

Mail: Department of Philosophy
University of Kentucky
1415 Patterson Office Tower
Lexington, KY 40506

jrbursten@uky.edu
Website: <http://www.juliabursten.org>
Office: 859-257-6540
Mobile: 614-571-4216

Dr. Julia R. S. Bursten

Employment

- 2016– Assistant Professor of Philosophy, University of Kentucky
Affiliated Faculty, Gender and Women's Studies
- 2015–2016 Assistant Professor of Philosophy, San Francisco State University

Education

- 2015 Ph.D., History and Philosophy of Science, University of Pittsburgh
- 2011 MA, Philosophy, University of Pittsburgh
- 2008 BA, Philosophy, Rice University

Research

Areas of Research

- AOS: Philosophy of Science, Philosophy of Chemistry, Philosophy of Physics
- AOC: History of Science, Feminist Philosophy of Science, Analytic Philosophy

Edited Volume

- 2019 *Perspectives on Classification in Synthetic Sciences: Unnatural Kinds*. Routledge
Studies in the History and Philosophy of Technoscience.

Articles

- Forth. 'The Function of Boundary Conditions in the Physical Sciences.' *Philosophy of Science*.
- Forth. 'Computer Simulations.' In Mody, C. and J Martin, eds., *Encyclopedia of the Development and History of Materials Science: Tools in Materials Research*. World Scientific Publishing Company.
- Forth. [with C. Grimsley and E. Mayfield] 'Why Attention is Not Explanation: Surgical Intervention and Causal Reasoning about Neural Models.' *Proceedings of the 2020 Language Resources and Evaluation for Language Technologies Conference*.
- 2020 'Lab Report: Lessons from a Multi-Year Collaboration Between Nanoscience and Philosophy of Science.' In Brister, E. and R Frodeman, eds, *A Guide to Field Philosophy: Case Studies and Practical Strategies*. Routledge.

- 2018 'Conceptual Strategies and Inter-Theory Relations: The Case of Nanoscale Cracks.' *Studies in History and Philosophy of Science Part B: Studies in History and Philosophy of Modern Physics* 62.
- 2018 [with S. Finkelstein] 'Promoting Cognitive Conflict in Health Care Ethics: Moral Reasoning with Boundary Cases.' *Proceedings of the International Conference on the Learning Sciences, RIPI-ICLS* 2128.
- 2016 'Smaller than a Breadbox: Scale and Natural Kinds.' *British Journal for the Philosophy of Science* 69(1).
- 2016 [with J. Millstone and M. Hartmann] 'Conceptual Analysis for Nanoscience.' *Journal of Physical Chemistry Letters* 7(10).
- 2014 'Microstructure without Essentialism: A New Account of Chemical Kinds.' *Philosophy of Science* 81(4).
- 2012 'Pauling's Defence of Bent-Equivalent Bonds: A View of Evolving Explanatory Demands in Chemistry' in *Annals of Science* 69(1).

Reviews and Shorter Pieces

- 2019 'Field Notes on Conference Climate: A Decade with the Philosophy of Science Association Women's Caucus.' *American Philosophical Association Newsletter on Feminism and Philosophy*. Vol. 19 (1). Available at https://www.apaonline.org/page/feminism_newsletter?
- 2019 Review of *Macroscopic Metaphysics: Middle-sized Objects and Longish Processes*, by Paul Needham. *International Studies in the History and Philosophy of Science*. Vol. 33.
- 2018 'How Should We Be Feminists in our Classrooms?' *Science Visions*. January 2018. Available at <https://womenscaucus.philsci.org/blog-article-pages/97-how-should-we-be-feminists-in-our-classrooms>
- 2017 Review of *Essays in the Philosophy of Chemistry* edited by Eric Scerri and Grant Fisher. *British Journal for the Philosophy of Science Book Reviews* 2017. <http://bit.ly/2pSJkAx>
- 2016 [with M. Roco, J. Schummer, P. Weiss, et al.] 'Nano on Reflection.' *Nature Nanotechnology* 11(10).
- 2016 Review of *Toward a New Dimension: Discovering the Nanoscale* by Anne Marcovich and Terry Shin. *Isis*. December 2016
- 2016 'On the Semiotics of the "I Bicep-Heart-Vaguterus Girls Who Powerlift" Shirt.' *Fit is a Feminist Issue* guest post, March 4, 2016. Available at <https://fitisafeministissue.com/2016/03/04/on-the-semiotics-of-the-i-bicep-heart-vaguterus-gwpl-shirt-guest-post/>.
- 2015 'Leveling the Job Market Playing Field: Let's All Get ByCommittee.' *Science Visions*. August 2015. Available at <https://womenscaucus.philsci.org/blog-article-pages/41-leveling-the-job-market-playing-field-let-s-all-get-bycommittee>.
- 2011 Review of *The Disappearing Spoon, and Other True Tales of Madness, Love, and History of the World from the Periodic Table of the Elements* by Sam Kean. *Spontaneous Generations* 5(1).

