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Citizenship: Canadian

Languages: English (mother tongue), French (reading knowledge)

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## Education

### • Degrees

- **Doctor of Philosophy.** The University of Western Ontario, 2007 - 2012. Thesis: “Explanation in *Science*”
- **Bachelor of Mathematics (Honours)**, with Highest Honours. Carleton University, 2004 - 2005. Thesis: “Categories and their Algebra”
- **Master of Arts in Philosophy**, with Distinction. Carleton University, 2002 - 2004. Thesis: “Toward a Foundation for Interdisciplinary Science: A Model of Special Sciences and Levels of Complexity.”
- **Bachelor of Humanities (Honours)**, with Highest Honours and a Specialization in English Literature. Carleton University, 1998 - 2002.

### • Grants and Fellowships

- Cesare Romagnoli, Gillian Barker, and James A. Overton. “The Ontology and Epistemology of Medical Imaging.” Joseph L. Rotman Institute of Science and Values Graduate Research Assistantship, April 2014.
- Cesare Romagnoli and James A. Overton. “Structured Reporting of Prostate Cancer.” Image Guidance for Prostate Cancer Management Project Grant, January 2012.
- Visiting Fellowship at the Tilburg Center for Logic and Philosophy of Science (TiLPS), 2011.
- Gillian Barker, Cesare Romagnoli, and James A. Overton. “The Interdisciplinary Prostate Ontology Project – Stage Two.” Joseph L. Rotman Institute of Science and Values Seed Grant, July 2009.
- Cesare Romagnoli and James A. Overton. “The Interdisciplinary Prostate Ontology Project.” London Health Sciences Centre Department of Medical Imaging Project Grant, September 2008.

### • Scholarships and Awards

- Canada Graduate Scholarships – Michael Smith Foreign Study Supplement, Social Sciences and Humanities Research Council of Canada (\$6000), 2009.
- Canada Graduate Scholarships – Doctoral Award, Social Sciences and Humanities Research Council of Canada (\$105 000 over 3 years), 2007-2010.
- The University of Western Ontario Department of Philosophy Entrance Scholarship (\$4000), 2007.
- University Medal in Mathematics, Carleton University, 2005.
- Doctoral Fellowship, Social Sciences and Humanities Research Council of Canada (\$80 000 over 4 years, declined to pursue employment), 2005.
- Ontario Graduate Scholarships (\$15 000 each, awarded twice), 2002-2003, 2003-2004.
- Carleton University Dean of Graduate Studies Entrance Scholarship for Academic Excellence (\$2000), 2002.
- Carleton University Senate Medal for Outstanding Academic Achievement, 2002.
- Carleton University Deans’ Honour List, 1999-2002, 2004 (all years of eligibility).

- Carleton University Entrance Scholarship (\$3200 per annum, renewed three times), 1998-2002.

## Current Occupation

My company Knocean Inc. offers consulting and development services at the intersection of philosophy, science, and software. I specialize in scientific database integration using biomedical ontologies. Examples include ontology development and deployment, building semantic web tools, and developing custom web applications for scientific and medical projects.

- **Consultant** La Jolla Institute for Allergy and Immunology (San Diego, California, USA), 2012 - Present: ontology development, software development, and database integration for the Immune Epitope Database
- **Consultant** Vistrionix, Inc. (Reston, Virginia, USA), 2012 - Present: ontology development, software development, and database integration for the Chemical Effects on Biological Systems project
- **Technical Working Group Member** OBO Operations Committee, 2014 - Present: collaborative development of policies and tools for the maintenance of the OBO Foundry
- **Release Manager** Ontology for Biomedical Investigations (<http://obi-ontology.org>), 2014 - Present: development and coordination of OBI review and release processes, and supporting tools
- **Consultant** Lawrence Berkeley National Laboratory (Berkeley, California, USA), 2015, 2016: software development for Gene Ontology

## Research Interests

Scientific explanation and science informatics are at the centre of my research. Scientific explanations help us to understand our world better. Science informatics multiplies the power and reach of science by helping us to collect, manage, and analyze vast quantities of data. More data and more analytical power mean that we explain more, but also that we explain differently. I use tools from epistemology, ontology, mathematics, and computer science to better understand the changing nature of scientific explanation and build better science informatics systems.

