Academic Report for 2013 (01.01.2013- 31.12.2013)

Prof. Dr. Stephan Hartmann

April 30, 2014

2013 was a very successful year for the Chair of Philosophy of Science at the MCMP at LMU Munich. Several excellent new postdocs and PhD students joined us, we hosted a number of highly successful academic events (such as the 17th UK and European Meeting on the Foundations of Physics), a large number of scholars from all over the world visited us to work with us and to present their work, and our new master program in Logic and Philosophy of Science keeps on attracting excellent students.

Our research is organized in three research groups. Group 1 focuses on problems from the **foundations of physics** and entertains close relations to LMU's Faculty of Physics. Group 2 works on the application of **modeling and simulation methods in philosophy**. This group established relations to research groups in economics, epidemiology, psychology and political science and several joint research projects were carried out or are planned. Group 3 works on problems from **general philosophy of science and formal epistemology**. Also this group entertains close links to other departments, e.g. LMU Department of Statistics, stressing the interdisciplinary character of our research. Our ambition is to become the leading research center in the world that applies scientific (i.e. formal and empirical) methods to questions of philosophical interest. To do so, we are also actively encouraging philosophically minded scientists to join us and to work with us.

In this report, we present the work done in 2013 in more detail.

(I) We presented our center to the academic public at various occasions:

We gave various lectures and interviews. They are listed with each MCMP member below in point (IV).

(II) We were using different media in order to reach out to the public:

1. The MCMP website

We completely revamped the MCMP website in February and will refresh it again in December 2014. As part of this relaunch we introduced a dedicated intranet section for our members and those who will come to the MCMP in the future, giving information about living and working in Munich and at the MCMP. Currently we are also working on a publication management system in collaboration with the University Library and the Internet Department of LMU.

2. MCMP on iTunes U

The MCMP regularly records lectures and talks, which one can watch on iTunes U. Therefore we employ several members of the MCMP for LMUcast projects, recording talks and conferences. At the moment the MCMP has eleven video channels with a total of 400 published recordings since the start in April 2011, which regularly appear in "great" or "recommended collections" on iTunes U. From January 2013 until today we recorded 150 talks, including colloquia

and have counted thousands of video downloads on iTunes U alone, which does not even include downloads through other platform links. The *Foundation of Physics* conference can stand as an example: Julian Barbour's evening lecture was downloaded over 400 times through our website and via Facebook, not counting downloads on iTunes U directly, on the first day of availability and has been downloaded over 900 times until today.

In order to develop this aspect of promoting the MCMP we developed a new 100-seconds video format called "First Sight", used as teaser for talks, conferences and teaching.

All our media achievements are listed on our MCMP media page on our website, including a video search function.

3. MCMP on Coursera

The MCMP is making use of Massive Open Online Courses (MOOCs). Hannes Leitgeb and Stephan Hartmann are hosting a course on *Introduction to Mathematical Philosophy* with worldwide participants.

4. MCMP @ Facebook

The MCMP regularly posts news and events on Facebook. Currently we have about 700 people subscribed to our page, where we are presenting news about the MCMP and the iTunes U channels.

5. M-Phi Blog

The MCMP maintains a blog on current topics in mathematical philosophy.

6. What's Hot in Mathematical Philosophy

Members of the MCMP are in charge of the "What's Hot in Mathematical Philosophy?" series which appears regularly in the online gazette *The Reasoner.*

7. Internship Program

In March 2013 we successfully started the MCMP internship program "Science & Communication". At the moment this program is advertised again especially among students of Communication and Media Design.

8. Others about the MCMP

Stephan Hartmann was interviewed for several publications, resulting in the following articles:

An interview for an upcoming article on Massive Open Online Courses (MOOCs) in the *Münchner UniMagazin* (Issue 2, 2014), the magazine of LMU Munich took place in 2013.

He was the topic of an article called "Der Netzwerker" in the LMU magazine *Einsichten* (Nummer 1, 2013) and was interviewed by Maximilian G. Burkhart and Thomas Morawetz to explore mathematical methods for philosophical questions

Stephan Hartmann was also interviewed by Sebastian Kress from Süddeutsche Zeitung. The article "Auf dem Weg zur Wahrheit" appeared in their issue of March 8th 2013.

An Interview with Albert Anglberger also took place, published in *The Reasoner* (Volume 7, Number 6, June 2013).

Another publication resulted when Stephan Hartmann was interviewed by Lukas Leucht and Miguel de la Riuva for the philosophy student's journal *Cog!to* (06/2013) about his research, his teaching and the MCMP.

Furthermore Annik Rubens did an Audiocast about *Mathematical Philosophy: Von Rationalität und Fairness* with Stephan Hartmann. It was presented in LMU's monthly podcast programme "Tonspur Forschung" in August 2013.

(III) We organized a great variety of academic events including speakers from all over the world and we had a great number of excellent visitors:

a. Talks and Colloquia

1. Colloquium in Logic, Philosophy of Science and Philosophy

The Colloquium in Logic, Philosophy of Science and Philosophy is held every week on Wednesday during the term in Ludwigstraße 31, Ground Floor, Room E21. Sometimes additional sessions are organized. The speakers are invited to give a talk and are often staying for some days at our Centre. This is the list of the Wednesday Speakers/Visitors January until December 2013:

09.01.2013	18:15 - 20:00	Karim Thebault (LMU)
16.01.2013	16:15 - 18:00	Andrey Bovykin (Bristol)
	18:15 - 20:00	Luigi Scorzato (HA)
23.01.2013	16:15 - 18:00	Benjamin Brewersdorf (Konstanz)
	18:15 - 20:00	Detlef Dürr (Munich)
30.01.2013	16:15 - 18:00	Paul Naeger (Bremen)
	18:15 - 20:00	Daniel Wohlfarth (Bonn & Cambridge)
06.02.2013	16:15 - 18:00	Jake Chandler (MCMP)
	18:15 - 20:00	Brian Pitts (Cambridge)
17.04.2013	18:15 - 20:00	Omri Tal (Leipzig)
24.04.2013	18:15 - 20:00	Hans Briegel (Innsbruck)
15.05.2013	16:15 - 18:00	Adam Caulton (London)
	18:15 - 20:00	Catarina Dutilh Novaes (Groningen)
22.05.2013	16:15 - 18:00	Eckehart Köhler (Vienna)
	18:15 - 20:00	Bernard Lauth (LMU)
29.05.2013	16:15 - 18:00	Eric Winsberg (USF)
	18:15 - 20:00	Thomas Bonk (LMU)
05.06.2013	16:15 - 18:00	Tobias Rosefeldt (Berlin)
	18:15 - 20:00	Ralph Cahn (LMU)
12.06.2013	16:15 - 18:00	Laurent Bienvenu (Paris)
	18:15 - 20:00	Eran Tal (Bielefeld)
19.06.2013	16:15 - 18:00	Patrick Greenough (St. Andrews)
	18:15 - 20:00	Manfred Harth (LMU)
26.06.2013	16:15 - 18:00	Christian Joas (Munich)

	18:15 - 20:00	Franz Dietrich (Paris & UK)
03.07.2013	16:15 - 18:00	Michael Stoeltzner (South Carolina)
	18:15 - 20:00	Klaus Mainzer (Munich)
10.07.2013	16:15 - 18:00	Michael Silberstein (Elizabethtown) & Robert Bishop (Wheaton)
	18:15 - 20:00	Seamus Bradley (LMU)
17.07.2013	16:15 - 18:00	Chiara Lisciandra (LMU)
	18:15 - 20:00	Michael Stoeltzner (South Carolina)
24.07.2013	16:15 - 18:00	Phil Kremer (Toronto)
	18:15 - 20:00	Alexander Bird (Bristol)
16.10.2013	18:15 - 20:00	Cédric Paternotte (LMU)
23.10.2013	18:15 - 20:00	Michael Kraemer (RWTH Aachen)
30.10.2013	18:15 - 20:00	Benedikt Grothe (LMU)
06.11.2013	16:15 - 18:00	Sander Beckers (KU Leuven)
	18:15 - 20:00	Aidan Lyon (University of Maryland)
13.11.2013	16:15 - 18:00	Karen Crowther (Sydney)
20.11.2013	16:15 - 18:00	Mario Hubert (Lausanne)
	18:15 - 20:00	Matthias Schirn (LMU)
27.11.2013	18:15 - 20:00	Heinz-Jürgen Schmidt
04.12.2013	16:15 - 18:00	Christ Porter
	18:15 - 20:00	Verena Wagner (Regensburg)
11.12.2013	16:15 - 18:00	Soroush Rafiee Rad (Tilburg)
	18:15 - 20:00	Kirsten Volz (Tübingen)
18.12.2013	16:15 - 18:00	Erik Curiel (LMU)
	18:15 - 20:00	Benjamin Smart (Birmingham)

2. Colloquium in Mathematical Philosophy

The Colloquium in Mathematical Philosophy is held every week on Thursday during the term in Ludwigstraße 31, Ground Floor, Room E21. Sometimes additional sessions are organized. The speakers are invited to give a talk and are often staying for some days at our Centre. This is the list of the Thursday Speakers/Visitors January until December 2013:

10.01.2013	16:15 - 18:00	Alessandra Palmigiano (Amsterdam)
	18:15 - 20:00	Ben Smart (Birmingham)
17.01.2013	16:15 - 18:00	Sebastian Sequoiah-Grayson (Groningen)
	18:15 - 20:00	Torben Braüner (Roskilde)
24.01.2013	16:15 - 18:00	Alexandra Zinke (Konstanz)
	18:15 - 20:00	Catarina Dutilh Novaes (Groningen)
31.01.2013	16:15 - 18:00	Sebastiaan Terwijn (Nijmegen)
	18:15 - 20:00	Rosalie Lemhoff (Utrecht)
07.02.2013	18:15 - 20:00	Moritz Schulz (LOGOS)