Presentations

- 2020 'Scale Separation, Scale Dependence, and Multiscale Modeling' University of Tennessee Department of Philosophy Colloquium Series. Knoxville, TN.
- 2019 'Matters of Scale and Scales of Matter: Conceptual Challenges in Multiscale Modeling of Nanomaterials.' University of Cincinnati Department of Philosophy Seminar Series. Cincinnati, OH.
- 2019 'Philosophy for Applied Science: Using Philosophy of Science in Nanoscience and Agricultural Science.' University of Kentucky Department of Plant Pathology Seminar Series. Lexington, KY
- 2019 'Scale Separation, Scale-Dependence, and Multiscale Modeling in the Physical Sciences: A Tour Through Philosophical Issues in Nanoscience.' International Congress on Logic, Methodology, and Philosophy of Science and Technology. Prague, CZ.
- 2019 'Scale Separation, Scale-Dependence, and Multiscale Modeling in the Physical Sciences.' American Philosophical Association–Pacific Division Meeting. Vancouver, BC.
- 2019 'Scale Separation, Scale-Dependence, and Multiscale Modeling in the Physical Sciences.' South Carolina Department of Philosophy Colloquium Series. Columbia, SC.
- 2018 'Nucleation as Universal Behavior.' Philosophy of Science Association Biennial Meeting. Seattle, WA.
- 2018 'Against the Hierarchical View of Theories.' Society for the Philosophy of Science in Practice Biennial Meeting. Ghent, BE.
- 2018 'Promoting Cognitive Conflict in Health Care Ethics.' International Conference on the Learning Sciences. London, UK.
- 2018 'Classification in Nanoscience and Synthetic Biology.' TU–Darmstadt Compu-Gene Summer School. Darmstadt, DE.
- 2018 'Inter-Theory Relations and Shape Memory Alloys.' Second Georgetown Active Materials Project Summer School. Washington, DC.
- 2018 'Philosophical Issues in Nanoscience.' Centre College Seminar in Physics and Philosophy. Danville, KY.
- 2018 'Philosophical Issues in Condensed Matter Physics.' University of Kentucky Department of Physics Seminar Series. Lexington, KY.
- 2018 'Conceptual Concerns for Nanoscience.' Mid-South Philosophy of Science Workshop. Lexington, KY.
- 2018 'Against the Hierarchical View of Theories.' Models and Simulations 8. Columbia, SC.
- 2017 'Conceptual Analysis and Chemical Information: A Philosophical Case Study in Nanoscience.' National Meeting of the American Chemical Society. San Francisco, CA.

