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## Dr. Julia R. Bursten

### Employment

2016– Assistant Professor of Philosophy, University of Kentucky  
2015–2016 Assistant Professor of Philosophy, San Francisco State University

### Education

2015 Ph.D., History and Philosophy of Science, University of Pittsburgh  
Dissertation: *Surfaces, Scales, and Synthesis: Scientific Reasoning at the Nanoscale*  
Supervisor: Robert Batterman  
2011 MA, Philosophy, University of Pittsburgh  
2008 BA, Philosophy, Rice University  
Honors Thesis: *Selecting a Structure of Scientific Communication*  
Supervisor: Melinda Fagan

### Research

#### Areas of Research

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

#### Publications

2016 [with M. Roco, J. Schummer, P. Weiss, et al.] ‘Nano on Reflection.’ *Nature Nanotechnology* 11(10).  
2016 ‘Smaller than a Breadbox: Scale and Natural Kinds.’ *British Journal for the Philosophy of Science* December 2016.  
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).

## Book Reviews

- 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 Review of *Toward a New Dimension: Discovering the Nanoscale* by Anne Marcovich and Terry Shin. *Isis*. December 2016
- 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, in *Spontaneous Generations* 5(1).

## Presentations

- 2017 'Nanoscale Materials and Active Materials.' Georgetown Summer School on Active Materials. Washington, DC.
- 2017 'Philosophical Issues in Modeling Nanoscale Systems.' University of Kentucky Department of Chemical and Materials Engineering Seminar Series. Lexington, KY.
- 2017 'Conceptual Analysis and Chemical Information: A Philosophical Case Study in Nanoscience.' National Meeting of the American Chemical Society. San Francisco, CA.
- 2017 'Multi-Scale Modeling and Inter-Theory Relations.' TU–Darmstadt CompuGene Winter School. Darmstadt, Germany.
- 2016 'Multi-Scale Modeling in Nanoscience.' Philosophy of Science Association Biennial Meeting. Atlanta, GA.
- 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 'Multi-Scale Modeling: Beyond Hierarchical Relations.' Society for Philosophy of Science in Practice Biennial Meeting. Glassboro, NJ.
- 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 ‘Multi-Scale Modeling: Beyond Anti-Mereological Relations.’ Bay Area Philosophy of Science colloquium series. Davis, CA.
- 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 ‘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 ‘The Structure–Property Paradigm in Chemistry and Nanoscience,’ Structure in Chemistry and Physics Workshop Series, Durham, UK.
- 2014 ‘*Surface Tension: How Nanoscience Challenges Traditional Theories of Explanation,*’ International Society for the Philosophy of Chemistry Annual Meeting, London, 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 ‘How Pauling Bent the Double Bond.’ Special Collections Resident Scholar Lecture Series, Oregon State University, Corvallis, OR.
- 2010 ‘Characterizing Explanations of Chemical Bonds.’ Models and Simulations 4, Toronto, ON.

*\*Due to injury, this talk was presented on my behalf by Thomas Pashby.*

#### **Grants, Fellowships, and Awards**

- 2017 University of Kentucky Office for the Vice President for Research grant, “Building a Regional Network for Philosophy of Science”
- 2015 Honorable Mention, University of Pittsburgh Elizabeth Baranger Graduate Teaching Award
- 2014 Department of History and Philosophy of Science Graduate Teaching Award
- 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 National Science Foundation Graduate Research Fellowship

#### **Affiliations**

Affiliated Faculty, Department of Gender and Women’s Studies, University of Kentucky

Resident Philosopher, Millstone Nanosynthesis Research Group, University of Pittsburgh

Mentor, Pittsburgh Science and Technology Academy Executive Experience

Education Technology Consultant, Lightside Labs, a Turnitin company

American Chemical Society

American Philosophical Association  
 European Philosophy of Science Association  
 History of Science Society  
 Joint Caucus for Socially Engaged Philosophy and History of Science  
 Philosophy of Science Association  
 Philosophy of Science Association Women's Caucus  
 Public Communication for Researchers Working Group, Carnegie Mellon University  
 Registered Yoga Teacher–200  
 Society for the History of Alchemy and Chemistry  
 Society for the Philosophy of Science in Practice

## Teaching

### Courses Taught and Assisted

University of Kentucky

<i>Fall 2017</i>	Health Care Ethics
<i>Fall 2017</i>	Introduction to Logic
<i>Spring 2017</i>	<i>with Phil Crowley.</i> Science and Religion
<i>Spring 2017</i>	Philosophy of Science
<i>Spring 2017</i>	Health Care Ethics
<i>Fall 2016</i>	Introduction to Logic
<i>Fall 2016</i>	Health Care Ethics

San Francisco State University

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

University of Pittsburgh

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

### Pedagogical Workshops Led

- 2012 'Using Rubrics to Grade Philosophy Essays.' Pitt Philosophy Graduate Teaching Seminar
- 2012 'Leading Discussion Recitations.' New Teaching Assistant Fall Orientation
- 2012 'Getting Started in the Classroom.' New Teaching Assistant Fall Orientation
- 2011 'Testing, Assignments and Grading.' New Teaching Assistant Fall Orientation
- 2011 'Testing, Assignments and Grading.' New Teaching Assistant Spring Orientation

### Professional Service

- Reviewer for *British Journal for the Philosophy of Science*, *Philosophy of Science*, *Pacific Philosophical Quarterly*, *Mind*, *Studies in the History and Philosophy of Science*, *European Journal for Philosophy of Science*, *Dialectica*, *Science Education*
- 2017–2018 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)
- 2016 Expert Panelist at Frontiers in Genetics and Genomics: A Panel Discussion in Honor of T.H. Morgan's 150th Birthday. Lexington, KY.
- 2016 Expert Panelist at SPSP Pre-Conference Workshop on Qualitative Methods in Philosophy of Science, Glassboro, NJ.
- 2016 Co-Organizer with Evan Hepler-Smith and Host, Unnatural Kinds Workshop, San Francisco, CA.
- 2015–2018 Junior Co-Chair, Philosophy of Science Association Women's Caucus  
Founding Editor, [Science Visions](#) blog
- 2013–2016 Listserv Manager, Joint Caucus for Socially Engaged Philosophy and History of Science
- 2012–2013 Pitt HPS Graduate Student Representative
- 2012–2014 Listserv Manager, Pittsburgh area Feminist Philosophy of Science interest group
- 2011–2014 Advisor to Undergraduate Philosophy of Science Club
- 2010–2011 Organizing Committee Chair, Pitt–CMU Graduate Conference in Philosophy
- 2011–2013 Arts and Sciences Graduate Council Representative