18.04.2013	18:15 - 20:00	Paul Teller (Davis)
25.04.2013	16:15 - 18:00	Grigory Olkhovikov (Ural State University)
	18:15 - 20:00	Barbara Vetter (Berlin)
02.05.2013	12:15 - 14:00	Ricki Bliss (Kyoto)
	16:15 - 18:00	Chris Fermüller (Vienna)
	18:15 - 20:00	John Broome (Oxford)
03.05.2013	10:15 - 12:00	Kai Wehmeier (Irvine)
03.05.2013 (Friday)	16:15 - 18:00	John Broome (Oxford)
06.05.2013 (Monday)	18:15 - 20:00	Adam Caulton (Cambridge)
16.05.2013	16:15 - 18:00	Martin Pleitz (Münster)
	18:15 - 20:00	Salvatore Florio (Kansas)
30.05.2013	16:15 - 18:00	Hartley Slater (Australia)
	18:15 - 20:00	Alexander Afriat
06.06.2013	12:15 - 14:00	Hartley Slater (Australia)
	18:15 - 20:00	Veli Mitova (Vienna)
13.06.2013	16:15 - 18:00	Jakub Szymanik (Amsterdam)
	18:15 - 20:00	Patrick Blackburn (Roskilde)
20.06.2013	16:15 - 18:00	Igal Kvart (Jerusalem)
	18:15 - 20:00	Scott Sturgeon (Oxford)
13.06.2013	12:15 - 14:00	Christian Wallmann
	16:15 - 18:00	Patrick Blackburn (Roskilde)
27.06.2013	16:15 - 18:00	Stewart Shapiro (Ohio)
	18:15 - 20:00	Joseph Almog (Los Angeles)
28.06.2013 (Friday)	10:15 - 12:00	Samir Okasha (Bristol)
11.07.2013	16:15 - 18:00	Steve Awodey (Carngie Mellon)
	18:15 - 20:00	Tom Pashby (Pittsburgh)
18.07.2013	16:15 - 18:00	Arthur Paul Pedersen (Berlin)
25.07.2013	16:15 - 18:00	Alexander Bird (Bristol)
	18:15 - 20:00	Marie Duzi (Ostrava)
24.10.2013	16:15 - 18:00	Björn Jespersen (Czech Republic)
07.11.2013	18:15 - 20:00	Eleonora Cresto (Buenos Aires)
14.11.2013	16:15 - 18:00	Jake Chandler (LMU)
	18:15 - 20:00	Hitoshi Omori (CUNY)
21.11.2013	16:15 - 18:00	David Etlin (LMU)
28.11.2013	18:15 - 20:00	Nathan Wildman (Hamburg)
05.12.2013	16:15 - 18:00	Prof. Schwichtenberg (LMU)
12.12.2013	16:15 - 18:00	Dietmar Zaefferer (LMU)
	18:15 - 20:00	Thomas Piecha (Tuebingen)

19.12.2013 18:15 - 20:00 Jan-Willem Romeijn (Groningen)

3. Work in Progress

The MCMP is also scheduling an intern Work in Progress session, offering MCMP members to talk about their current work and to get feedback on early stages from their colleagues. This is a list of the Work in Progress Presentations that were given from January until December 2013:

10.01.2013	Radin Dardashti (LMU)
31.01.2013	Thomas Meier (LMU)
25.04.2013	Philip Pfaller
18.07.2013	Chiara Lisciandra (LMU)
17.10.2013	Kristina Liefke (LMU)
17.10.2013	Conor Mayo-Wilson (LMU)
31.10.2013	Gregory Wheeler (LMU)
07.11.2013	Filippo Casati (Bochum/St Andrews)
21.11.2013	Michael Cuffaro (LMU)
05.12.2013	Brian Padden (LMU)
12.12.2013	Lorenzo Casini (LMU)

b. Workshops and Conferences

In 2013 the MCMP hosted in total twenty-two workshops and conferences, eleven at the Ludwig-Maximilians-Universität and eleven at other venues. With our events we welcomed over seven hundred participiants, about 85% male and about 15% female.

The major percentage of our participants came from Germany, the United States of America, Great Britain and the Netherlands. However, the MCMP attracted visitors from other countries as well. The *Foundations of Physics* can stand a s anexample: only 26% came from Germany, the other 74% were international visitors from about twenty different countries such as France, Hungary, Poland, Argentina, Spain, Italy and Paraguay.

From the total of twenty-two events the Chair of Philosophy of Science hosted seven workshops and conferences throughout the year:

1. Quantum Gravity in Perspective

31.05.-01.06.2013: Quantum Gravity in Perspective; Karim Thébault; LMU.

The search for a theory which would unite the insights of general relativity with those of quantum theory, a theory of quantum gravity, has now lasted the better part of a century. Although a number of promising candidate theories have emerged (string theory and loop quantum gravity being the most prominent), a large array of conceptual, formal and methodological issues are still unresolved. The increasingly fractured nature of the field – with long standing and well publicised disagreements over the premisses, goals and criteria for evaluation relevant to a 'theory of quantum gravity' –

might be seen as one significant factor impeding progress. With this in mind, the aim of this workshop was to bring together physicists, philosophers and historians with interests in various approaches to quantum gravity towards a mutually beneficial cross-pollination of ideas. By looking at the problem of quantum gravity from a variety of different perspectives, it was hoped, we will all be able to see a little further.

Invited Speakers: Nazim Bouatta (Cambridge), Richard Dawid (Vienna), Johanna Erdmenger (Max Planck Munich), Sabine Hossenfelder (NORDITA), Claus Kiefer (Cologne), Brian Pitts (Cambridge), Dean Rickles (Sydney), Chris Wuthrich (UCSD).

2. Stegmüller Symposium

01.06.2013: Stegmüller Symposium; Hannes Leitgeb, Julian Nida-Rümelin und Stephan Hartmann; LMU.

In diesem Symposium zu Ehren Wolfgang Stegmüllers, dessen Geburtstag sich am 3. Juni zum neunzigsten Mal jährte berichteten Weggefährten und Schüler über Wolfgang Stegmüller, über sein Wirken und den Einfluss, den er auf sie ganz persönlich sowie auf die analytische Philosophie in Deutschland und darüber hinaus hatte.

Wolfgang Stegmüller, von 1958 bis zu seiner Emeritierung 1990 Ordinarius für Philosophie, Logik und Wissenschaftstheorie an der LMU, schuf in einer ungeheuren Arbeitsleistung ein umfangreiches und thematisch breites Werk in der Erkenntnistheorie, Logik und Grundlagenforschung, Wissenschaftstheorie und Gegenwartphilosophie. Wolfgang Stegmüller war auch maßgeblich an der Ausbildung von Generationen deutscher Philosophen in analytischer Philosophie beteiligt. Die analytische Philosophie, die im Zusammenhang mit dem Naziterror fast gänzlich aus Deutschland verschwunden war, blüht inzwischen wieder, und viele Stegmüller-Schüler sind heute selbst Professoren. Durch seine einflussreichen und hervorragend geschriebenen Bücher wirkte Stegmüller auch weit über München und die akademische Philosophie hinaus.

Invited Speakers: Godehard Link (Professor Emeritus der Logik und Wissenschaftstheorie, LMU München), Jürgen Mittelstraß (Professor der Philosophie, Universität Konstanz), Carlos-Ulises Moulines (Professor Emeritus der Logik und Wissenschaftstheorie, LMU München), Felix Mühlhölzer (Professor der theoretischen Philosophie, Georg-August Universität Göttingen), Hans Rott (Professor für theoretische Philosophie, Universität Regensburg), Wolfgang Spohn (Professur für Philosophie und Wissenschaftstheorie an der Universität Konstanz), Ulrich Gähde (Professor für theoretische Philosophie, Universität Hamburg).

3. Reduction and Emergence in Physics

21.06.-22.06.2013: Reduction and Emergence in Physics; Karim Thébault and Stephan Hartmann; CAS.

The aim of the workshop was to bring together physicists and philosophers of physics for a meeting focused on fundamental issues in physics relating to reduction and emergence. Particpants included researchers with expertise in string theory, statistical physics, condensed matter physics, and renormalisation. The workshop combined consideration of issues in contemporary physics research with discussion of longstanding philosophical questions, such as the nature of scientific explanations and the relationship

between different systems of physical laws. It was planned and hosted in cooperation with the CAS, regarding the research focus programme on Reduction and Emergence.

Invited Speakers: Michael Berry (Bristol), Jeremy Butterfield (Cambridge), Richard Dawid (Vienna), Georgi Dvali (Munich), Erwin Frey (Munich), Paul Hoyningen-Huene (Hannover), Eric Winsberg (South Florida), Charlotte Werndl (LSE), Lena Zuchowski (Cambridge).

4. New Perspectives on External World Scepticism

9.07.-10.07.2013: New Perspectives on External World Scepticism: Luca Moretti (LMU Visiting Fellow); Hochschule für Philosophie.