- 2017 ‘Nanoscale Materials and Active Materials.’ Georgetown Active Materials Project Summer School. Washington, DC.
- 2017 ‘Philosophical Issues in Modeling Nanoscale Systems.’ University of Kentucky Department of Chemical and Materials Engineering Seminar Series. Lexington, KY.
- 2017 ‘Multi-Scale Modeling and Inter-Theory Relations.’ TU–Darmstadt CompuGene Winter School. Darmstadt, DE.
- 2016 ‘Multi-Scale Modeling in Nanoscience.’ Philosophy of Science Association Biennial Meeting. Atlanta, GA.
- 2016 ‘Multi-Scale Modeling: Beyond Hierarchical Relations.’ Society for the Philosophy of Science in Practice Biennial Meeting. Glassboro, NJ.
- 2016 ‘Multi-Scale Modeling in Nanoscience.’ Boston University Colloquium on Methodological Issues in Multi-Scale Modeling, Boston Center for the Philosophy and History of Science. Boston, MA.
- 2016 ‘Smaller Than A Breadbox: Classification at the Nanoscale.’ Unnatural Kinds Workshop, San Francisco, CA.
- 2016 ‘Boundary Work: Collaboration Between Philosophy of Science and Nanoscience.’ University of Kentucky Department of Philosophy Colloquium Series, Lexington, KY.
- 2016 ‘Multi-Scale Modeling: Beyond Non-Mereological Relations.’ Southern California Philosophy of Physics Workshop Series, Irvine, CA.
- 2016 ‘Matters of Scale: Explanatory Strategies in Nanoscience.’ University of California–Irvine Department of Logic and Philosophy of Science Colloquium Series, Irvine, CA.
- 2016 ‘Reconciling Physical and Biological Metaphysics of Structure.’ Comments on CK Waters, “How Science Can Inform Metaphysics: Insights from Biological Practice,” American Philosophical Association–Pacific Division Meeting, San Francisco, CA.
- 2016 ‘Boundary Work: Collaboration Between Philosophy of Science and Nanoscience.’ Purdue Lectures in Ethics, Policy, and Science, West Lafayette, IN.
- 2016 ‘*Surface* Tension.’ University of Washington Department of Philosophy Colloquium Series, Seattle, WA.
- 2015 ‘Boundary Work: Philosophy Meets Nanoscience.’ Society for Philosophy of Science in Practice Biennial Meeting. Aarhus, DK.
- 2015 ‘Philosophy of Science as Scientific Problem-Solving.’ SPSP pre-conference workshop on teaching philosophy of science to scientists. Aarhus, DK.
- 2015 ‘*Surface* Tension.’ Irvine–Pittsburgh–Princeton Graduate Conference in Philosophy of Physics. Princeton, NJ.
- 2015 ‘Multi-Scale Modeling: Beyond Anti-Mereological Relations.’ Bay Area Philosophy of Science colloquium series. Davis, CA.

- 2015 ‘Challenges to Philosophy of Science from Nanoscience.’ John Templeton Foundation Reduction and Emergence in Physics Project, Workshop on Multi-Scale Modeling, Pittsburgh, PA.
- 2015 ‘*Surface* Tension.’ University of Illinois–Urbana-Champaign Department of Philosophy Colloquium Series, Champaign-Urbana, IL.
- 2015 ‘*Surface* Tension.’ San Francisco State University Department of Philosophy Colloquium Series, San Francisco, CA.
- 2015 ‘*Surface* Tension.’ University of Kentucky Department of Philosophy Colloquium Series, Lexington, KY.
- 2014 ‘*Surface* Tension: Scale and Conceptual Change in Philosophy of Nanoscience.’ Chemical Structure Symposium, Philosophy of Science Association Biennial Meeting, Chicago, IL.
- 2014 ‘Boundary Work: Nanoscience Meets Philosophy at Material Surfaces.’ History of Interdisciplinarity Symposium, History of Science Society Annual Meeting, Chicago, IL.
- 2014 ‘*Surface* Tension: How Nanoscience Challenges Traditional Theories of Explanation,’ International Society for the Philosophy of Chemistry Annual Meeting, London, UK.
- 2014 ‘The Structure–Property Paradigm in Chemistry and Nanoscience,’ Structure in Chemistry and Physics Workshop Series, Durham, UK.
- 2014 ‘*Surface* Tensions,’ Carnegie Mellon University Department of Philosophy Colloquium Series, Pittsburgh, PA.
- 2013 ‘Epistemology and the Synthetic: Lessons from Nanosynthesis,’ *Methods for Making* symposium at 4th Biennial Society for Philosophy of Science in Practice Meeting, Toronto, ON.
- 2013 ‘Toward a Philosophy of Synthetic Science.’ Rice University Cultural Studies of Science, Technology, Engineering, Mathematics and Medicine Lecture Series, Houston, TX.
- 2012 ‘Reconsidering Explanation: Lessons from Nanosynthesis.’ Philosophy of Science Association Biennial Meeting, San Diego, CA.
- 2012 ‘Nanosurfaces: How Scale Can Shape Structure and Behavior.’ Structure in Chemistry and Physics Workshop Series, Chemical Heritage Foundation, Philadelphia, PA.
- 2011 ‘Bonding in Hypervalent Molecules.’ *Is There a Nature of the Chemical Bond?* symposium at European Philosophy of Science Association conference, Athens, GR.
- 2011 ‘Studies in Chemical Explanation: Structure and Synthesis.’ 3rd Biennial Society for Philosophy of Science in Practice Meeting, Exeter, UK.
- 2010 ‘Whence the Defense of the Banana Bond.’ History of Science Society Annual Meeting, Montréal, QC.
- 2010 ‘Characterizing Explanations of Chemical Bonds.’ Models and Simulations 4, Toronto, ON.

