


The Metaphysics Research Lab

Center for the Study of Language and Information
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Welcome to the web pages of the Metaphysics Research Lab. Whereas physics is the attempt to discover the laws that govern fundamental concrete objects, metaphysics is the attempt to discover the laws that systematize the fundamental abstract objects *presupposed* by physical science, such as natural numbers, real numbers, functions, sets and properties, physically possible objects and events, to name just a few. The goal of metaphysics, therefore, is to develop a formal ontology, i.e., a formally precise systematization of these abstract objects. Such a theory will be compatible with the world view of natural science if the abstract objects postulated by the theory are conceived as patterns of the natural world.

In our research lab, we have developed such a theory: the axiomatic theory of abstract objects and relations. In many ways, this theory is like a machine for detecting abstract objects (hence the name ‘research lab’), for among the recursively enumerable theorems, there are statements which assert the existence of the abstract objects mentioned above. Moreover, the properties of these abstracta can be formally derived as consequences of the axioms. The theory systematizes ideas of philosophers such as Plato, Leibniz, Frege, Meinong, and Mally. Our results are collated in the document *Principia Metaphysica*, which is authored by Edward N. Zalta (Ph.D./Philosophy), a Senior Research Scholar at CSLI. An online version of *Principia Metaphysica* can be found by following the link to **The Theory of Abstract Objects** (see below). In published work, the theory has been applied to problems in the philosophy of language, intensional logic, the philosophy of mathematics, and the history of philosophy.

 **Welcome Message** (272K sound file) ([.snd](#), [.au](#), or [.wav](#))
(Recorded December 1, 1994)

$$\exists x(A!x \ \& \ \forall F(xF \equiv \phi))$$
$$x = y \equiv \Box \forall F(xF \equiv yF)$$
 [The Theory of Abstract Objects](#) (Summary and Tutorial)

[Computational Metaphysics Web Pages](#) (by Branden Fitelson, Paul Oppenheimer, and Edward N. Zalta)

[Streaming Video Lecture on Abstract Objects and Computational Metaphysics](#) (let the video load a bit and scroll to minute 73:40).

[Slides For the Lecture](#) (in PDF)

("Steps Toward a Computational Metaphysics", by Edward N. Zalta and Branden Fitelson, *Computing and Philosophy Conference*, Oregon State University, August 8, 2003)



[Ernst Mally](#)



[Plato and Meinong](#)



[Gottlob Frege](#)



[Gottfried Wilhelm Leibniz](#)



Metaphysics Research Lab Personnel

Active Collaborators

- [Edward N. Zalta](#), Senior Research Scholar, CSLI, Stanford University.
Upcoming Talks:
 - Lecture Series, Departament de Lògica, Història, i Filosofia de la Ciència, Universitat de Barcelona, Barcelona, Spain, October 21, 22, 25, 2010.
- [Uri Nodelman](#), Engineering Research Associate, Stanford University
- [Colin Allen](#) (Virtual Member), Professor, History and Philosophy of Science, Indiana University
- [Branden Fitelson](#) (Virtual Member), Assistant Professor, Philosophy Department, University of California/Berkeley
- [Bernard Linsky](#) (Virtual Member), Professor, Philosophy Department, U. of Alberta, CANADA
- [Otávio Bueno](#) (Virtual Member), Professor, University of Miami.
- [Paul Oppenheimer](#) (Virtual Member), Independent Scholar, Scottsdale, AZ.
- [Michael Nelson](#) (Virtual Member), Assistant Professor, Philosophy Department, University of California/Riverside.
- [Hannes Leitgeb](#) (Virtual Member), Reader, Philosophy Department, Bristol University

(Former) Visitors to the Lab (reverse chronological order):

- [Johannes Brandl](#), Associate Professor, Universität Salzburg
- [Ondrej Tomala](#), Ph.D. Candidate, Charles University, Prague (The Czech Republic).
- [Gabriel Sandu](#), Professor, Theoretical Philosophy, University of Helsinki, Finland
- [Ju Shier](#), Professor, Zhongshan University; Director, Institute for Logic and Cognition, Zhongshan University, Guangzhou, China
- [Nie Wenlong](#), Assistant Professor, Institute for Logic and Cognition, Zhongshan (Sun Yat-Sen) University, Guangzhou, China
- [Mark Colyvan](#), Professor, Philosophy, University of Sydney, AUSTRALIA
- [Kristë Shtufi](#), Forschungsassistent, University of Graz, AUSTRIA, and Lecturer at University of Prishtina, Kosovo.
- [Sun-Joo Shin](#) (Professor, Philosophy, Yale University)
- [Paavo Pylikkanen](#), Associate Professor, [Consciousness Studies Program](#), Skövde University, SWEDEN
- [Anna Bjurman](#), Doctoral Student, Department of Philosophy, University of Lund, SWEDEN
- [Keith Stenning](#), Professor, Division of Informatics (Human Communication Research Centre), University of Edinburgh, SCOTLAND
- [Daniel Nolan](#), Lecturer, Philosophy Department, University of Nottingham
- [Greg Restall](#), Senior Lecturer, Philosophy Department, University of Melbourne, Melbourne, AUSTRALIA
- [Francis Jeffrey Pelletier](#), Professor, Philosophy Department, University of Alberta, CANADA
- [Wolfgang Malzkorn](#), formerly of the Seminar für Logik und Grundlagenforschung, Universität Bonn, GERMANY
- [Steven Horst](#), Associate Professor, Philosophy Department, Wesleyan University
- [Godehard Link](#), Professor, Institut für Philosophie, Logik, und Wissenschaftstheorie, Universität München, GERMANY
- [Edwin Mares](#), Senior Lecturer, Philosophy Department, Victoria University of Wellington, NEW ZEALAND
- [Karl-Georg Niebergall](#), Assistant Professor, Institut für Philosophie, Logik, und Wissenschaftstheorie, Universität

München, GERMANY

- [Peter Menzies](#), Associate Professor, Philosophy Department, Macquarie University, AUSTRALIA
- [John Bacon](#), Associate Professor, School of Philosophy, University of Sydney, AUSTRALIA
- [David Chalmers](#), Professor, Australian National University, AUSTRALIA
- [Andrew Irvine](#), Professor, Philosophy Department, University of British Columbia, CANADA
- [Christopher Gauker](#), Associate Professor, Philosophy Department, University of Cincinnati
- [Mark Textor](#), Lecturer, Kings College/London, UK
- [Kees van Deemter](#), Reader, Department of Computing Science, University of Aberdeen, UNITED KINGDOM
- [Christopher Menzel](#), Associate Professor, Philosophy Department, Texas A&M University



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Send comments, suggestions, and/or problems to: zalta@stanford.edu.