Is the external world largely as it appears to be? How can we rule out the possibility that we are constantly deceived by a vicious demon or the Matrix? In response to the global sceptic, contemporary epistemologists claim - for example - that perceptual justification is immediate in that it doesn't require independent reason for rejecting sceptical alternatives. Others contend that we are a priori entitled to trust "cornerstone" propositions that guarantee the reliability of our perceptions. Another view is that ordinary hypotheses are preferable to sceptical alternatives because they better explain our experiences. All these responses have been challenged with informal and formal objections. Bayesian methodology seems to vindicate entitlement theories but it is arguably unsuitable to model the initial state of radical ignorance presupposed by the sceptic. Immediate justification theories are affected by gruelling difficulties, like the bootstrapping and the cognitive penetrability problem. The thesis that explanatory force produces justification is controversial and - some contend - incompatible with formal representations of rational belief.

The workshop focused on these and other interesting responses to external world scepticism. It aimed to gather together traditional and formal epistemologists to foster collaboration between researchers working from a variety of perspectives.

Invited Speakers: Berit Broogard (Missouri, St.Louis), Thomas Grundmann (Cologne), Jim Pryor (New York), Martin Smith (Glasgow), Ralph Wedgwood (Southern California, Los Angeles).

5. Summer School: Physics and Philosophy of Time

23.07.-28.07.2013: Summer School: Physics and Philosophy of Time; Detleff Dürr (LMU), Michael Esfeld (Lausanne), Chris Wüthrich (UCSD) and Stephan Hartmann; Lenzkirch/Saig, Black Forrest.

The focus of this summer school was to appreciate how physics and philosophy interact to contribute to our understanding of the nature of time. Our goal was to bring together scholars from both areas to consider central aspects of time as they arise in various physical theories, as well as how traditional philosophical questions regarding time may both motivate physical theorizing and find themselves constrained by it. In particular, we considered what statistical physics, the special and general theories of relativity, quantum mechanics, and recent developments in quantum gravity imply for our understanding of (space and) time. The relevant scientific theories consider, among many other topics, the physics of motion, the nature of the continuum, and the geometry of flat and curved spaces. Although the summer school was also considering more straightforwardly philosophical issues, the primary focus was

on the foundations of spacetime as the philosophy of physics is concerned with.

Invited Speakers: Claus Beisbart (University of Bern) ,Gordon Belot (University of Michigan), Mathias Frisch (University of Maryland), Sheldon Goldstein (Rutgers University), Jenann Ismael (University of Arizona), Tim Maudlin (New York University), Nino Zanghì (University of Genova).

6. Foundations of Physics

29.07.-31.07.2013: Foundations of Physics; Karim Thébault and Stephan Hartmann; LMU and Deutsches Museum.

This conference considered topics across the entire spectrum of foundational and philosophical approaches to physical theory. Whilst there was a particular focus upon the analysis of specific physical theories (e.g. classical and quantum theories of spacetime, quantum mechanics, quantum field theory, statistical physics), we also invited submissions on methodological questions, experimental practices, and the study of philosophically interesting episodes from the history of physics. It was hoped that bringing together philosophers of physics, historians of physics, and working physicists to discuss topics of mutual interest, will be of great benefit to practitioners of each discipline.

This was the 17th in the series of UK and European Meeting on the Foundations of Physics, following on from successful conferences in Aberdeen (2010) and Leeds (2007).

Invited Speakers: Markus Aspelmeyer (Professor of Physics, University of Vienna, Austria), Julian Barbour (Author and Visiting Professor in Physics, University of Oxford, UK), Jean Bricmont (Professor of Physics, Université catholique de Louvain, Belguim), Fay Dowker (Professor of Physics, Imperial College London, UK), Tim Maudlin (Professor of Philosophy, New York University, US), John D. Norton (Professor in History and Philosophy of Science, University of Pittsburgh, US), Rob Spekkens (Faculty member, Perimeter Institute for Theoretical Physics, Canada).

7. Reduction and Emergence in the Sciences

14.-11.-16.11.2013: Reduction and Emergence in the Sciences; Sebastian Lutz and Stephan Hartmann, CAS.

Reduction and emergence play a central role in the relations of scientific theories and disciplines. For instance, a reducible theory is in some sense replaceable but also supported by its reducing theory. In contrast, a theory that describes emergent phenomena arguably stands alone in both respects. Unfortunately, the discussion about reduction and emergence suffers from two uncertainties at once. On the one hand the concepts of reduction and especially emergence are not precisely defined, on the other hand there are few if any uncontentious cases of reduction or emergence in the sciences. This stalemate can be overcome by a thorough analysis of relations between and within scientific theories. These relations can then serve as a basis for explications of reduction and emergence that are applicable in the sciences.

This conference brought together philosophers of science and scientists of different disciplines with the aim of addressing the inter- and intratheoretic relations of specific theories and providing precise notions of such relations for the application in the sciences. It was planned and hosted in cooperation with the CAS, regarding the research focus programme on Reduction and Emergence.

Invited Speakers: Patricia S. Churchland (Professor of Philosophy, University of California, San Diego, and Salk Institute, San Diego, USA), Kevin D. Hoover (Professor of Economics and Philosophy, Duke University, USA), Andreas Hüttemann (Professor of Theoretical Philosophy, University of Cologne, Germany), Margaret Morrison (Professor of Philosophy, University of Toronto, Canada).

c. Additional Activities

1. Philosophy of Physics Reading Group

This reading group focuses on the foundations of modern physics and addresses conceptual, formal, and philosophical problems. We discuss contemporary papers from mathematics, physics, and philosophy of science journals that often relate to research that is conducted by some of the members of the group.In the summer 2014 semester, we focus on topics in the philosophy of quantum information theory and quantum computation (e.g., the ontological status of the concept of quantum information, the significance of information theoretic measures of entanglement, of other non-classical correlation measures such as quantum discord, alternative models of quantum computation, and so on). Participants are encouraged to suggest interesting papers.

The Philosophy of Physics group at the MCMP also hosts the mailing list philphysmunich. The list is a subscription-based electronic mailing list for the announcement of events relating to the foundations and philosophy of physics within Munich. In general, these will be talks, conferences, workshops or public lectures. The intended users of the list include physicists, philosophers and historians of physics.

2. Social Epistemology Reading Group

The reading group focuses on current issues in formal and non-formal social epistemology, which have enjoyed many interesting developments in the recent years. Our first series of sessions deals with peer disagreement, i.e. situations in which agents disagree although they are equivalent from an epistemic/evidential/rational point of view. Other topics of interest include (but are not limited to) judgment aggregation, information markets, simulations of social epistemic systems, and the like. Participants are encouraged to suggest interesting papers from these and smiliar areas.

3. Reduction and Emergence in the Sciences Reading Group

In coordination with the MCMP, the Center for Advanced Studies of the LMU is hosting a "Schwerpunkt" on reduction and emergence in the sciences, and in this connection the MCMP is running a reading group for graduate students, postdocs, and lecturers in the sciences and in philosophy.

The reading group meets once a month, either discussing an article or having a presentation by one of the participants of the group. The group is accordingly not only intended as an introduction to the topic, but also meant to lead to genuine research advances. In the first year, the focus of the discussion will lie on physics, in the following year we will branch out and look at other disciplines as well.

4. Mathematical Explanation in Science Reading Group

There has been a burst of publications on the topic of mathematical explanation (see the entry on mathematical explanation in the Stanford Encyclopedia of Philosophy), driven by the intuition that a

mathematical explanation of an empirical phenomenon proceeds by identifying "structural" facts and "in virtue of" ignoring the (causal) details.

As such, the mathematical account of scientific explanation has the potential to undermine the pretensions of causal accounts, nowadays very popular. Obviously, to this end mathematical explanations should be such that they cannot be recast as causal, but rather be "distinctively" mathematical.

While the existence of mathematical explanations may constitute a problem for the causalist, it doesn't directly affect the pluralist, who is happy with there being various kinds of explanation. Still, the interesting issue remains of understanding how exactly mathematical explanation works and what makes it different from other kinds of explanation.

It seems then desirable to answer the following questions: (i) What is a mathematical explanation of an empirical phenomenon? (ii) Are differences (if any) with causal explanations sharp? (iii) How does this debate advance our understanding of scientific explanation? In particular, are there interesting features that are shared by causal and mathematical explanations?

5. Imprecise Probabilities Reading Group

This reading group focuses on the philosophical problems raised by imprecise probabilities. One motivation for using imprecise probabilities instead of precise probabilities is that former are more psychologically realistic — real people tend not to have precise, real-valued probabilities in their heads. However, this small dose of realism causes a number of interesting philosophical difficulties. The reading group will be focused on the lack of proper scoring rules for imprecise probabilities, how to define probabilistic independence in the context of imprecise probabilities, and methods of imprecise probability aggregation.

6. Evolutionary Game Theory, Meaning, and Vagueness Reading Group

This reading group focuses on evolutionary game theoretic accounts of meaning, information, and vagueness. We'll initially be working through the book *Signals: Evolution, Learning & Information* by Brian Skyrms. In addition to reading through other relevant literature on this topic, we're also interested in writing our own computer simulations.

(IV) We hosted LMU Faculty, Doctoral Fellows and Post-Doctoral Fellows:

Here is the list of LMU faculty, doctoral and postdoctoral fellows that were members of the MCMP during the period from January to December 2013:

PD Dr. Holger Andreas

Dr. Seamus Bradley

Dr. Lorenzo Casini

Dr. Michael Cuffaro

Dr. Erik Curiel

Radin Dardashti

Lee Elkin

Prof. Dr. Stephan Hartmann

Dr. Catherine Herfeld

Dr. Kristina Liefke

Dr. Sebastian Lutz

Dr. Aidan Lyon

Dr. Conor Mayo-Wilson

Brian Padden

Dr. Cédric Paternotte

Dr. Soroush Rafiee Rad

Dr. Alexander Reutlinger

Dr. Karim Thébault

Dr. Gregory Wheeler

a. PD Dr. Holger Andreas

1. Type of Affiliation with the MCMP

Holger Andreas has been working as an Assistant Professor until September 2013; since then he is a Postdoctoral Fellow.

