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| CONTACT INFORMATION | 106 Somerset St., 5th Floor, Philosophy Department, Rutgers University New Brunswick, NJ 08901 | +1 (616) 881 1468 eddyckm@gmail.com |
| WEBSITE | www.eddykemingchen.net | |
| SPECIALIZATION (AOS) | Philosophy of Physics; Philosophy of Science; Metaphysics. | |
| COMPETENCE (AOC) | Chinese Philosophy; Decision Theory; Formal Epistemology; Philosophy of Mathematics; Philosophy of Religion. | |
| PUBLICATIONS | <ol style="list-style-type: none"> 1. “Our Fundamental Physical Space: An Essay on the Metaphysics of the Wave Function.” <i>The Journal of Philosophy</i>, Volume 114, Issue 7, July 2017, pp. 333-65. DOI: 10.5840/jphil2017114724 2. (with Daniel Rubio) “Surreal Decisions.” <i>Philosophy and Phenomenological Research</i>, forthcoming. 3. (with Daniel Rubio) “Great Expectations: Introducing Surreal Decision Theory.” in Wiebe van der Hoek, Wesley H. Holliday, Wen-fang Wang (Eds.), <i>Proceedings of the 5th International Workshop on Logic, Rationality, and Interaction (LORI-V)</i>, Volume LNCS 9394, pp. 53–63. Springer-Verlag Berlin Heidelberg 2015. | |
| INVITED | <ol style="list-style-type: none"> 1. “Time’s Arrow in a Quantum Universe: A New Approach” (in preparation), in Valia Allori (ed.), <i>Statistical Mechanics and Scientific Explanation: Determinism, Indeterminism and Laws of Nature</i>, World Scientific, forthcoming. 2. “Quantum Ontology I: Copenhagen and Beyond,” <i>Philosophy Compass</i>, in preparation. 3. “Quantum Ontology II: Realism about the Wave Function,” <i>Philosophy Compass</i>, in preparation. | |
| UNDER REVIEW | <ol style="list-style-type: none"> 1. “An Intrinsic Theory of Quantum Mechanics: Progress in Field’s Nominalistic Program, Part I,” PhilSci-Archive:14201 | |
| PAPERS IN PREPARATION | <ol style="list-style-type: none"> 1. “Time’s Arrow in a Quantum Universe I: On the Simplicity and Uniqueness of the Initial Quantum State,” arXiv:1712.01666v2 2. “Our Knowledge about the Past: Some Puzzles about Time’s Arrow and Self-Locating Probabilities” 3. (with Daniel Rubio) “Surreal Decision Theory for Infinite State Space” 4. “A Hybrid Voluntarist Interpretation of Xunzi” | |

EDUCATION

Rutgers University, New Brunswick

Ph.D., Philosophy, *Expected: May 2018*

- Thesis: *Essays on the Metaphysics of Quantum Mechanics*
- Committee: Barry Loewer (co-chair), David Albert (co-chair), Tim Maudlin (external), Jill North, Jonathan Schaffer, Ted Sider.

M.Sc., Mathematics (Mathematical Physics), *Expected: May 2018*

Calvin College

B.S., Mathematics (Major), Physics (Minor), May 2013

B.A., Philosophy (Honors), May 2013

- Thesis: *Singular Propositions, Truth-In/At, and Modality De Re/De Dicto*
- Supervisors: Alvin Plantinga and Stephen Wykstra.

National University of Singapore

Enrolled in Mathematics and Physics Undergraduate Modules, 2009-2010.

University Scholars Program.

SM2-GLC Scholarship Bridging Course, 2008-2009.

No.1 Middle School Affiliated with the Central China Normal University, Wuhan, China

Diploma, Science Stream, 2008.

VISITING
FELLOWSHIPS

| | |
|--|--------------------|
| Australian National University | June-July 2017 |
| Research School of Social Sciences, Faculty Sponsor: Alan Hájek | |
| University of Southern California | March-April 2017 |
| Department of Philosophy, Supervisor: David Wallace | |
| University of Bristol | September 2016 |
| Department of Philosophy, Faculty Sponsor: Richard Pettigrew | |
| University of Oxford | January-April 2012 |
| Undergraduate Visiting Student | |

SELECTED
AWARDS

| | |
|--|--------------|
| Rutgers University | |
| • Presidential Fellowship for Doctoral Studies | 2013, 14, 17 |
| • SCP-Templeton Graduate Fellowship for Cross Training in Physics | 2017-18 |
| • Mellon Fellowship for Summer Research | 2017 |
| • APA Graduate Student Travel Stipend | 2016 |
| • Rutgers Graduate School Travel Stipends | 2014, 15, 16 |
| • Summer Special Study Fellowship | 2015, 16 |

