

Lauren N. Ross

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Education

Ph.D. History and Philosophy of Science, *University of Pittsburgh*; Expected May 2016. Dissertation: "Explanation in Contexts of Causal Complexity."
Committee: James F. Woodward (co-advisor), Kenneth F. Schaffner (co-advisor), Robert Batterman, William C. Wimsatt, and Mazviita Chirimuuta.

M.A. Bioethics and Health Law, *University of Pittsburgh*; Expected April 2016. Dissertation: "Topics in Neuroethics: Brain Death, Stem Cells, and Causation."
Committee: Kenneth F. Schaffner (Advisor), Lisa S. Parker, and Vishwajit L. Nimgaonkar.

M.D. School of Medicine, *University of California, Irvine*; 2011.
Distinction in Arts and Humanities

B.S. Nutrition; Biology minor, *California Polytechnic State University, San Luis Obispo*; 2007. magna cum laude

Dissertation Abstract

My dissertation examines common types of causal complexity in the biological sciences, the challenges they pose for explanation, and how scientists overcome these challenges. I provide a novel distinction between two types of causal complexity and I analyze explanatory patterns that arise in these contexts. My analysis reveals how explanation in the biological sciences is more diverse than mainstream accounts suggest, which view most or all explanations in this domain as mechanistic. I examine explanations that appeal to causal pathways, dynamical models, and monocausal factors and I show how these explanations are guided by considerations that have been overlooked in the extant literature. My project explores connections between these explanatory patterns and other topics of interest in philosophy and general philosophy of science, including: reduction, multiple realizability, causal selection, and the role of pragmatics in explanation.

- Publications** (Forthcoming) Koch's Postulates: An Interventionist Perspective. Co-authored with James F. Woodward. *Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences*.
- (2015) Dynamical Models and Explanation in Neuroscience. *Philosophy of Science* 82(1): 32-54.
- (2008) Kinetics and Regioselectivity of Ring Opening of 1-Bicyclo[3.1.0]hexanylmethyl Radical. *Journal of Organic Chemistry* ;73(4) : 1593 – 6. Kantorowski, E.J., Le, D.D., Hunt, C.J., Barry-Holson, K.Q., Lee, J.P., Ross, L.N.
- Manuscripts** Causal Complexity in Neuropsychiatric Genetics. Invited for a special issue of *Synthese* on "Psychiatry and Its Philosophy."
- Causal Control: A Rationale For Causal Selection. Invited for a *Minnesota Studies in Philosophy of Science* volume on "Causation in Biology."
- Invited Talks** "Dynamical Models: Mathematical Explanation in Neuroscience and Medicine," *International Advanced Seminar in the Philosophy of Medicine (IASPM)*, Paris, France; June 2013.
- "Robert Koch's Criteria for Disease Causation: Their Origin and Content," *American Society of Microbiology (ASM)*; Denver, Colorado; May 2013.
- Refereed Conference Presentations** "Causal Explanations in Genetics and the Pathway Concept," *International Society for the History, Philosophy, and Social Studies of Biology (ISHPSSB)*; Université Du Québec à Montréal (UQAM), Montréal, Canada; July 2015.
- "Neuropsychiatric Genetics: Advances in Explaining and Understanding Neuropsychiatric Disorders," *Early Career Scholars Conference in Philosophy of Psychiatry: Overcoming Mind-Brain Dualism in 21st Century Medicine*; Pittsburgh, Pennsylvania; November 2014.
- "Koch's Criteria of Disease Causation," *History of Science Society*; Chicago, Illinois; November 2014.
- "Dynamical Models and Explanation in Neuroscience," *Experimentation in Neuroscience*; poster session, Pittsburgh, USA; November 2013.
- "Explanations and Explanatory Models in Biomedicine," *Fifth International Philosophy of Medicine Roundtable*, New York, USA; November 2013.
- "Value, Dysmenorrhea, and the Definition of Disease," *Fourth International Philosophy of Medicine Roundtable*, San Sebastian, Spain; November 2011.