2. Research Projects

Holger Andreas has been primarily working on paraconsistent reasoning in science. His research aims are concentrated on the Ramsey Test semantics of conditionals and on understanding the dispositions by these semantics.

3. Academic Output

Publications:

(201x): Carnapian Structuralism, *Erkenntnis*, forthcoming.

(2013): Deductive Reasoning in the Structuralist Approach, *Studia Logica* 101: 1093-1113.

(2013) Theoretical Terms in Science, *The Stanford Encyclopedia of Philosophy* (Spring 2013 Edition), Edward N. Zalta (ed.), URL =<http://plato.stanford.edu/entries/theoretical-terms-science/>.

(2013): Frames and Theory-Elements in Structuralism, in: R. Hagengruber and U. Riss (eds.): *The Philosophy's Relevance in Information Science*, Springer.

(2013): Perspectives on Structuralism, *Journal for General Philosophy of Science*, forthcoming; together with Frank Zenker.

Presentations:

An Inferential Approach to Explanation
IV Madrid Workshop on New Trends in the Philosophy of Science: Inferentialism in Epistemology and Philosophy of Science, Madrid; together with Lorenzo Casini.

Understanding Disposition Concepts
Philosophy of Science Colloquium at the Chair for Philosophy of Science, University of Bonn.

Networks of Partial Structures
Congress on Logic and Philosophy of Science at Ghent University.

Networks of Partial Structures
Fourth Conference of the European Philosophy of Science Association (EPSA), Helsinki.

The Logic of Scientific Methodology
Retreat of the Adolf Butenandt Institute for Molecular Biology at LMU Munich, Brixen.

Descriptivism about Theoretical Concepts Implies Ramsification or Conventionalism
International Conference {\it The Analysis of Theoretical Terms}, Munich Center for Mathematical Philosophy.

Descriptivism about Theoretical Concepts Implies Ramsification or Conventionalism
1-st Conference of the GWP (Gesellschaft für Wissenschaftsphilosophie) in Hannover.

b. Dr. Seamus Bradley

1. Type of Affiliation with the MCMP

Seamus Bradley is Postdoctoral Fellow at the MCMP.

2. Research Projects

Seamus Bradley works on topics from decision theory, formal epistemology and philosophy of science.

3. Academic Output

Publications:

(201x): Should subjective probabilities be sharp?, *Episteme,* forthcoming; together with Katie Steele.

(201x): Uncertainty, learning and the 'problem' of dilation, *Erkenntnis*, forthcoming; together with Katie Steele.

(2013): Laplace's Demon and Climate Change, *Grantham Institute on Climate Change discussion paper 103*; together with Roman Frigg, Hailiang Du and Leonard A. Smith.

(2013): Probabilistic forecasting: why model imperfection is a poison pill, in: Hanne Andersen, Dennis Dieks, Gregory Wheeler, Wenceslao Gonzalez and Thomas Uebel (eds.): *New Challenges to Philosophy of Science,* Springer; together with Roman Frigg, Reason L. Machete, Leonard A. Smith.

Presentations:

A general theory of updating beliefs
December 03, 2013 Bayreuth Research Forum University of Bayreuth.
July 20, 2013 – July 22, 2013 Bristol–Munich Workshop University of Bristol.

When can we take model probabilities seriously, and what can we do when we can't?
October 11, 2013 – October 12, 2013 Probabilistic Modelling in Science and Philosophy University of Bern.

Imprecise choice
July 10, 2013 MCMP weekly seminar Munich Centre for Mathematical Philosophy, LMU.

The role of rationality in rational choice and theory choice
July 04, 2013 – July 05, 2013 British Society for the Philosophy of Science University of Exeter.

Further Activities:

Organiser of conference: Imprecise probabilities in statistics and philosophy. http://www.ipsp2014.philosophie.uni-muenchen.de/index.html

Teacher on courses: *Philosophy of Climate Science* (SS 2013), and *Practical Rationality* (WS 2013/14).

c. Dr. Lorenzo Casini

1. Type of Affiliation with the MCMP

Lorenzo Casini is a Postdoctoral Fellow at the Chair of Philosophy of Science at LMU Munich from 01.01.2013 until 28.02.2014. During his time at the MCMP he was a valued colleague and we are wishing him all the best for his future position at the University of Geneva.

2. Research Projects

Lorenzo Casini works in general philosophy of science, philosophy of biomedical and social sciences (in particular systems biology and computational economics), and philosophy of language (inferentialism). After completing the corrections on his PhD dissertation ("Causality in Complex Systems. An Inferentialist Proposal", University of Kent), he has been working on (i) scientific explanation – alone and jointly with Holger Andreas (MCMP) and Johannes Korbmacher (MCMP) – and (ii) causality/causal inference – alone and jointly with Holger Andreas (MCMP), Jon Williamson (Philosophy, Kent), Gianluca Manzo (GEMASS, CNRS & University of Paris-Sorbonne) and Davide Cantoni (Economics, LMU Munich).

3. Academic Output

Presentations:

An Inferential Account of Explanatory Counterfactuals
Inferentialism in Epistemology and Philosophy of Science, UNED, Madrid, 12 November 2013.

Not-so-minimal Models. Between Isolation and Imagination ENPOSS, Venice, 04 September 2013.

Interventions, Simulation and Causal Explanation
BSPS, Exeter, 4 July 2013.

Interventions, Simulation and Causal Explanation
Causality and Experimentation in the Sciences, Paris, 3 July 2013.

Interventions, Simulation and Causal Explanation
Reasoning Club, Pisa, 19 June 2013.

Not-so-minimal Models. Between Isolation and Imagination
INEM, Rotterdam, 15 June 2013.

Further Activities:

Lorenzo Casini was Lecturer in the course *Philosophy of Economics* and Assistant Lecturer in the course *Philosophy of the Social Sciences* (the latter course was coordinated by Holger Andreas). Both courses were held at LMU Munich and attended by upper undergraduate and postgraduate students from Philosophy as well as other disciplines. Besides, Lorenzo Casini organised the reading group "Mathematical Explanation in Science" which took place biweekly from May 2013 until January 2014.

d. Dr. Michael Cuffaro

1. Type of Affiliation with the MCMP

Michael Cuffaro is a Postdoctoral Fellow at the MCMP since September 2013.

2. Research Projects

Michael Cuffaro has been working on the philosophy of physics, the philosophy of computer science, general philosophy of science, and on the theoretical philosophy of Immanuel Kant. His current projects include: investigating the relation between local hidden variables theories of quantum correlations and classical computer simulations of quantum systems; characterising the form taken by explanations of quantum computational systems; revisiting the issue of the compatibility of non-Euclidean geometry with Kant's philosophical framework.

3. Academic Output

Publications:

(201x): Book review of "Quantum Information Theory and the Foundations of Quantum Mechanics", by Christopher G. Timpson, *Philosophy of Science.*

(201x): The Significance of the Gottesman-Knill Theorem, *Foundations of Physics*.

(201x): How-Possibly Explanations in Quantum Computer Science, *Philosophy of Science.*

(2013): On the Debate Concerning the Proper Characterisation of Quantum Dynamical Evolution, *Philosophy of Science* 80: 1125-1136; together with Wayne C. Myrvold.

Presentations:

On the Signicance of the Gottesman-Knill Theorem
Deutsche Physikalische Gesellschaft (German Physical Society) meeting, Working Group on Philosophy of Physics, Berlin, Germany, March 19, 2014.

e. Dr. Erik Curiel

1. Type of Affiliation with the MCMP

Erik Curiel is an MCMP Postdoctoral Fellow since September 2013.

2. Research Projects

Erik Curiel has been working in General Philosophy of Science (semantics of physical theories, inter-theory relations), and in Philosophy of Physics (quantum field theory on curved spacetime, black-hole thermodynamics, early-universe singularities, mathematical foundations of classical analytical mechanics, foundations of spacetime theories).

3. Academic Output

Publications:

(201x): A Primer on Energy Conditions, in: D. Lehmkuhl (ed.): *Towards a Theory of Spacetime Theories*, Einstein Studies, Birkauser.

(201x): Classical Mechanics Is Lagrangian; It Is Not Hamiltonian, *British Journal of Philosophy of Science*. Advance access online at: http://bjps.oxfordjournals.org/content/early/2013/05/11/bjps.axs034.abstract .

(201x): A Review of Larry Sklar's Philosophy and the Foundations of Dynamics, *Notre Dame Philosophical Reviews*.

Further Activities:

Organizer of bi-weekly Munich-area Philosophy of Physics reading group.

f. Radin Dardashti

1. Type of Affiliation with the MCMP

Radin Dardashti has been a MCMP Doctoral Fellow since October 2012.

2. Research Projects

Radin Dadashti has been working on several topics relevant to his PhD thesis.

3. Academic Output

Publications:

(201x): Unsharp Humean Chances in Statistical Physics: A Reply to Beisbart, *New Directions in the Philosophy of Science*; together with Luke Glynn, Karim Thébault and Mathias Frisch.

(201x): Confirmation via Analogue Simulation: What Dumb Holes Can Tell us About Gravity, submitted; together with Karim Thébault and Eric Winsberg.

(2013): Conference Summary: The Analysis of Theoretical Terms, *Reasoner* (Vol 7, Nr 6).