## Publications

- **Journal Articles**
  - Anita Bandrowski, Ryan Brinkman, Mathias Brochhausen, Matthew H. Brush, Bill Bug, Marcus C. Chibucos, Kevin Clancy, Mélanie Courtot, Dirk Derom, Michel Dumontier, Liju Fan, Jennifer Fostel, Gilberto Fragoso, Frank Gibson, Alejandra Gonzalez-Beltran, Melissa A. Haendel, Yongqun He, Mervi Heiskanen, Tina Hernandez-Boussard, Mark Jensen, Yu Lin, Allyson L. Lister, Phillip Lord, James Malone, Elisabetta Manduchi, Monnie McGee, Norman Morrison, James A. Overton, Helen Parkinson, Bjoern Peters, Philippe Rocca-Serra, Alan Ruttenberg, Susanna-Assunta Sansone, Richard H. Scheuermann, Daniel Schober, Barry Smith, Larisa N. Soldatova, Christian J. Stoeckert Jr, Chris F. Taylor, Carlo Torniai, Jessica A. Turner, Randi Vita, Patricia L. Whetzel, Jie Zheng. “The Ontology for Biomedical Investigations.” *PLoS One*. 11(4), 2016.
  - Heiner Oberkampff, Sonja Zillner, James A. Overton, Bernhard Bauer, Alexander Cavallaro, Michael Uder, and Matthias Hammon. “Semantic representation of reported measurements in radiology.” *BMC Medical Informatics and Decision Making*. 16(1):1, 2016.
  - Randi Vita, James A. Overton, Emily Seymour, John Sidney, Jim Kaufman, Rebecca L Tallmadge, Shirley Ellis, John Hammond, Geoff W Butcher, Alessandro Sette, and Bjoern Peters. “An ontology for major histocompatibility restriction.” *Journal of Biomedical Semantics*. 7(1):1, 2016.

- Barry Smith, Sivaram Arabandi, Mathias Brochhausen, Michael Calhoun, Paolo Ciccarese, Scott Doyle, Bernard Gibaud, Ilya Goldberg, Charles E. Kahn, James A. Overton, John Tomaszewski, and Metin Gurcan. “Biomedical imaging ontologies: A survey and proposal for future work.” *Journal of Pathology Informatics*. 6(1):37, 2015.
- Randi Vita, James A. Overton, Jason A. Greenbaum, Julia Ponomarenko, Jason D. Clark, Cantrell, Jason R. Wheeler, Daniel K. Gabbard, Joseph L. Deborah Hix, Alessandro Sette, and Bjoern Peters. “The Immune Epitope Database (IEDB) 3.0.” *Nucleic Acids Research*. 43(D1):D405–D412, 2015.
- Randi Vita, James A. Overton, Jason A. Greenbaum, Alessandro Sette, and Bjoern Peters. “Query enhancement through the practical application of ontology: the IEDB and OBI.” *Journal of Biomedical Semantics*. 4(1):1–10, 2013.
- James A. Overton. “‘Explain’ in Scientific Discourse.” *Synthese*. 190(8): 2013.
- James A. Overton. “Mechanisms, Types, and Abstractions.” *Philosophy of Science*. 78(5): 2011.
- James A. Overton, Cesare Romagnoli, and Rethy K. Chhem. “Open Biomedical Ontologies Applied to Prostate Cancer.” *Applied Ontology*. 6(1): 35-51, 2011.

#### • Book Chapters

- James A. Overton and Cesare Romagnoli. “Radiology, Philosophy, and Ontology.” In Rethy K. Chhem, Heiner Fangerau, Irmgard Müller, and Shih-chang Wang, editors, *Medical Imaging and Philosophy*. Franz Steiner Verlag, Stuttgart, 2012.
- Cesare Romagnoli, James A. Overton, and Rethy K. Chhem. “Philosophy of radiology: The ontological challenge.” In Teresa Van Deven, Kathryn M. Hibbert, and Rethy K. Chhem, editors, *The Practice of Radiology Education*. Springer, New York, 2010.
- Robert Arp, Cesare Romagnoli, Rethy K. Chhem, and James A. Overton. “Radiological and Biomedical Knowledge Integration: The Ontological Way.” In Rethy K. Chhem, Kathryn M. Hibbert, and Teresa Van Deven, editors, *Radiology Education: The Scholarship of Teaching and Learning*. Springer, New York, 2009.