- Calvin College
- Presidential Scholarship 2010-13
 - William Rinck Memorial Prize 2013
for Best Graduating Senior in Mathematics
 - Van Der Woude Award in Science Division 2011, 12
 - Bouwsma Prize for Best Paper in Philosophy 2013
 - Bouwsma Award for Excellence in Philosophy 2011
 - Konyndyk Scholarship for Excellence in Philosophy 2011
- National University of Singapore
- SM2-GLC Undergraduate Full Scholarship, 2007-10
Ministry of Education, Singapore
 - The University Scholars Program 2009-10
 - Valedictorian for SM2-GLC Scholarship Recipients 2009

SELECTED
PRESENTATIONS

An Intrinsic Theory of Quantum Mechanics: Progress in Field's Nominalistic Program, Part I

- (Invited) Bristol Center for Science and Philosophy Sep 2016
- Pacific APA Symposium Mar 2018
- 3rd Annual Meeting of Oct 2017
the Society for the Metaphysics of Science (SMS), Fordham University
- UC Irvine, Logic and Philosophy of Science (LPS) Apr 2017
- 18th UK and European Conference on Foundations of Physics, Jul 2016
LSE, London, UK
- 4th Black Forest Philosophy of Physics Summer School, Saig, Germany Jul 2016

Our Fundamental Physical Space: An Essay on the Metaphysics of the Wavefunction

- (Invited) University of Illinois, Chicago Mar 2016
- Central APA Symposium (with comments from Nick Huggett), Chicago Mar 2016
- 1st Annual Meeting of the Society for the Metaphysics of Science (SMS) Oct 2015
(with comments from Vishnya Maudlin), Rutgers University-Newark
- 3rd Black Forest Philosophy of Physics Summer School, Saig, Germany Jul 2015

The Best Summary of the Quantum World: The Universal Wavefunction as a Humean Law

- (Invited) Tsinghua University Philosophy of Science Colloquium Dec 2015
- 15th Congress of Logic, Methodology, and Philosophy of Science, Aug 2015
University of Helsinki (CLMPS)
- 2nd Black Forest Philosophy of Physics Summer School, Saig, Germany Jul 2014
- Princeton Workshop on Technical Philosophy of Physics Mar 2014

Our Knowledge about the Past: Some Puzzles about Time's Arrow and Self-Locating Probabilities

- (Invited) CalTech, History and Philosophy of Science Series Apr 2017
- (Invited) University of Bristol Sep 2016
- (Invited) Wuhan University Dec 2017
- Sydney University Winter School on Physics and Philosophy of Time Jul 2017
(Winner of the book prize for the best presentation)
- Australasian Association of Philosophy (AAP) Annual Meeting, Jul 2017
the University of Adelaide
- Time and Causality in the Sciences Conference (TaCitS), Jun 2017
Stevens Institute of Technology
- UC San Diego, Philosophy Apr 2017
- UC Riverside Workshop on Epistemology and Philosophy of Mind Mar 2017

Space-Time Emergence: A Representational Theory

- (Invited) Philosophy of Cosmology Workshop, CUNY Graduate Center May 2017

Great Expectations: Introducing Surreal Decision Theory (co-authored with Daniel Rubio)

- (Invited) Princeton Workshop on Intrinsic Values Nov 2015
([Sanders Foundation Website Video Link](#))
- (Invited) Peking University Colloquium Dec 2015
on Logic, Language, and Cognition
- 5th International Congress on Logic, Rationality, and Interaction, Oct 2015
National Taiwan University (LORI V)
- 15th Congress of Logic, Methodology, and Philosophy of Science, Aug 2015
University of Helsinki (CLMPS)
- Pittsburgh-CMU Graduate Conference in Philosophy Mar 2015

Pascal's Wager Meets Surreal Numbers (co-authored with Daniel Rubio)

- (Invited) Xiamen University Philosophy Department May 2016
- Work-in-Progress reading group, Bristol University Sep 2016
- Eastern Regional Meeting of the Society of Christian Philosophers, Sep 2015
Messiah College

A Xunzian Puzzle about Meta-Ethics

- (Invited) Skype lecture in Hu Jing's seminar on Chinese Philosophy Mar 2016
at Washington and Lee University

What is Analytic Philosophy?