2010 ‘How Pauling Bent the Double Bond.’ Special Collections Resident Scholar Lecture Series, Oregon State University, Corvallis, OR.

Grants, Fellowships, and Awards

2019 SEC U Faculty Exchange Fellowship, “Philosophy of Nanoscience in South Carolina.”

2018 University of Kentucky Office for the Vice President of Research grant, “Hosting a Regional Philosophy of Science Conference”

2018 Sustainable Pedagogies Workshop Fellowship

2017 University of Kentucky Office for the Vice President of Research grant, “Building a Regional Network for Philosophy of Science”

2012 Finalist, National Science Foundation Graduate Research Fellowship Program “Creating the Future” Research Video Competition (video available [here](#))

2011 Society for the History of Alchemy and Chemistry Young Scholar Fellowship

2010 Linus Pauling Resident Scholar Fellowship

2010–2015 National Science Foundation Graduate Research Fellowship

Professional Service

2019–2020 Program Committee, Philosophy of Science Association 2020 Biennial Meeting

2018– Steering Committee, Society for the Philosophy of Science in Practice

2015–2018 Co-Chair, Philosophy of Science Association Women’s Caucus
Founding Editor, [Science Visions](#) newsletter

2018– Founder and Network Administrator, Mid-South Philosophy of Science Network

2019 Organizer and Host, Mid/South Philosophy of Science Conference 1, Lexington, KY.

2018–2020 Associate Editor, *Engineering Studies*

2018 Organizer and Host, Inaugural Mid-South Philosophy of Science Workshop, Lexington, KY.

2018 Program Committee, Models and Simulations 8.

2017–2018 Philosophy of Science Association Committee on Outreach and Engagement

2016–2017 Philosophy of Science Association Committee on Diversity and Climate

2016 Panelist, SPSP Pre-Conference Workshop on Qualitative Methods in Philosophy of Science, Glassboro, NJ

2016 Co-Organizer and Host, Unnatural Kinds Workshop, San Francisco, CA

Reviewer for *British Journal for the Philosophy of Science*, *Philosophy of Science*, *Studies in the History and Philosophy of Science*, *Studies in the History and Philosophy of Modern Physics*, *Synthese*, *Biology and Philosophy*, *Erkenntnis*, *Mind*, *Pacific Philosophical Quarterly*, *European Journal for Philosophy of Science*, *Journal of Philosophical Logic*, *Canadian Journal of Philosophy*, *Dialectica*, *Science Education*, *Oxford University Press*

