

12/01/2017

CONTACT  
INFORMATION

Presidential Scholars in Society and Neuroscience  
The Center for Science and Society  
Departments of Philosophy and the Biological Sciences  
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SPECIALIZATION

Empirical Philosophy of Science  
Philosophy of Mind and Perception  
Philosophy, History, and Social Studies of Neuroscience  
Sensory and Cognitive Science  
Olfaction  
Science and Technology Studies  
Literature and Fiction Theory

EMPLOYMENT

2015 – Present

**Columbia University in the City of New York, USA**  
Presidential Scholar in Society and Neuroscience  
Project. “From the Air to the Brain: Laboratory Routines in Olfaction.”

2013 – 2015

**Konrad Lorenz Institute for Evolution and Cognition Research, Austria**  
Postdoctoral Research Fellowship  
Project. “Scenes of Scientific Discovery: Modeling the Olfactory Mechanism at the Intersection of Experimental, Technological, and Conceptually Driven Analysis.”

EDUCATION

2010 – 2013

**University of Exeter, UK**  
Ph.D., Philosophy  
**Dissertation.** “Making Sense of Smell: Classifications and Model Thinking in Olfaction Theory.”  
Committee: John Dupré (supervisor), Hasok Chang, Sabina Leonelli

2003 – 2009

**Humboldt University at Berlin, Germany**  
Magister Artium (MA), German Literature Studies and Philosophy  
Thesis. “Compossibilis. Leibniz’ Kausalitätskonzept als heuristische Quelle für Entwicklungsfragen in der modernen Biologie.”

## PUBLICATIONS

- Book *Under Contract*. Harvard University Press.
- Journal Articles
- 2017 (forthcoming)**. With K. Bschrir. "The Manipulability of What? The History of G-Protein Coupled Receptors," *Biology & Philosophy*.
- 2017**. "Up the Nose of the Beholder? Aesthetic Perception in Olfaction as a Decision-Making Process," *New Ideas in Psychology* 47: 157-165.
- 2016**. "Making Sense of Smell," *The Philosophers' Magazine* 73, 41-47.
- 2015**. "What is so special about smell? Olfaction as a model system in neurobiology," *Postgraduate Medical Journal* 92: 27-33.
- 2015**. With H. Chang. "Sensory Measurements: Coordination and Standardization," *Biological Theory* 10 (3): 200-211.
- 2015**. "Bending Molecules or Bending the Rules? The Application of Theoretical Models in Fragrance Chemistry," *Perspectives on Science* 23 (4): 443-465.
- 2014**. "A Sense So Rare: Measuring Olfactory Experiences and Making a Case for a Process Perspective on Sensory Perception," *Biological Theory* 9 (3): 258-268.
- 2013**. "Science and Fiction: Analysing the Concept of Fiction in Science and its Limits," *Journal for General Philosophy of Science* 44 (2): 357-373.
- 2013**. "A Pluralist Approach to Extension: The Role of Materiality in Scientific Practice for the Reference of Natural Kind Terms," *Biological Theory* 7 (2): 100-108.
- Book Chapters
- 2018 (in press)**. "Measuring the World: Towards a Process Model of Perception," in: *Everything Flows: Towards a Processual Philosophy of Biology*, ed. by D. Nicholson, and J. Dupré. Oxford University Press.
- 2018**. "Is Captain Kirk a natural blonde? Do X-Ray crystallographers dream of electron clouds? Comparing model-based inferences in science and fiction," in: *Thinking about Science and Reflecting on Art: Bringing Aesthetics and the Philosophy of Science Together*, ed. by Steven French, Otavio Bueno, and Dean Rickles. Routledge, 62-79.
- 2014**. "Fiction in Science? Exploring the Reality of Theoretical Entities," in: *Defending Realism: Ontological and Epistemological Investigations. Proceedings of the International Conference*, ed. by Guido Bonino, Javier Cumpa and Greg Jesson. De Gruyter, 291-309.
- 2006**. "Das Wundenmotiv in Tolkiens 'Der Herr der Ringe' unter dem Blickwinkel der traumatischen Erfahrung," in: *Inklings. Jahrbuch für Literatur und Ästhetik*. Bd. 24, ed. by D. Petzold. Brendow.