## Presentations

#### • Papers Presented

- James A. Overton, Barry Smith, Christopher J. Mungall, Christian J. Stoeckert Jr, Randi Vita, and Melissa Haendel. “OBO Tutorial: Open Biological and Biomedical Ontologies in Action.” 6th International Conference on Biomedical Ontology. Corvallis, Oregon. August 1, 2016.
- Spencer Hey and James A. Overton. “Explanatory Agnosticism in Translational Medicine.” Society for Philosophy of Science in Practice. Glassboro, New Jersey. June 17, 2016.
- James A. Overton, Alan Ruttenberg, Barry Smith, and Jie Zheng. “OBO Tutorial: Best Practises for Ontology Use.” 5th International Conference on Biomedical Ontology. Lisbon, Portugal. July 28, 2015.
- James A. Overton. “Linked Data for Toxicology.” National Institute for Environmental Health Sciences. Durham, North Carolina. April 13, 2015.
- James A. Overton. “Explanation in Science.” Philosophy of Science Association. Chicago, Illinois. November 7, 2014.
- Heiner Oberkamp, James A. Overton, Sonja Zillner, Bernhard Bauer, and Matthias Hammon. “Expressing Medical Image Measurements using Ontologies of the OBO Library.” CrEDIBLE Thematic Working Days. Sophia Antipolis, France. October 10, 2014.
- Melanie Courtot, Melissa Haendel, James A. Overton, Bjoern Peters, Alan Ruttenberg, and Jie Zheng. “OBO Technical Workshop: Hands-On with Open Biological and Biomedical Ontologies.” 4th International Conference on Biomedical Ontology. Houston, Texas. October 7, 2014.

- Melanie Courtot, Melissa Haendel, James A. Overton, Bjoern Peters, Alan Ruttenberg, Barry Smith, and Jie Zheng. “OBO Tutorial: Getting Things Done with Open Biological and Biomedical Ontologies.” 4th International Conference on Biomedical Ontology. Houston, Texas. October 6, 2014.
- James A. Overton, Nick Nash, and Cesare Romagnoli. “C.S. Peirce and the Philosophy of Medical Imaging.” Charles S. Peirce Centennial Congress. Lowell, Massachusetts. July 17, 2014.
- Heiner Oberkamp and James A. Overton. “Expressing Medical Image Measurements using the Ontology for Biomedical Investigations.” Ontology and Imaging Informatics: Third Clinical and Translational Science Ontology Workshop. Buffalo, New York. June 24, 2014.
- James A. Overton. “Representing Scientific Investigations.” Society for Philosophy of Science in Practice, Fourth Biennial Conference. Institute for the History and Philosophy of Science and Technology, Victoria College, The University of Toronto. June 28, 2013.
- James A. Overton, Randi Vita, Jason A. Greenbaum, Heiko Dietze, Alessandro Sette and Bjoern Peters. “A Taxonomy for Immunologists.” Bio-Ontologies SIG. Berlin, Germany. July 20, 2013.
- James A. Overton. “The Ontology for Biomedical Investigations and the Philosophy of Science.” Ontology Research Group. State University of New York at Buffalo. July 9, 2012.
- James A. Overton. “‘Explanation’ in Scientific Discourse.” Canadian Philosophical Association. The University of Waterloo. May 29, 2012.
- James A. Overton. “‘Explanation’ in Scientific Discourse.” Formal Epistemology Meets Experimental Philosophy. Tilburg University. September 30, 2011.
- James A. Overton. “Philosophy, Ontology, and Scientific Explanation.” Doctoral and Post-Doctoral Colloquium, International Conference on Biomedical Ontology. Buffalo, New York. July 27, 2011.
- James A. Overton. “Scientific Explanation and Computation.” Explanation Aware Computing Workshop, International Joint Conference on Artificial Intelligence. Barcelona, Spain. July 17, 2011.
- James A. Overton. “Informatics, Philosophy, and Ontology.” The Society for the Philosophy of Science in Practice. Exeter, UK. June 24, 2011.
- James A. Overton. “Effective Explanation.” Tilburg Institute for Logic and Philosophy of Science: Research Seminar in Epistemology and Philosophy of Science. Tilburg University. February 8, 2011.
- James A. Overton. “Mechanisms, Types, and Abstractions.” Philosophy of Science Association. Montréal, Canada. November 4, 2010.
- James A. Overton. “Rethinking Scientific Explanation.” The University of Western Ontario Philosophy Graduate Student Association Colloquium Series. The University of Western Ontario. October 6, 2010.
- James A. Overton and Cesare Romagnoli. “Philosophy of Radiology: The Ontological Challenge.” 1st International Conference on Medical Imaging and Philosophy. Ulm, Germany. May 22, 2010.
- James A. Overton. “Rethinking Medical Imaging Artifacts.” History and Philosophy of Science and Technology (HAPSAT) Graduate Conference. The University of Toronto. April 25, 2010.
- James A. Overton and Cesare Romagnoli. “Structured Reporting and Ontologies.” Digital Imaging Group of London, 6th Project Review Meeting. London, Ontario. September 10, 2009.
- James A. Overton, Cesare Romagnoli, and Rethy K. Chhem. “Open Biomedical Ontologies Applied to Prostate Cancer.” International Conference on Biomedical Ontology. The State University of New York at Buffalo. July 24, 2009.
- “Domain Ontologies and Philosophy of Science.” Canadian Society for the History and Philosophy of Science. Carleton University. May 28, 2009.