University Service

<i>2020–</i>	Lunsford Scholars Committee
<i>2020</i>	Philosophy Department Graduate Admissions Committee
<i>2019–2020</i>	Philosophy Department Executive Committee
<i>2017–2018</i>	Co-Chair, Programming Committee, Keys To Our Common Future: A Year of Events on Civics and Citizenship (University of Kentucky College of Arts and Sciences)
<i>2017–2018</i>	Philosophy Department Executive Committee
<i>2016</i>	Panelist, Frontiers in Genetics and Genomics: A Panel Discussion in Honor of T.H. Morgan's 150th Birthday. Lexington, KY

Teaching

University of Kentucky

<i>Fall 2019</i>	PHI 120 Introduction to Logic
	PHI 305 Health Care Ethics
	PHI 395 Independent Work in Philosophy: Science and Values
	PHI 740 Departmental Teaching Practicum
<i>Spring 2019</i>	PHI 305 Health Care Ethics
	PHI 560 Philosophy of the Scientific Method
<i>Fall 2018</i>	PHI 300H The Interplay of Science and Religion
	PHI 650 Seminar in the Philosophy of Physics
	PHI 740 Departmental Teaching Practicum
<i>Spring 2018</i>	PHI 515 Analytic Philosophy
<i>Fall 2017</i>	PHI 120 Introduction to Logic
	PHI 305 Health Care Ethics
<i>Spring 2017</i>	BIO 180 The Interplay of Science and Religion <i>with Phil Crowley</i>
	PHI 305 Health Care Ethics
	PHI 560 Philosophy of the Scientific Method
<i>Fall 2016</i>	PHI 120 Introduction to Logic
	PHI 305 Health Care Ethics

San Francisco State University

<i>Spring 2016</i>	Seminar in Philosophical Writing
	Seminar in Natural Kinds
<i>Fall 2015</i>	Philosophy of Science
	Seminar in Philosophical Writing
	MA Comprehensive Exam Tutorial on <i>Enquiry Concerning Human Understanding</i>

University of Pittsburgh

<i>Spring 2014</i>	Space, Time, and Matter. <i>Independently taught course</i>
<i>Fall 2010</i>	Myth and Science. <i>Independently taught course</i>
<i>Spring 2010</i>	Einstein: Modern Science and Surprises. <i>TA to John Norton</i>
<i>Fall 2009</i>	Introduction to the Philosophy of Science. <i>TA to Michela Massimi</i>

Student Mentorship

Ph.D. Committee Membership

(Co-Chair) Christopher Grimsley, Philosophy*
Lauren Dickey, Philosophy*
Drew van't Land, Philosophy*
Justin Price, Philosophy, University of South Carolina*
Kaylynne Glover, UK Biology*
Josiah Roberts, UK Chemistry*

MA Committee Membership

<i>2017</i>	(Co-Chair) Monika Chao, SFSU (now a Ph.D. student at UC–Berkeley), “Heard But Misunderstood: Understanding Reactions to Female Vocal Fry.”
<i>2017</i>	Aaron Chavez, SFSU (now a Ph.D. student at UC–Davis), “Error in Scientific Practice: On Inference, Measurement Robustness, and Theory-Guidance.”
<i>2017</i>	Ian York, SFSU (now a Ph.D. student at Syracuse U.), “A Limit Case to Camp’s Semantics of Slurs.”
<i>2016</i>	(Chair) Robert Kok (now a Ph.D. student at U. Utah), “Toward a Minimal Account of Natural Kinds.”

Undergraduate and Secondary Thesis Advising

<i>2021*</i>	Stephen Perry, University of Kentucky, “Modeling Between Physics and Mathematics in Boundary Layer Theory”
<i>2020*</i>	Madison von Deylen, University of Kentucky, “The Intersection of Biology and Culture in Rape Behaviors”
<i>2019</i>	Beau Revlett, University of Kentucky, “Improving Three Formal Methods for Social Justice Practice”
<i>2015</i>	Simone Traub, Pittsburgh Science and Technology Academy, “Big Science, Little Science, and the Public”
<i>2014</i>	Alexandra Krongel, University of Pittsburgh, “Women and Alchemical Thought in the Middle Ages”

*In progress