Presentations:

Non-Classical Probabilities, Quantum Mechanics and No-Go Theorems

Foundations of Quantum Mechanics LMU-Stanford Joint Seminar, Munich, November 2013.

Group Structuralism in Particle Physics
Foundations of Physics Conference July 2013, LMU Munich, Germany.

What Dumbholes can tell us about Gravity
Munich-Buenos-Aires Workshop July 2013, LMU Munich, Germany.
Reduction and Emergence in Physics, June 2013, LMU Munich, Germany.

Comment on Richard Dawid's Talk "String Theory, Final Theory Claim and Scientific Realism"
Quantum Gravity in Perspective June 2013, LMU Munich, Germany.

The Explanatory Capability of Physical Theories
DPG Fruehjahrstagung, February 2013, Jena, Germany.

Upper and Lower Probabilities in Quantum Mechanics
Formal Informal: Research Seminar on Foundations of Statistics February 2013 LMU Munich, Germany.

g. Lee Elkin

1. Type of Affiliation with the MCMP

Lee Elkin has been an MCMP Doctoral Fellow (funded by the MCMP) since January 2014.

2. Research Projects

Lee Elkin has been working on belief revision and its application to peer disagreement for his doctoral dissertation.

3. Academic Output

Presentations:

Applying conciliation to qualitative belief: a formal approach (under review for the British Society for Philosophy of Science Annual Conference).

h. Prof. Dr. Stephan Hartmann

1. Type of Affiliation with the MCMP

Stephan Hartmann is head of the Chair of Philosophy of Science and Co-Director of the MCMP.

2. Research Projects

Stephan Hartmann has been working in General Philosophy of Science, Bayesian Epistemology, Philosophy of Physics and Social and Political Philosophy.

2. Academic Output

Publications:

(201x): The No Alternatives Argument, *The British Journal for the Philosophy of Science*; together with Richard Dawid and Jan Sprenger.

(201x): Models, Mechanisms and Coherence, *The British Journal for the Philosophy of Science*; together with Matteo Colombo and Robert van Iersel.

(201x): Generalized Dicke States, under review.

(2013): Formal Epistemology Meets Experimental Philosophy, *Synthese* 190:8. Special issue ed. with Chiara Lisciandra and Edouard Machery. With contributions by Mark Colyvan, Giovanna Devetag, Hykel Hosni and Giacomo Sillari, James A. Overton, Matthias Unterhuber and Gerhard Schurz, Aron Vallinder and Erik J. Olsson, and Carl G. Wagner.

Presentations:

A Bayesian Account of Explanatory Reasoning
Explaining without Causes – Non-causal Explanations in the Sciences, Mathematics and Philosophy, University of Cologne, Cologne, Germany, December 2013; together with Matteo Colombo and Jan Sprenger.

Probabilistic Modeling in Philosophy
Probabilistic Modeling in Science and Philosophy, University of Berne, Switzerland October 2013.

Voting, Deliberation, and Truth
Democracy and Truth, University of Belgrade, Belgrade, Serbia, October 2013.
Department of Philosophy, University of Toronto, Toronto, Canada, September 2013.

Abstimmen, Deliberieren und Wahrheit
Jahrestagung des DVPW Arbeitskreises Handlungs- und Entscheidungstheorie, Munich, Germany, June 2013.

Learning Conditionals
Philosophical Colloquium, University of Groningen, The Netherlands, June 2013.
41st Annual Meeting of the Society for Exact Philosophy, Montreal, Canada, May 2013.
Keine-Alternativen Argumente in Wissenschaft und Philosophie Colloquium, Department of Philosophy, University of Hamburg, Hamburg, Germany, May 2013.

Center for Philosophy and Ethics of Science, University of Hanover, Germany, May 2013.

The No-Alternatives Argument
IHPST, University of Toronto, Toronto, Canada, March 2013.
Philosophy of Science as Scientific Philosophy
First international conference and kickoff meeting of the Gesellschaft für Wissenschaftsphilosophie (GWP), Hanover, Germany, March 2013.

Abstimmung, Deliberation und Wahrheit
Aktuelle Debatten in der Erkenntnistheorie: Wissen-wie und die soziale Dimension des Wissens, Bochum, Germany, February 2013.
Carl Friedrich von Siemens Stiftung, Munich, Germany, February 2013.

i. Dr. Catherine Herfeld

1. Type of Affiliation with the MCMP

Catherine Herfeld is s Postdoctoral Fellow at the MCMP since June 2013.

2. Research projects

In her months at the MCMP, Catherine is working on several projects. She has worked on and submitted proposals for two books to Oxford University Press. One is based upon her dissertation work, which is entitled *The Many Faces of Rational Choice Theory*, where she traces the history of rational choice theory and its uses and justifications in economics, which serves her as the basis for an extensive appraisal of rational choice theory in economics. She has a second book project entitled *Conversations on Rational Choice Theory,* in which she interviews eminent economists, philosophers, and psychologists about their contributions to rational choice theory. Catherine has additionally works on several smaller paper projects that fall within her larger area of expertise, which is philosophy of the social sciences, and more specifically philosophy and history of economics.

3. Academic output

Publications:

(201x): Book Review – Erickson, P. et al. (2013) How Reason Almost Lost its Mind: The Strange Career of Cold War Rationality, *Journal of Behavioral and Experimental Economics.*

(2013): The Importance of Commitment for Morality: How Frankfurt Can Enrich Economic Models, in: Bert Musschenga & Anton van Harskamp (eds.): *What Makes Us Moral: On the Capacities and Conditions for Being Moral*, Springer Publishers, pp. 51-72; together with K. Schaubroek.

(2013): The Many Faces of Rational Choice Theory – Dissertation Summary, *Erasmus Journal for Philosophy and Economics* 6 (2), pp. 171-121.

Presentations:

Has there been a normative turn in Post War economics? Jacob Marschak and the Cowles Commission, 1944-1953
24th International Congress of History of Science, Technology and Medicine, Manchester 2013;

An Argument for 'local critique in philosophy of economics: the case of rational choice theory
Society for Philosophy of Science in Practice – Fourth Biennial Conference, Toronto 2013.

An Argument for 'local critique in philosophy of economics: the case of rational choice theory
XI. Conference for the International Network of Economic Method, Rotterdam 2013.

Further Activities:

Lecturer: *Philosophy of the Social Sciences* (MCMP).

j. Kristina Liefke

1. Type of Affiliation with the MCMP

Kristina Liefke is a Doctoral Fellow at the MCMP and was previously LMU-funded.

2. Research Projects

Since her arrival at the MCMP in October 2012, Kristina Liefke has completed her dissertation *A Single-Type Semantics for Natural Language*. The dissertation has been submitted to the office of the Graduate School of Humanities at Tilburg University, and is scheduled for defense on April 25, 2014. Recently, Kristina Liefke has continued her work (joint with Stephan Hartmann) on a new model of inter-theoretic relations in linguistics (esp. in formal semantics), which distinguishes itself from the familiar Nagelian model.

3. Academic Output

Publications:

(201x): A Single-Type Semantics for the PTQ*-Fragment, *Proceedings of Sinn und Bedeutung* 18.

(2013): A Single-Type Ontology for Natural Language, *Was dürfen wir glauben? Was sollen wir tun? Sektionsbeiträge des Achten Internationalen Kongresses der Gesellschaft für Analytische Philosophie e.V.*, Miguel Hoeltje, Thomas Spitzley, and Wolfgang Spohn (eds.), 70-84.

Presentations:

A Single-Type Semantics for the PTQ-Fragment
NYU Semantics Group, New York University, Dec. 2013.
Sinn und Bedeutung 18, University of the Basque Country, Sept. 2013.
European Logic Colloquium, University of Évora, July 2013.

Type-Logical Semantics: Insights from Language Development Investigating Semantics, Ruhr-Universität Bochum, Oct. 2013.
A Single-Type Semantics for Natural Language
Research Colloquium: Philosophy Meets Cognitive Science, Ruhr-Univ. Bochum, May 2013.
Semantics Research Group, National Institute of Informatics (NII) and Keio University, Tokyo, Feb. 2013.

k. Dr. Sebastian Lutz

1. Type of Affiliation with the MCMP

Sebastian Lutz is Postdoctoral Fellow at the MCMP.

2. Research Projects

Sebastian Lutz has been working in General Philosophy of Science, Philosophical Methodologies, and the History of Logical Empiricism.

3. Academic Output

Publications:

(201x): Generalizing Empirical Adequacy I: Multiplicity and Approximation, *Synthese*.

(201x): Empirical Adequacy in the Received View, *Philosophy of Science*.

(201x): What's Right With a Syntactic Approach to Theories and Models?, *Erkenntnis*.

(2013): Empiricism and Intelligent Design I: Three Empiricist Challenges, *Erkenntnis* 78: 665–679.

(2013): Empiricism and Intelligent Design II: Analyzing Intelligent Design, *Erkenntnis*, 78: 681–698.

Presentations:

Technical Aspects of Reduction and Multiple Realizability
Reduction and Emergence in the Sciences. Munich, Germany, November 2013.

Abstraction, Idealization, and the Application of Mathematics
Congress on Logic and Philosophy of Science. Ghent, Belgium, September 2013.

Abstraction, Idealization, and the Application of Mathematics
Mathematising Science: Limits & Perspectives. Norwich, UK, May 2013.

Choosing the Analytic Component of Theories
The Fourth Conference of the European Philosophy of Science Association. Helsinki, Finland, August 2013.