- Digital Edition      **2019.** “Sleight of Hand in Ms. Fr. 640, fols. 33r-36r, 43v.” Critical online publication of *The Making & Knowing Project*, ed. by Pamela H. Smith.
- Editorials            **2012.** With S. Leonelli. “Editorial,” *The Reasoner* 6 (3).
- Book Reviews        **Forthcoming.** “J.D. Trout. Wondrous Truths: The Improbable Triumph of Modern Science.” *Philosophy*.
- 2015.** “Astrid Schwarz. Experiments in Practice (History and Philosophy of Technoscience 2).” *Isis* 106 (4): 898-899.
- 2010.** “Leibniz-Forschungsstelle der Universität Münster (Ed.) Gottfried Wilhelm Leibniz. Philosophischer Briefwechsel, Bd. 1: 1663–1685, Bd. 2: 1686–1694.” In: *Zeitschrift für Germanistik* 3: 675-677.
- 2007.** “Arbeitsgemeinschaft Literarischer Gemeinschaften und Gedenkstätten E.V. (Ed.): Literatur vor Ort. Literarische Gesellschaften, Museen und Gedenkstätten.” In: *Zeitschrift für Germanistik* 3.
- Conference Reports   **2013.** With T. Baetu, D. Brooks, S. Dutreuil, and P. Germain. “Model Thinking in the Life Sciences: Complexity in the Making, Second European Advanced Seminar in the Philosophy of the Life Sciences, ‘In Vivo, ex Vivo, in Vitro, in Silico: Models in the life sciences’ Hermance, Switzerland, 10–14 September 2012.” *Biological Theory* 8 (1): 121-124.
- 2011.** With A. Amilburu. “Bridging Disciplines? An Enquiry on the Future of Natural Kinds in Philosophy and the Life Sciences.” *Biological Theory* 6 (2): 187-190.
- Popular & Media      **2017.** Podcast about the senses on *Tell Me Something I Don't Know*. <http://tmsidk.com/2017/10/senses/>
- 2017 (November 10).** Interview in the online magazine *Fatherly*: “The Importance of Playing with A Child’s Sense of Smell A smell researcher on why playing with a kid’s sense of smell can help develop their taste and language.” <https://www.fatherly.com/parenting/importance-playing-childs-sense-smell/>
- 2017.** Blog post “Is Smell an Aesthetic Sense?” *Imperfect Cognitions*. <http://imperfectcognitions.blogspot.com/2017/07/is-smell-aesthetic-sense.html>
- 2017 (May 11).** Interview in the online magazine *Fatherly* about a publication on the human sense of smell in *Science*. <https://www.fatherly.com/health-science/myth-humans-poor-sense-smell-debunked/>
- 2017 (April 11).** Interview in *Inside Science* on a study on computing odor images. <https://www.insidescience.org/news/do-you-smell-what-i-smell>
- 2017.** Blog post “Making Sense of Scents: The Science of Smell” *Auxiliary Hypotheses* | *The BJPS Blog*. <http://thebjps.typepad.com/my-blog/2017/01/making-sense-of-scents-the-science-of-smell-ann-sophie-barwich.html>

## PRESENTATIONS

*Invited Papers*

- Forthcoming 2018      Speaker, "Smells as Secondary Qualities," APA Eastern Division Meeting (American Philosophical Association), Savannah, GA, January 3-6
- Speaker, 40th meeting of AChemS (Association for Chemoreception Sciences), Bonita Springs, Florida, April 18-21
- 2017                      "Olfaction as a Model for Neuroscience: How Your Brain Is Making Scents – And Why It Matters." Department of History and Philosophy of Science, Indiana University Bloomington, Nov 9
- "What are Odors: Qualitative Objects or Qualitative Relations?" UK Semiochemistry Network Workshop, Cambridge, July 18-19
- "Scent Track: What can the History of Olfaction tell us about Theorizing in the Life Sciences?" New York City History of Science Consortium Lecture Series, April 26
- "Smell as a Model System. A Philosophical Study at the Bench." (Talk in honor of Maria Inés Velazco), Firmenich SA, Princeton NJ, March 23
- 2016                      "Whatever the Method? PCR and the Discovery of the Olfactory Receptors," Many Methods – One Biology, Center for Advanced Studies, Ludwig Maximilians University Munich, October 20-22
- "Philosophy at the Bench: Olfaction as a Model System for Neurobiology," Neuroscience Institute Special Seminar, NYU Langone Medical Center (Rinberg Lab), July 27
- "Imagine there is a controversy and no one participates: Philosophical failures in science narratives" Model(ing) Controversies in Science, National University of Singapore, March 15 & 17
- "Olfaction as a modern experimental system: a philosophical study at the bench", New York Medical College, February 3
- 2015                      "Olfaction as a model system for neurobiology: GPCRs and Mapping Smells in the Brain," Center for Bits and Atoms, MIT (Mershin Lab), December 9
- "Why we need to think about Failure in Science," University of Bristol, Department of Philosophy, December 2
- "Success is not equal to progress: Why Failure is integral to Science," Wagner Conference 2015, University of Reno, November 12-14