- James A. Overton. “Biomedical Ontologies and Scientific Explanation.” Philosophy Graduate Student Association Colloquium Series. The University of Western Ontario. January 28, 2009.
- James A. Overton and Cesare Romagnoli. “The Interdisciplinary Prostate Ontology Project.” Italian Association of Telemedicine and Medical Informatics. Ottawa, Ontario. October 6, 2008.
- James A. Overton and Cesare Romagnoli. “Applications of Ontologies to Radiology.” Digital Imaging Group, London Health Sciences Centre. The University of Western Ontario. July 23, 2008.
- James A. Overton. “Limits to Abstraction: Software and Science.” North American Computation and Philosophy Conference. The University of Indiana, Bloomington. July 12, 2008.
- James A. Overton. “Building Better Bridge Laws with Category Theory.” Canadian Society for the History and Philosophy of Science. The University of British Columbia. June 4, 2008.
- James A. Overton. “Higher Isomorphism: Philosophical Issues in the Definition of Weak  $n$ -Categories.” Canadian Society for the History and Philosophy of Mathematics. The University of British Columbia. June 2, 2008.
- James A. Overton. “The Philosophy of Interdisciplinary Science.” Western Research Forum. The University of Western Ontario. March 29, 2008.
- James A. Overton. “Unity and Diversity Among Sciences.” *Essays of Significance* Graduate Conference. The University of Windsor. March 15, 2008.
- James A. Overton. “Complexity and Interdisciplinary Sciences.” Philosophy Graduate Student Association Colloquium Series. The University of Western Ontario. October 17, 2007.
- James A. Overton. “An Alternative to the Hierarchy of Sciences.” Philosophy Graduate Student Association Conference. The University of Waterloo. March 4, 2005.

- **Invited Comments**

- Roger White, “Evidential Symmetry and Mushy Credence.” Formal Epistemology Workshop, The University of Wisconsin – Madison. May 17, 2008.

- **Posters Presented**

- James A. Overton. “Humane OWL: RDF and OWL for Humans.” 6th International Conference on Biomedical Ontology. Corvallis, Oregon. August 2, 2016.
- James A. Overton, Heiko Dietze, Shahim Essaid, David Osumi-Sutherland, and Christopher J. Mungall. “ROBOT: A command-line tool for ontology development.” 5th International Conference on Biomedical Ontology. Lisbon, Portugal. July 29, 2015.
- James A. Overton. “EDN-LD: A simple linked data tool.” 5th International Conference on Biomedical Ontology. Lisbon, Portugal. July 29, 2015.
- James A. Overton, Randi Vita, Jason A. Greenbaum, Matthew Maybeno, Alessandro Sette, and Bjoern Peters. “Providing a standardized nomenclature and intuitive hierarchy for protein records from different databases.” Seventh International Biocuration Conference. Toronto, Ontario. April 7, 2014.
- James A. Overton, Randi Vita, Jason A. Greenbaum, Heiko Dietze, Alessandro Sette and Bjoern Peters. “A Taxonomy for Immunologists.” Fourth International Conference on Biomedical Ontologies. Montreal, Canada. July 8, 2013.
- James A. Overton, Randi Vita, Jason A. Greenbaum, Heiko Dietze, Alessandro Sette and Bjoern Peters. “A Taxonomy for Immunologists.” 6th International Biocuration Conference. Cambridge, UK. April 8, 2013.
- James A. Overton and Cesare Romagnoli. “A Tool for Effective Structured Reporting of Prostate Ultrasound.” Radiological Society of North America. Chicago, Illinois. December 1, 2011.