Quasi-Truth as Truth of a Ramsey Sentence
Philosophy of Science in a Forest, Leusden, The Netherlands, May 2013.

The Criteria for the Empirical Significance of Terms
Formal Epistemology and the Legacy of Logical Empiricism, Austin, USA, April 2013.

I. Dr. Aidan Lyon

1. Type of Affiliation with the MCMP

Aidan Lyon is a Postdoctoral Fellow at the MCMP since September 2013.

2. Research Projects

Aidan Lyon concentrates on Collective Wisdom and Imprecise Probabilities in Psychology.

3. Academic Output

Publications:

(201x): Why are Normal Distributions Normal?, *The British Journal for the Philosophy of Science.*

(201x): Kolmogorov's Axioms and its Discontents, *The Oxford Handbook of Probability and Philosophy*, A. Hajek and C. Hitchcock (eds.), Oxford University Press.
(201x): Open-Intelligence Gathering and Analysis for Biosecurity, *Risk-Based Decisions for Biological Threats*, T. Walshe (ed.), Cambridge University Press; together with G. Grossel and M. Nunn.

(201x): Collective Wisdom: A Study of Some Simple and Complex Methods of Confidence Interval Aggregation, *Journal of Business Research*; together with B. Wintle and M. Burgman.

Presentations:

Collective Wisdom
Philosophy of Science Colloquium, Munich Center for Mathematical Philosophy 2013.

Interpretations of Probability
National Institute of Standards & Technology Colloquium, Gaithersburg, Maryland, USA 2013.

The Epistemic Value of Diversity
University of Maryland Public Lecture, College Park, Maryland, USA 2013.

Measuring Overconfidence with Imprecise Probabilities
Probabilistic Modeling in Science and Philosophy, Bern, Switzerland 2013.

Tracking and Forecasting Aquatic Disease Outbreaks with AquaticHealth.net
Medicine 2.0, London 2013.

Further Activities:

Aidan Lyon was awarded a Humboldt Fellowship for 2014/15 & 2015/16 & 2016/17.
He organized two Reading Groups on *Imprecise Probabilities* and in *Evolution of Language, Meaning and Vagueness*.
He was also a guest lecturer in Cédric Paternotte's philosophy of science class about Social Epistemology.

m. Dr. Conor Mayo-Wilson

1. Type of Affiliation with MCMP

Conor Mayo-Wilson is Assistant Professor at the MCMP.

2. Research Projects

Conor Mayo-Wilson has been working in philosophy of science, social epistemology, philosophy of statistics, and formal epistemology.

3. Academic Output

(201x): Scientific Collaboration and Collective Knowledge, Thomas Boyer, Conor Mayo-Wilson, and Michael Weisberg (Eds.), Under contract with Oxford University Press.

(2013): The Limits of Piecemeal Causal Inference, *The British Journal for Philosophy of Science*.

(201x): Review of Samir Okasha and Ken Binmore (Eds.): Evolution and Rationality: Decisions, Co-operation and Strategic Behaviour, *Philosophy of Science*.

(201x): Review of Brian Skyrms: From Zeno to Arbitrage, *Metascience*.

Presentations:

Games Against Nature, Voting on Methodology, and the Social Structure of Science.
European Philosophy of Science Association. Helsinki, Finland. August, 2013.
British Society for Philosophy of Science. University of Exeter. July, 2013.

A New Solution to the Problem of Logical Omniscience
Joint Session of the Aristotelian and Mind Associations. University of Exeter. July, 2013.

Micro and Macro Causation
Philosophy of Clark Glymour. Universität Düsseldorf. June 15th, 2013.

n. Brian Padden

1. Type of Affiliation with the MCMP

Brian Padden has been an MCMP Doctoral Fellow since October 2013.

2. Research Projects

Brian Padden is working on the conceptual foundations of quantum mechanics and quantum field theory, on which he intends to write his PhD thesis. He is beginning by exploring the path integral formulation of quantum mechanics.

3. Academic Output

Publications:

The Mathematical Heart of the Unruh Effect. Masters thesis, handed in 28.10.2013 for the Elite Masters Programme in Theoretical and Mathematical Physics, Ludwig-Maximilians-Universität München.

Presentations:

The Mathematical Heart of the Unruh Effect.
Masters thesis defense, 31.10.2013 for the Elite Masters Programme in Theoretical and Mathematical Physics, Ludwig-Maximilians-Universität München.

Why do we not see superpositions?
Work in progress talk, at MCMP, December 2013.
Further Activities:

Teaching Assistant: *Central Topics in the Philosophy of Science* .

Assistant Editor for the Quantum Mechanics subject in philpapers.org.

o. Cédric Paternotte

1. Type of Affiliation with the MCMP

Cedric Paternotte has been a MCMP Postdoctoral Fellow since October 2012.

2. Research projects

Cedric Paternotte's research deals with definitions and explanations of cooperation and related social phenomena., and more precisely with the links between their analyses in different fields, for instance in philosophy and in the social sciences. He is particularly interested in the rational (e.g. team reasoning) and evolutionary (e.g. group selection) explanations of cooperative behavior.

At the MCMP, Cedric focuses on the compatibility and structural similarities of rational/intentional and evolutionary explanations of cooperation, and on the possibility of a unified multilevel theory of rational behavior; as well as on the respective role of uniformity and diversity in human collectives, scientific and biological groups.

3. Academic Output

Publications:

(201x): Adaptation, fitness and the selection-optimality links, *Biology and Philosophy*, together with S. Okasha; commentary of A. Grafen: The formal darwinism project in outline.

(201x): The formal darwinism project: editors introduction, *Biology and Philosophy*; together with S. Okasha.

(201x): Parallels between joint intentionality and biological individuality, in T. Pradeu and A. Guay (Eds.), *Individuals Across the Sciences*, Oxford University Press.

(201x): Review of K. Sterelny, R. Joyce, B. Calcott and B. Fraser (Eds.): Cooperation and its Evolution, *Acta Biotheoretica*.

(201x): Constraints on Joint Action, in: M. Gallotti and J. Michael (Eds.): *Perspectives in Social Ontology and Social Cognition*, Springer.

(201x): The epistemic core of joint action, *Philosophical Psychology.*

(201x): Robustness and evolutionary explanations, submitted, under review; together with J. Grose.

(201x): Scientific virtues as catalysts, submitted, under review; together with M. Ivanova.

(201x): Cooperative outcomes, submitted, under review.

(201x): Coopération et altruism, in: *Précis de Philosophie de la biologie*, T. Hoquet and F. Merlin (Eds.).

Presentations:

Scientific virtues as catalysts
Epistemic and scientific groups : interdisciplinary perspectives Workshop, University of Nancy, November 2013.

Information and the evolution of social preferences.
Philosophy of Science Colloquium, Ludwig-Maximilian University, Munich, October 2013.

Virtue Diversity in Science
Fourth EPSA Conference, University of Helsinki, August 2013.

Constraints on Joint Action
Fifth Joint Action Meeting, University of Berlin, July 2013.

Multi-level adaptations
First Buenos Aires-Munich Philosophy Workshop, Ludwig-Maximilians University, Munich, July 2013.

Information and the evolution of social preferences
Information Conference, University of Bristol, May 2013.

Social Norms and Game Theory
Philosophy of Economics Seminar, CEPERC, Aix-Marseille University, April 2013.

Experimental game theory - Scope, constraints and limits
Philosophy of Science Seminar, University of Franche-Comté, Besançon, February 2013.

p. Dr. Soroush Rafiee Rad

1. Type of Affiliation with the MCMP

Soroush Rafiee Rad has been a Postdoctoral Fellow at the MCMP since November 2013.

2. Research projects

Soroush Rafiee Rad has been working on Bayesian Epistemology and its connect to collective decision making and the dynamics of belief in multi-agent settings.

3. Academic Output

Publications:

(201x): Learning Conditionals, submitted; together with Stephan Hartmann.

(201x): The Most Normal Models For Probabilistic Constraints on First Order Languages, submitted.

(201x): Equivocation Principle, Maximum Entropy and First Order Languages, submitted.

q. Dr. Alexander Reutlinger

1. Type of Affiliation with the MCMP

Alexander Reutlinger is a member of the MCMP since fall 2013.

2. Research Projects

Alexander Reutlinger primarily works on Philosophy of Science (explanation, understanding, causation).

3. Academic Output

Publications:

(201x): Special issue of *Erkenntnis* on ceteris paribus laws (to appear); together with Matthias Unterhuber.

(201x): Natural Law in the philosophy of biology – what is universality?, *European Review*.

(201x): Why Is There Universal Macro-Behavior? Renormalization Group Explanation As Non- causal Explanation, *Philosophy of Science*.

(201x): Do Statistical Laws Solve the Problem of Provisos?, *Erkenntnis*.

(201x): Ceteris Paribus Found? A Reply to Wang Wei, in: F. Liu and J. van Benthem (Eds.), *Logic Across the University*, Springer.

(201x): Review of John T. Roberts: The Law-Governed Universe, *Logical Analysis and History of Philosophy*.

(2013): A Theory of Causation in the Biological and Social Sciences, Palgrave Macmillan.

(2013): Can Interventionists be Neo-Russellians? Interventionism, the Open Systems Argument and the Arrow of Entropy, *International Studies in the Philosophy of Science* 27, 275 – 295.

(2013): A Relic of a Bygone Age? Causation, Time Symmetry and the Directionality Argument, *Erkenntnis* 78, 215-235; together with Matt Farr.