- 2014 “Evo-Devo and Olfaction: Developing Process Categories for Perception,” Process Philosophy of Biology, Egenis (Centre for the Study of the Life Sciences), University of Exeter, November 20-21
- “How Philosophy matters to Science (And why you shouldn’t listen to philosophers. Talk to them.)” Firestein Laboratory, Columbia University, November 12
- “Is Captain Kirk a natural blonde? The limits of fiction and what they can tell us about modeling in science,” Philosophy of science and aesthetics conference, University of Leeds, September 5-6
- “The Standard Observer: Humans as Measurement Instruments for the Quantification of Qualities. The Case of Olfaction as a Diagnostic Tool for Neurodegenerative Diseases.” Quality & Quantity: Limits of Quantification in the Sciences (30th Altenberg Workshop in Theoretical Biology), Konrad Lorenz Institute for Evolution and Cognition Research Institute, June 11-14
- 2013 “Modelling Evidence: Theory Assessment in Olfactory Research,” Konrad Lorenz Institute for Evolution and Cognition Research, March 21

### *Symposia*

- 2017 Organizer & moderator: “The Human Sense of Smell,” Seminars in Society and Neuroscience, Columbia University, New York, April 13  
 Speakers: Barry Smith (University of London), Clare Batty (Kentucky), Donald Wilson (NYU), Avery Gilbert (smell scientist & author), Christophe Laudamiel (DreamAir, perfumer)  
 URL= [https://youtu.be/DYO45ERk\\_3Q](https://youtu.be/DYO45ERk_3Q)
- 2015 Organizer & moderator: “Understanding Cognition through Development: What Do Animals, Children, and Science Have in Common?” Seminars in Society & Neuroscience, Columbia University, November 2  
 Speakers: Kristin Andrews (York), Diana Reiss (Columbia), Peter Gordon (Columbia)  
 URL= <https://www.youtube.com/watch?v=pit-HYsksUo>
- Organizer & Speaker: “Failure in Science,” Ishpssb (The International Society for the History, Philosophy, and Social Studies of Biology), UQAM, Montreal, July 5-10  
 Stuart Firestein (Columbia): “Explicit failure”  
 Isabella Sarto-Jackson (KLI): “Intrinsic hidden constraints in data-intensive biology”  
 Ann-Sophie Barwich (KLI): “Simply” failure or delayed success? Mapping smells in the brain”

### *Selected Papers*

- 2016
- “The Imitation Game: What does ‘Recognition’ in Mechanisms of Molecular Recognition mean?” Philosophy of Science Association, Atlanta, November 3-5
- “Fashion Fades, Only Chanel No. 5 Remains the Same: A Chemical History of Style and Technology,” ISPC2016 (20th Annual Meeting of the International Society for the Philosophy of Chemistry), Florida Atlantic University, August 1-4
- With D. Bilak. “Vials and Vinaigrettes: The Manipulation of Odour in 18th-century French Science and Society,” Dutch-Belgian Society of Eighteenth-Century Studies Annual Conference-Conference ‘Flavours of the Eighteenth Century,’ Brussels, March 10-11
- With K. Bschrir. “Manipulability and Entity Realism in Wet-Lab Research: The Story of G-Protein Coupled Receptors,” The History of Science and Contemporary Scientific Realism, Indiana University-Purdue University, February 19-21
- 2015
- With K. Bschrir. “Reality as a relational property: The story of G-protein coupled receptors,” EPSA (European Philosophy of Science Association), Center for Logic and Philosophy of Science, Heinrich Heine University Düsseldorf, September 23-27
- “The Problem of Co-ordination  $\neq$  The Problem of Standardisation: What Sensory Measurement Is (Not),” The Making of Measurement, University of Cambridge, July 23-24
- 2014
- “A Fine Nose for Timeliness: The Discovery of the Olfactory Receptors and the Question of Novelty,” Philosophy of Science Association, Chicago, November 6-9
- “Sensing the Unknown: Historicising the Discoverability of the Olfactory Receptors within the Life on an Experimental System,” Integrated History and Philosophy of Science 5 (&HPS5) conference, University of Vienna, June 26-28
- “The Discovery of the Olfactory Receptors and the Question of Novelty,” Philosophy of Science Conference, Dubrovnik, April 14-19
- “What would MacGyver do? Experimental Tools and the Discovery of the Olfactory Receptors,” Philosophy of Biology in the UK, University of Cambridge, March 30-April 1
- 2013
- “If you can spray them, then they are real: Evidence Construction in Fragrance Chemistry,” Ishpssb (The International Society for the History, Philosophy, and Social Studies of Biology), Montpellier, July 7-12
- “The Application of Theoretical Models and Strategies of Evidence Construction in Fragrance Chemistry,” The British Society for the Philosophy of Science (BSPS), University of Exeter, July 4-5