- (Invited) Department of Electrical Engineering, Wuhan University Jan 2016

Singular Propositions, Ontological Dependence, and the 'Truth-in/-at' Distinction

- Calvin College Philosophy Symposium Nov 2012

Quantum Modeling of Recollision Excitation and Non-Sequential Double Ionization of Helium

- Calvin College Physics Departmental Seminar Sep 2012
- Western Michigan Regional Undergraduate Science Research Conference Oct 2012
Van Andel Institute, Grand Rapids, Michigan

COMMENTS

Alan Hájek's "The Revenge of Pascal, Petersburg, Pasadena, and Paul"

- (Invited) Workshop on Cognitive Values, CU Boulder Mar 2017

Ned Hall's "Causation and the Aim of Inquiry"

- Rutgers Philosophy Department Colloquium Feb 2016

Niels Martens's "Comparativism about Mass and the Initial Variable Problem"

- (Invited) Metaphysics of Quantities Conference, NYU May 2015

Thomas Senor's "Disagreement, Evidence, and Perception"

- (Invited) Meiguo Metaphysics Mayhem, Peking University Jun 2012

TEACHING

Primary Instructor Fall 2016
PHIL 319 - Philosophy of Mathematics
Rutgers University

Primary Instructor Spring 2016
PHIL 475 - Chinese Philosophy
Rutgers University

Co-Chair Fall 2016 - Fall 2017
(with Harry Crane and Dimitris Tsementzis)

PHIL 603 - Graduate Seminar on the Foundations of Probability
 Joint Seminar of Philosophy and Statistics Depts., Rutgers University
 Teaching Assistant Fall 2015
 PHIL 108 - Introduction to Ethics
 Instructor: Adam Shriver (UPenn)
 Rutgers University
 Teaching Assistant Spring 2011
 PHIL 225 - Chinese Thought and Culture
 Instructor: Kelly Clark
 Calvin College
 Grader Fall 2013
 PHIL 407 - Intermediate Logic
 Instructor: Thony Gillies
 Rutgers University
 Grader Fall 2011
 PHIL 204 - Philosophy of Religion
 Instructor: Kelly Clark
 Calvin College
 Instructor Sep 2014, Sep 2016
 (Unofficial) Crash Course on the Foundations of Quantum Mechanics
 for the Rutgers Philosophy Community

SERVICE

Conferences and Events

- Organizer, May 18-19, 2017
 Rutgers Workshop on Structural Realism and Metaphysics of Science
- Co-Organizer (with Dean Zimmerman), June 10-11, 2016
 Rutgers Workshop on Multiverse, Theodicy, and Fine-Tuning
- Organizer, Metro Area Philosophy of Science Lecture Series (MAPS) 2015-17
- Organizer, Rutgers Philosophy of Science Reading Group 2014-16
- Co-organizer, Rutgers Metaphysics Reading Group 2015-16
- Rutgers Philosophy Department Colloquium Committee 2014-16

Contribution to Diversity

- Rutgers Philosophy Department Climate Committee 2016-17
- Graduate Panelist, Rutgers Summer Institute for Diversity in Philosophy Jul 2017
- Rapporteur, 3rd Rutgers Workshop on Chinese Philosophy Apr 2016
- Participant, Muslim-Jewish-Christian Interfaith Dialogue May 2016
 on Providence and Randomness
- Discussion Leader, Rutgers University International TA Orientation Aug 2016

Referee for: *Mind*, *Australasian Journal of Philosophy*, *British Journal for the Philosophy of Science* (×2), *Philosophy of Science* (×3), *Erkenntnis* (×2), *Statistical Science*, *Proceedings of the SILFS 2014—the Italian Society for Logic and Philosophy of Science Conference*

OTHER WORK
 AND RESEARCH

Editorial Assistant Spring 2017
 For Ernest Sosa and Georgi Gardiner
Nôus, *PPR*, *Philosophical Issues*

National Science Foundation (NSF) Research Fellowship Summer 2012
 Topic: Theoretical Physics and Computer Modeling:
 Recollision Excitation and Non-Sequential Double Ionization of Helium
 Supervisor: Stan L. Haan
 Department of Physics,
 Calvin College

- Summer Research Fellowship** Summer 2011
 Topic: Mencius (Mengzi) and the Concept of Tian
 Supervisor: Kelly James Clark
 Department of Philosophy,
 Calvin College
- Undergraduate Research Assistant** 2008-2010
 Topic: Membrane Distillation for Water Purification with Reverse Osmosis
 Supervisor: Tai-Sheng Chung
 Chemical and Biomolecular Engineering,
 National University of Singapore
- Intern at the *New York Times*** Summer 2010
 Interviews, data analysis, and research on business, economics, culture,
 and the arts in China.
 Supervisor: **David Barboza** (2013 Pulitzer Prize Winner)
New York Times, Shanghai Bureau

COURSEWORK
 (*: AUDITED)