(2013): Are the Generalizations of Biology Historical?, in: Andreas Hüttemann, Marie I. Kaiser, and Oliver Scholz (Eds.): *Explanation in the Special Sciences. The Case of Biology and History*, Springer, 131-154.

(2013): Against the Statistical Account of Special Science Laws, in: Vassilios Karakostas and Dennis Dieks (Eds.): *Recent Progress in Philosophy of Science: Perspectives and Foundational Problems. The Third European Philosophy of Science Association Proceedings*, Springer ; together with Andreas Hüttemann.

(2013): Metaphysics as a Constraint on Science. Review of John Heil: The Universe As We Find It, *Metascience* 22, 297-301.

Presentations:

Non-causal Explanation and Understanding
Work-in-progress Talk, Munich Center for Mathematical Philosophy.

Non-causal Difference-Making
Workshop Explaining without Causes, University of Cologne, December 2013.

Two Objections to the Open Systems Argument
EPSA (Helsinki), September 2013.

Three Objections to the open systems argument and eliminativism about interventions
Annual Meeting of the British Society for Philosophy of Science (BSPS), University of Exeter, Exeter, July 2013.

Explaining Universality?
Emergence, Stability, and Parthood in Biological and Physical Systems, Cologne, June 2013.

Closed Systems and Interventionist Counterfactuals
Philosophy of Science Colloquium, University of North Carolina (Chapel Hill), April 2013.

Three Objections to the Open Systems Argument
Lunchtime Talk, Center for Philosophy of Science, University of Pittsburgh, February 2013.

Further Activities:

Organizer of the workshop "Explaining without Causes. Non-causal Explanations in the Sciences" (December 2013, University of Cologne),

Member of the Program Committee of the conference "Reduction and Emergence in the Sciences" (November 14-16, 2013), Munich Center for Mathematical Philosophy (MCMP).

Member of the Program Committee of the Fourth Conference (EPSA13, http://www.epsa.ac.at/) of the European Philosophy of Science Association (EPSA) (University of Helsinki; Helsinki, Finland; August 28-31, 2013).

Organizer of the Workshop "Emergence, Stability, and Parthood in Biological and Physical Systems", (June 28, 2013, Cologne).

r. Dr. Karim Thébault

1. Type of Affiliation with the MCMP

Karim Thébault is an Assistant Professor at the Chair of Philosophy of Science.

2. Research Projects

Karim Thébault has been working in Philosophy of Physics, General Philosophy of Science and Theoretical Physics.

3. Academic Output

Publications:

(201x): Quantization as a guide to ontic structure, *The British Journal for the Philosophy of Science*.

(201x): Unsharp Humean Chances in Statistical Physics: A Reply to Beisbart, *New Directions in the Philosophy of Science*, Springer; together with Luke Glynn, Radin Dardashti and Mathias Frisch.

(2013): Symmetry and Evolution in Quantum Gravity, preprint http://arxiv.org/abs/1303.7139; together with S. Gryp.

(2013): Time Remains, preprint http://philsci-archive.pitt.edu/10132/; together with S. Gryp.

Presentations:

Time Remains
Deutsche Physikalische Gesellschaft Tagungen, Jena, February 2013.

Irvine-Pittsburgh-Princeton Conference on the Mathematical and Conceptual Foundations of Physics, Pittsburgh, April 2013.
Bucharest Colloquium in Analytic Philosophy, Bucharest, May 2013.
Quantum Gravity in Perspective, Munich, May 2013.

Quantization as a guide to ontic structure
Gesellschaft für Wissenschaftsphilosophie (GWP), Hannover, March 2013.

Further Activities:

Workshop Organiser, "Quantum Gravity in Perspective" Munich, May 2013.

Workshop Organiser, "Reduction and Emergence in Physics", Munich, June 2013.

Conference Organising Committee, "Foundations of Physics" Munich, July 2013 .

Conference Organising Committee, "Reduction and Emergence in Sciences", November 2013.

Convener, "Colloquium in Logic, Philosophy of Science and Philosophy", Munich, Ongoing.

s. Dr. Gregory Wheeler

1. Type of Affiliation with the MCMP

Gregory Wheeler is a Postdoctoral Fellow at the MCMP.

2. Research Projects

Gregory Wheeler works on foundations of probability, formal epistemology, bounded rationality and philosophy of science. His current project is "The Notion of Mathematical Proof", funded by the Portuguese Science Foundation, 2013 - 2015. (Resigned as PI in August 2013).

3. Academic Output

Publications:

(201x): Demystifying Dilation?, *Erkenntnis*; together with Arthur Paul Pederson.

(201x): Character Matching and the Locke Pocket of Belief, in: Franck Lihoreau and Manuel Rebuschi (Eds.): *Epistemology, Context, and Formalism,* Springer.

(201x): Is there a Logic of Information?, *Journal of Experimental and Theoretical Artificial Intelligence*.

(2013): Coherence and Confirmation Through Causation, *Mind*, 122(435): 135-70; together with Richard Scheines.

(2013): Models, Models, and Models, *Metaphilosophy,* 44(3): 293-300.

Presentations:

Dilation and Decision Making
Workshop on Logic, Probability, and Reflection, Machine Intelligence Research Institute (MIRI), Berkeley, December 2013.

Demystifying Dilation
MIRI-Oxford Workshop on Probability and Logic, The Future of Humanity Institute, Oxford University, November 2013.
Colloquium, Department of Philosophy, University of Bristol, November 2013.

Fast, Frugal, and Focused: Seeing the Rationality of Heuristics Through Focused Correlation
Workshop on Games and Decisions, De Giorgia Center for Mathematical Research, Scuola Normale Superiore, Pisa, July 2013.

Archetects of the Mind: Blueprint for the Brain
The World Science Festival, New York City, May 2013; together with Kristen Harris, Douglas Fields and Murray Shannon.

Further Activities:

Gregory Wheeler is Editor in Chief of *Minds and Machines* and Member of the *Synthese* Editorial Board.

(V) We also hosted several visitors:

This is the list of visitors at the MCMP during the period from January to December 2013:

Rogier de Langhe (Tilburg)	15.10.2012 – 14.02.2013
Luca Moretti (Aberdeen)	01.10.2012 – 31.12.2013
Andrey Bovykin (Bristol)	01.01.2013 – 28.02.2013
Johanna Thoma (Toronto)	15.04.2013 – 20.06.2013
Alexander Afriat (Brest)	21.04.2013 – 13.07.2013
Adam Caulton (Cambridge)	22.04.2013 – 16.05.2013
Eric Winsberg (Tampa, Fl.)	06.05.2013 – 31.06.2013
Leszek Wronski (Jagiellonian)	14.05.2013 – 26.05.2013
Philipp Koralus (Oxford)	01.06.2013 – 31.07.2013
Michael Stoeltzner (South Carolina)	01.06.2013 – 03.08.2013
Michael Silberstein (Maryland)	01.07.2013 – 01.08.2013
Robert Bishop (Wheaton)	01.07.2013 – 01.08.2013
Cailin O'Connor (Harvard)	12.07.2013 – 31.07.2013
Jim Weatherall (California)	12.07.2013 – 31.07.2013
Richard Dawid (Wien)	01.12.2013 - 31.03.2014

a) Rogier de Langhe: Rogier de Langhe visited the MCMP for using the expertise available at the Centre to learn about building agent-based models and using them for philosophical purposes, funded by a Visiting Fellowship. With this knowledge he is working on building an agent-based model of Thomas Kuhn's "Strcture of Scientific Revolutions". As the results of his research during that period of

time the following achievements can be named: Editor of special issue "The Structure of Scientific Revolutions: 50 Years On" of the journal *Topoi*. Co-editor of "The Progress of Science" of the journal *Studies in History and Philosophy of Science* (with Stephan Hartmann and Jan Sprenger).

b) Luca Moretti: Luca Moretti visited the MCMP on his own funds to organize and direct the international Workshop "New Perspectives on External World Scepticism" in Cooperation with the MCMP, scheduled 9-10 July 2013 in Munich. During his stay he applied for an Alexander von Humboldt Experienced Researcher Fellowship which was unfortunately rejected. As the results of his research during that period of time the following achievements can be named: Moretti, L. (Forthcoming) In defence of dogmatism, *Philosophical Studies*. Moretti, L. and Piazza, T. (2013) Transmission of Justification and Warrant. *Stanford Encyclopedia of Philosophy*. Moretti, L. (Forthcoming) C. Tucker (ed.), *Seemings and Justification: New Essays on Dogmatism and Phenomenal Conservatism.* NY: OUP. (2013). *Philosophical Quarterly*. Moretti, L. (2013) New Perspectives on External World Scepticism 9-10 July. *The Reasoner* 7(8): pp. 99-100. Conference Report.

c) Johanna Thoma: Johanna Thoma visited the MCMP on her own PhD scholarship from the University of Toronto. Johanna Thoma worked on two main projects during her time at the MCMP. The first was the investigation of the role of robustness in economoic modeling based on her Master Thesis at the Erasmus Institute for Philosophy and Economics in Rotterdam. The paper "Robustness and the Irrelevance of Problematic Assumptions" is currently under review. The second was to programme an agent-based model to investigate the epistemic division of labour in science between explorer-type and follower-type scientist. This work based on her final project for a programme course for NetLogo at the MCMP. The paper "The Epistemic Division of Labour Revisited" is in preparation. As further result of her research the following achievements can be named: Two talks: One at the Symposium on Social Epistemology of the Canadian Society for Epistemology, November 29th-30th 2013 in Sherbrooke, and one at the MCMP, February 6th 2014 (both: "The Epistemic Division of Labour Revisited"). During her time at the MCMP, Johanna Thoma also took two advanced seminars for credit, in order to complete the coursework of her PhD faster. She further applied for funding from the Germany-Europe Fund at the University of Toronto in order to visit the MCMP again in the summer of 2014, and the application was successful.

