

24/01/2018

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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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
- 2018 (forthcoming)**. “How to be Rational about Empirical Success in Ongoing Science: The Case of the Quantum Nose and its Critics.” *Studies in History and Philosophy of Science*.
- 2017**. With K. Bschr. “The Manipulability of What? The History of G-Protein Coupled Receptors,” *Biology & Philosophy*. doi.org/10.1007/s10539-017-9608-9
- 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 Invited Speaker at the 40th meeting of AChemS (Association for Chemoreception Sciences); Symposium: "Back to the Future: From Past discoveries to Future Directions," Bonita Springs, Florida, April 18-21, 2018 (Panelists: Gordon Shepherd, Linda Bartoshuk, Stuart Firestein).
- 2018 Commentator "Smells as Secondary Qualities," APA Eastern Division Meeting (American Philosophical Association), Savannah, GA, January 3-6
- 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
- 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 Merishin, *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 & 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