Philosophy of Physics and Philosophy of Science

- Philosophy of Physics: Foundations of Quantum Mechanics. (David Albert)
 Philosophy of Physics: Philosophy of Space and Time. (David Albert)
 Philosophy of Physics: Direction of Time. (David Albert)
 *Philosophy of Physics: Quantum Mechanics. (NYU: Tim Maudlin)
 *Philosophy of Physics: Spacetime. (NYU: Tim Maudlin)
 *Philosophy of Physics: Gauge Theories. (NYU: Tim Maudlin)
 *Philosophy of Physics: Space and Time. (Jill North)
 *Advanced Philosophy of Quantum Mechanics. (David Albert)
 *Foundations of Quantum Mechanics. (Math: Sheldon Goldstein)
 *Philosophy of Science. (Barry Loewer)
 *Logical Philosophy of Science. (Princeton: Hans Halvorson)

Metaphysics

- Metaphysics: David Lewis's Philosophy of Science. (Barry Loewer)
 *Metaphysics of Quantum Mechanics. (Jill North, Ted Sider)
 *Metaphysics: Fundamentality. (Barry Loewer, Jonathan Schaffer)
 *Seminar in Metaphysics. (Robert Adams)
 *Philosophy of Mathematics: Applied Mathematics. (NYU: Hartry Field, Cian Dorr)
 *Seminar in Metaphysics. (NYU: Kit Fine)
 *Time and Modality. (NYU: Cian Dorr)
 *Metaphysics: Modal Logic as Metaphysics. (Princeton: Delia Fara, Gilbert Harman)
 *Metaphysics: Physicalism. (Princeton: Shamik Dasgupta, Boris Kment)

Cognitive Science, Linguistics, and Logic

- Cognitive Science Proseminar. (Rutgers Center for Cognitive Science)
 Semantics I. (Linguistics: Simon Charlow)
 Model Theory. (Math: Grigor Sarsyan)
 *Philosophy of Language: Singular Thought. (Jeff King)
 *Philosophy of Linguistics: Minimal Entities. (NYU: Kit Fine, Lucas Champollion)
 *Category Theory. (Princeton: Hans Halvorson)

Epistemology and Decision Theory

- *Decision Theory. (Princeton: Adam Elga)
 *Bayesian Epistemology. (Branden Fitelson)
 *Current Topics in Formal Epistemology. (Branden Fitelson)
 *Epistemology. (Ernest Sosa)

Philosophy of Religion

Philosophy of Religion: Problem of Evil. (Marilyn Adams, Robert Adams, Dean Zimmerman)

*Philosophy of Religion. (Marilyn Adams)

Other Philosophy Courses

Proseminar. (Andy Egan, Jonathan Schaffer)

Ethics. (Derek Parfit, Ruth Chang)

Independent Study on Chinese Philosophy. (Ruth Chang)

Early Modern Philosophy of Mind. (Martin Lin)

Mathematics and Physics

Real Analysis I. (Math: Eric Carlen)

Mathematical Physics I. (Math: Roderich Tumulka)

Mathematical Physics II. (Math: Roderich Tumulka)

Statistical Mechanics: Non-Equilibrium. (Math: Joel Lebowitz)

Bohmian Mechanics. (Math: Sheldon Goldstein)

Mathematical Quantum Mechanics. (Math: Michael Kiessling)

*General Relativity. (Princeton Physics: Frans Pretorius)

*Overview of Quantum Field Theory. (Physics: Natan Andrei)

DISSERTATION ABSTRACT

In my dissertation *Essays on the Metaphysics of Quantum Mechanics*, I trace various philosophical puzzles of quantum mechanics back to their source — the wave function. I first clarify how its mathematical representation relates to the physical world. In Chapter 1, "An Intrinsic Account of Quantum Mechanics: Progress in Field's Nominalistic Program," I show that the wave function represents four intrinsic relations on physical space-time, uniquely up to certain symmetries. Since my intrinsic account dispenses with any essential reference to mathematical objects, it extends Field's nominalistic program to the quantum realm. In Chapter 2, "Our Fundamental Physical Space: An Essay on the Metaphysics of the Wave Function," I argue against *configuration space realism*, the view that physical space-time is "emergent" from the high-dimensional configuration space that the wave function lives on. Emphasizing the roles of dynamics and symmetries, I show that physical space-time is more fundamental than the configuration space. In Chapter 3, "The Best Summary of the Quantum World: The Universal Wave Function as a Humean Law," I defend a Humean proposal: the wave function is part of the Humean best system that supervenes on a separable mosaic. The defense provides a new geometric argument for the uniqueness of the wave function given the actual particle trajectories.

My dissertation brings together various themes in metaphysics and philosophy of science, including fundamentality, structuralism, explanation, objective probability, and laws of nature.