA & NTUA
- *Big Science: The Physical Sciences after World War II*, NKUA & NTUA
- *Historical Epistemology*, NKUA & NTUA
- *Topics in the Historiography of Science*, NKUA & NTUA
- *Social Constructionism*, NKUA & NTUA