Teaching Spring 2015 · Causal Reasoning, Independent Teaching
Fall 2014 · Mind and Medicine, Independent Teaching
Spring 2013 · Mind and Medicine, Teaching Assistant for James Woodward
Fall 2012 · Morality and Medicine, Teaching Assistant for Sandra Mitchell
Spring 2009 · Human Anatomy Instructor UCI SOM, Assistant for Robert Leonard

Awards and Honors (2015) NSF Travel Grant for ISHPSSB
(2015) Research Travel Grant American Society of Microbiology
(2014) NSF Travel Grant for History of Science Society
(2013, 2015) Wesley Salmon Fund Grant
(2013) American Society of Microbiology Conference Travel Grant
(2013, 2015) Finalist, Baranger Teaching Award for Excellence in Teaching
(2013) Graduate and Professional Student Association Travel Grant
(2012) Grad Expo Outstanding Presentation Award
(2012) Arts and Sciences Teaching Fellowship, University of Pittsburgh
(2011) Graduate Student Organization Travel Grant
(2011) Andrew Mellon Fellowship, University of Pittsburgh

Academic Employment Teaching Assistant: Human Anatomy Lab; School of Medicine, *University of California, Irvine*; Supervisor: Dr. Robert Leonard *December 2008-June-2009*.

Organic Chemistry Lab: Staff Researcher, *California Polytechnic State University, San Luis Obispo*; Supervisor: Dr. Eric Kantorowski; *June 2005 - July 2007*.

Service **Teaching Assistant and Teaching Fellow Mentor:** History and Philosophy of Science (August 2015-July 2016).

Graduate Student Organization (GSO): Representative for History and Philosophy of Science (January 2013–August 2014).

Class Representative for Bioethics: University of California, Irvine School of Medicine (September 2007-June 2011).

Referee For: *Philosophy of Science* (2013, 2014, 2015).

Academic Memberships Philosophy of Science Association (PSA)
American Philosophical Association (APA)
Philosophy of Medicine Roundtable
American Society of Bioethics and Humanities (ASBH)

**Graduate
Courses**

University of Pittsburgh

Philosophy of Biology

The Gene (Kenneth Schaffner)

Philosophy of Biology (James Lennox)

Philosophy of Medicine (Kenneth Schaffner)

Historical and Philosophical Issues in Behavioral Genetics (Kenneth Schaffner)

Historical and Philosophical Issues in Microbiology (James Lennox)

Philosophy of Neuroscience

Neurobiology, Reduction, and Emergence (Kenneth Schaffner)

Central Problems in Systems Neuroscience (Mazviita Chirumuuta)

Explanations, Causes, and Mechanisms (Peter Machamer, James Bogen)

Neuroethics (Kenneth Schaffner)

General Philosophy of Science

Scientific Explanation (James Woodward, Mark Wilson)

Representation in Science (Mazviita Chirumuuta, Sandra Mitchell)

Philosophy of Science (John Norton)

Science and Values (Heather Douglas)

Philosophy of Science (Kyle Stanford)‡

Causation (Peter Spirtes)†

History of Science I: Biological Sciences (James Lennox)

History of Science II: Physical Sciences (Paolo Palmieri)

German Reading I and II

Logic and Proofs

Symbolic Logic

Bioethics

Naturalizing Morality (Kyle Stanford)‡

Bioethics (Valerie Satkoske)

Research Ethics (Lisa Parker)

Clinical Practicum

Theoretical Foundations of Bioethics (Mark Wicclair)

Ethical Issues in Clinical Practice (Mark Wicclair)*

Pedagogy

Teaching Practicum

Practicum on University Teaching

Faculty Development

* indicates course audited at the University of Pittsburgh

† indicates course audited at Carnegie Mellon University

‡ indicates course completed at University of California, Irvine; LPS

**Graduate
Courses**

University of California, Irvine; School of Medicine

Neuroscience

Neuroscience
Neuroanatomy
Neuropsychiatry Clerkship
Neurology Clerkship
Radiology, Imaging Clerkship
Intensive Care Unit (ICU) Clerkship

Biology, Biomedicine

Molecular and Cellular Biology
Physiology/Pathophysiology
General and Systems Pathology
Medical Biochemistry
Clinical Pathology
Anatomy/Embryology
Medical Genetics
Medical Pharmacology
Advanced Topics Anatomy
Epidemiology and Biostatistics
Medical Microbiology
Immunology
Histology
Clinical Foundations I, II, III, IV
Clerkships: Inpatient Medicine, Surgery, Pediatrics,
Obstetrics and Gynecology, Ambulatory Medicine
Substance Abuse, Emergency Medicine, Family Medicine

Bioethics, Medical Humanities

Medical Ethics
Palliative Care Ethics
Ethics: Latino Medical Care
Cultural History: Latino Medical Care
Research Medical Humanities
Art of Doctoring

Languages

English (native), Spanish (reading), German (reading)

References

James F. Woodward, Distinguished Professor
University of Pittsburgh
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Kenneth F. Schaffner, Distinguished University Professor
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William C. Wimsatt, Professor of Philosophy, emeritus
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Robert Batterman, Professor and Department Chair
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Mazviita Chirimuuta, Assistant Professor
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Teaching
Reference

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