- James A. Overton and Cesare Romagnoli. “Structured Reporting for Ultrasound of the Prostate.” The University of Western Ontario: Research Day. London, Ontario. March 24, 2010.
- James A. Overton and Cesare Romagnoli. “Structured Reporting for Ultrasound of the Prostate.” Imaging Applications in Prostate Cancer Workshop. London, Ontario. November 9, 2009.

## Academic Work Experience

### • Service

- Steering Committee Student Representative for the Joseph L. Rotman Institute of Science and Values. December 2008 - August 2009.
- Secretary for the Philosophy Graduate Student Association, The University of Western Ontario. 2008 - 2009.
- Referee for the Logic, Math, and Physics Graduate Philosophy Conference, The University of Western Ontario. 2008 - 2010.
- Referee for the Philosophy, Language, Mind, and Cognition (PhilMiLCog) Graduate Philosophy Conference, The University of Western Ontario. 2008 - 2011.

### • Instructor

- Bioethics (PHIL2071). Department of Philosophy, The University of Western Ontario, January 2010 - April 2010.

### • Teaching Assistant

- Introduction to Philosophy (PHIL1300), John Thorp. Department of Philosophy, The University of Western Ontario, September 2008 - April 2009. Duties: Tutorial leader; some lecturing; grading.
- Truth and Propaganda (PHIL 2900), Randal Marlin. Department of Philosophy, Carleton University, June - August 2005. Duties: Grading of term work and exams.
- Ancient Philosophy (PHIL 2006), Diane Dubrule. Department of Philosophy, Carleton University, May - July 2005. Duties: Grading of term work and exams.
- Informal Reasoning (PHIL 2003), Nadine Faulkner. Department of Philosophy, Carleton University, January - April 2004. Duties: Grading of term work and exams.
- Ancient Philosophy (PHIL 2006), Diane Dubrule. Department of Philosophy, Carleton University, September - December 2003. Duties: Grading of term work and exams.
- Philosophy of Mind (PHIL 1301), Paul Raymont. Department of Philosophy, Carleton University, January - April 2003. Duties: Grading of term work and exams, student support.
- Language and Communication (32.254), Corinne Iten. Department of Philosophy, Carleton University, September - December 2002. Duties: Grading of term work and exams, student support.
- Writing Tutorial Service, Jen Gilbert. School of Linguistics and Applied Language Studies, Carleton University, September 2001 - April 2002. Duties: Individual tutoring of students to improve writing skills.

## References

- Robert Batterman (Doctoral supervisor), Professor of Philosophy, The University of Pittsburgh. 1 (412) 624-5782, [rbatterm@pitt.edu](mailto:rbatterm@pitt.edu), <http://www.philosophy.pitt.edu/people/faculty/batterman.php>

- Andrew Brook (Master's supervisor), Chancellor's Professor of Philosophy, Carleton University. 1 (613) 520-3597, [abrook@ccs.carleton.ca](mailto:abrook@ccs.carleton.ca), <http://carleton.ca/~abrook/>
- Charles Weijer, Canada Research Chair in Bioethics, Director of the Joseph L. Rotman Institute of Philosophy, The University of Western Ontario. 1 (519) 661-2111 extension 80090, [cweijer@uwo.ca](mailto:cweijer@uwo.ca)
- Christopher Smeenk, Assistant Professor, The University of Western Ontario. 1 (519) 661-2111, ext. 85770, [csmeenk2@uwo.ca](mailto:csmeenk2@uwo.ca), <http://publish.uwo.ca/~csmeenk2/>