- 2012 “Making Sense of Smell: Models in Olfaction Theory,” Ex vivo, in vivo, in vitro, in silico: Second Advanced Seminar in the Philosophy of the Life Sciences, Brocher Foundation, Geneva, September 10-14
- “The Scientification of Scent: Modeling the Mechanism of Primary Odour Recognition,” The British Society for the Philosophy of Science, University of Stirling, July 4-6
- “Bending the Rules or Bending the Molecules: Contemporary Issues in Olfaction Theory,” 7th annual integrated HPS workshop, UCL Department of Science and Technology Studies, June 28-29
- “Get a whiff of this! Modelling the Mechanism of Primary Odor Recognition,” Models and Simulations 5, University of Helsinki, June 14-16
- 2011 “Natural Kind Terms as Sign Functions,” Natural Kinds in Philosophy and in the Life Sciences: Scholastic Twilight or New Dawn? University of Granada, September 7-9
- “Science and Fiction: On the Reference of Model,” Society for the Philosophy of Science in Practice, University of Exeter, 22-24 June
- “Science and Fiction: On the Reference of Models,” Defending Realism. Ontological and Epistemological Investigations, University of Urbino, June 20-22
- “Representing Knowledge: On the Epistemic Condition of Reference,” Integrated HPS workshop, University of Cambridge, April 18-19

### ***Campus Presentations***

- 2017 “The Science of Smell: A Philosophical Study at the Bench,” Presidential Scholars in Society and Neuroscience Research Symposium, Columbia University, February 13  
URL= <https://youtu.be/fBwNqf8BHsg>
- 2014 *Respondent*: “Ontologies of Protein-Ligand Binding Complexes,” speaker: Isabella Sarto-Jackson, Ontological Issues in the Life Sciences (Third European Advanced Seminar in the Philosophy of the Life Sciences), KLI Institute, September 1-5
- 2013 *Keynote Talk*: “The Descent of Scent: Model Thinking in Olfaction Theory,” Egenis - Centre for the Study of the Life Sciences, University of Exeter, March 25

### RESEARCH EXPERIENCE

- 2012 – 13 ***Research Assistant***, The Centre for the Study of the Life Sciences, University of Exeter, supervisor: Christine Hauskeller

- 2008 – 09 **Student Research Assistant**, University Collections Project, Helmholtz-Zentrum für Kulturtechnik, HU Berlin, supervisor: Cornelia Weber
- 2008 – 09 **Student Research Assistant**, Department of German Literature, HU Berlin, supervisor: Lutz Danneberg
- 2008 **Student Assistant**, Berlin-Brandenburg School for Regenerative Therapies, Charité Berlin
- 2007 **Internship**, Berlin-Brandenburgische Akademie der Wissenschaften; Project “Functions of Consciousness”
- 2006 – 07 **Internship**, Journal *Zeitschrift für Germanistik*

## TEACHING

- Fall 2016; 2017 **Course Director**. Co-taught with Stuart Firestein, Columbia University  
Fall: *Scientific Pluralism in Practice: Readings in the History and Philosophy of Science* (cross-listed at the Departments of Philosophy, History, and the Biological Sciences)
- Spring 2016 **Guest Lecturer**, MIT  
Co-taught with Andreas Merzhin, *Making Sense of Scent*, January 27
- 2012 **Graduate Teaching Assistant**, University of Exeter  
Fall: *Philosophy of Nature*, Jaume Navarro (Course Director)  
Spring: *Knowledge and Reality*, Michael Hauskeller (Course Director)
- 2011 **Graduate Teaching Assistant**, University of Exeter  
Fall: *Philosophy of Nature*, Staffan Müller-Wille (Course Director)
- 2007 – 08 **Undergraduate Teaching Assistant**, Humboldt University  
Fall: *Practical Philosophy*, Oswald Schwemmer (Course Director)

## AWARDS &amp; GRANTS

- 2017 Teaching Grant: Course Development in Science and Society, Center for Science and Society at Columbia University, for *Scientific Pluralism in Practice: Readings in the History and Philosophy of Science*, co-taught with Stuart Firestein (cross-listed at the Departments of Philosophy, History, and the Biological Sciences)
- 2013 – 2015 Honorary Research Fellow, Egenis (The Centre for the Study of the Life Sciences), University of Exeter
- 2011 – 2012 Postgraduate Fellowship: College of Social Sciences and International Studies, University of Exeter



SERVICE TO PROFESION

2012 – Present

***Journal Reviewer***

Mind; Philosophy of Science; Synthese; New Ideas in Psychology; Biological Theory; Studies in History and Philosophy of Science Part A; Studies in History and Philosophy of Science Part C: Studies in History and Philosophy of Biological and Biomedical Sciences; Journal for General Philosophy of Science; Philosophy, Theory and Practice in Biology; Journal of Applied Philosophy; Theoria

2014

***Manuscript Reviewer***

MIT Press

2013 – 15

***Committee Member***

Student Advisory Committee; The International Society for the History, Philosophy, and Social Studies of Biology