d) Alexander Afriat: Alexander Afriat visited the MCMP on MCMP funds to attend the MCMP Quantum Gravity Workshop and to present his current work on gauge theory during two MCMP talks ("Weyl's gauge argument" and "Topology, holes and sources") to get feedback from MCMP members. The following achievements can be named during that period of time: "Logic of gauge": under review by the *Studies in History and Philosophy of Modern Physics*. "Is the world made of loops?": to be resubmitted soon.

e) Adam Caulton: Adam Caulton visited the MCMP on a stipend from the British Academy. During his stay at the MCMP he was mostly engaged in two research projects. The first project concerned the philosophy of quantum emchanics, in particular the nature of "indistinguishable" particles. As a result of that projects partly undertaken at the mCMP two articles were produced; one is

currently under review, the other still in preparation. Adam Caulton also gave a talk at the MCMP about "Individuating so-called "indistinguishable" quantum systems. The second project concerned logic and the philosophy of science, in particular and approach to theoretical terms. The article issuing from this research is currently in preparation. He also gave a second talk at the MCMP about "Theoretical Analyticity, Revisited". While at the MCMP Adam Caulton attended a weekly reading group on category theory and various department activities like Dr. Karim Thébault's class on the philosophy of science.

f) Eric Winsberg: Eric Winsberg visited the MCMP on combined funds of the CAS and the MCMP. During that time he worked on two different projects, each of which has resulted in several presentations at international conferences and colloquia and each of which is in its way to resulting publications. The first project was a collaboration with Karim Thébault and Radin Dardashti from MCMP, involving an investigation of the scientific practice called "analog simulation" by studying a particularly interesting example of this practice related to the phenomenon known as Hawkings Radiation. If the analysis is correct the quantum phenomenology of black holes is already within reach of contemporary experimental research in analogue gravity. So far this collaboration has resulted in a presentation at a MCMP hosted conference and was accepted for presentation at the Philosophy of Science Association, the British Society for the Philosophy of Science and at the international conference on philosophy of science at the University of Geneva. It has also been given a revise and resubmit by *the British Journal for the Philosophy of Science*. The second project was giving an account of scientific anti-realism based on deflationary meta-semantics that is consistend with dissolving the measurement problem in Quantum mechanics without drawing a metaphysical line between the observable and the unobservable domains. This work is resulting in a future monograph and has resulted already in several presentations at LMU, The University of California, San Diego, The University of California, Davis, The University of Maryland, and San Francisco State University. Furthermore a collaboration with Mathias Frisch and Seamus Bradley from MCMP was coming off around a seminar taught at the MCMP, related to the Philosophy of Climate Science. Between the three of them discussions about issues related to the role of computer simulation in climate science as well as the role of contextual values in the appraisal of hypotheses about the climate led to advanced positions as Eric Winsberg presented some of his work at the MCMP.

g) Leszek Wronski: Leszek Wronski visited the MCMP on research grant funding provided by the Polish Ministry of Science and Higher Education (668/N-RNP-ESF/2010/0, head: Tomasz Placek). His goal was to become acquainted with the latest developments in philosophy of science related to probability. Therefore he talked to the MCMP members who authored papers in related areas and read publications on e.g. unsharp chances, upper and lower probabilities and their connection to EPR correlations, Humean supervenience and reductionism. His research in that period of time contributed to the paper "On a Conjecture by San Pedro", accepted for publication in *the European Journal for Philosophy of Science* (DOI: 10.1007/s13194-0140089-2).

h) Philipp Koralus: Philipp Koralus visited the MCMP on MCMP funds while working a formal theory of the psychology of deductive reasoning that aims to explain both the ways in which our reasoning succumbs to fallacies that have been extensively empirically

documented, as well as the possibility of correct reasoning that underlies philosophy and modern science. This work cuminated in a publication: "The erotetic theory of reasoning: Bridges between formal semantics and the psychology of deductive inference.", published in *the Philosophical Perspectives*, 2013, 27, pp. 312-365. Philipp Koralus has continued this line of work as an Associate Professor at the University of Oxford and given talks on it at the London School of Economics. As Principal Investigator of the Laboratory for the Philosophy and Psychology of Rationality and Decision, he subsequently invited MCMP members to Oxford, based on conversations in Munich.

i) Michael Stoeltzner: Michael Stoeltzner visited the MCMP on MCMP funds to collaborate with Munich scholars interested in the philosophy of physics and formal epistemology to discuss his current research projects on the foundations of quantum field theory, Feynman diagrams as models, the relevance of the axiomatic method for mathematical physics and formal epistemology, and Rudolf Carnap's early work on axiom systems. He presented two of these topics within the MCMP colloquium: "What Do Feynman Diagrams Represent?"(17 July 2013), "Completeness, Categoricity and Dismissal" (18 July 2013). He has also used his stay in Munich to plan his sabbatical there in the academic year 2014/15. This stay will be financed by the Center for Advanced Studies of the LMU (3 months awarded through an application by Stephan Hartmann), and the Research Institute of the Deutsches Museum (6 months awarded within their Scholar-in-residence program.) As the results of his research during that period of time the following achievements can be named: "On Virtues and Vices of Axiomatic Quantum Field Theory" (submitted for PSA 2014), "Completeness, Categoricity, and the Axiomatic Method: Formal Epistemology between the Foundations and Applications of Mathematics", soon to be submitted to a special section in the *Studies in History and Philosophy of Science*, and "What (if anything) Do Feynman Diagrams Represent?", soon to be submitted to a special section in the *Studies in History and Philosophy of Modern Physics*. "Could Mathematical Physics Serve as a Model for Formal Epistemology – or Mathematical Philosophy?", Formal Epistemology and the Legacy of Logical Empiricism, University of Texas at Austin, 26-27 April 2013; "The Principle of Least Action as a universal guide to theory building around 1900", 24th International Congress for History of Science, Technology and Medicine, Manchester (England), 21-28 July 2013; "On some virtues and vices of axiomatic approaches to quantum field theory", UK-Munich Conference on the Foundations of Physics, Munich (Germany), 29-31 July 2013; "What Do Feynman Diagrams Represent?" Fourth Conference of the European Philosophy of Science Association, Helsinki (Finland), 28-31 August 2013.

j) Michael Siberstein: Michael Silberstein visited the MCMP together with Robert Bishop. For more detailed information please see l) Robert Bishop.

k) Robert Bishop: Robert Bishop visited the MCMP on MCMP funds in order to use the MCMPs joint expertise for his work on a jointly-authored research project with Michael Silberstein. The project was the writing of a monograph on emergence in the sciences and was presented in a research talk at the MCMP. As a result of their joint research during that period of time four chapters for the book were drafted. Some of the accomplished work was also used in a symposium Robert Bishop participated in on psychology and

transcendence at the American Psychological Association Annual Meeting in 2013.

l) Cailin O'Connor: Cailin O'Connor visited the MCMP on MCMP funds in order to work with the expertise of the Centre on a paper on learning generalization, including some simulation work. This paper is meant to show that despite the fact that generalized learning does not lead to optimal strategies in decision problems, and despite the fact that it has been previously argued that this would prevent it from evolving, it can evolve. This paper is under review at *Synthese* (R&R) and was presented in a recent talk at the winter q-bio 2014 meeting. This paper and the presentations also constitute the results of her research during that period of time.

m) Jim Weatherall: Jim Weatherall visited the MCMP on funding from his home university and partly on MCMP funds. During his stay he worked on a book review of *The Oxford Handbook of Philosophy of Physics* for *Notre Dame Philosophical Reviews*, using the expertise of MCMP researchers because several of the articles in the Handbook covered areas of the MCMP researchers. As a result the book review was published in 2013. Furthermore he attended the 17th European and UK Conference on the Foundations of Physics, held in Munich and organized by the MCMP at the end of July.

n) Richard Dawid: Richard Dawid is visiting the MCMP since December 2013 on a CAS Fellowship embedded in our CAS research focus programme. At the moment he is working on two paper drafts. One, "Bayesian Perspectives on the Discovery of the Higgs Particle" (to besubmitted in April 2014), discusses the specific role that can be played by Bayesian reasoning in the context of Higgs physics. Bayesian methods seem of particular interest in this case because scientists believed strongly in the Higgs particle even before its discovery. That is, considering the prior probabilities is particularly important.

(VI) Center for Advanced Studies (CAS)

Since April 1st 2013 the MCMP runs a CAS research focus programme about Reduction and Emergence in the Sciences. In the first year of this cooperation the MCMP has hosted several events:

21.06.2013 - 22.06.2013 Reduction and Emergence in Physics (International Workshop)

14.11.2013 – 16.11.2013 Reduction and Emergence in the Sciences (International Conference)

13.11.2013 Reduction and Emergence in Physics (Evening Lecture Prof. Dr. Stephan Hartmann, Dr. Sebastian Lutz and Dr. Karim Thébault)

10.12.2013 String Theory and the Scientific Method (Evening Lecture Dr. Richard Dawid)

In addition the MCMP invited several visitors in the year 2013 who are also working on the field of Reduction and Emergence:

Philip Koralus (01.06.-31.07.2013)

Eric Winsberg (07.05.-30.06.2013)

Richard Dawid (01.09.-31.12.2013)

After a successful report at the end of 2013 the CAS research focus programme continues in its second year in 2014 until 31st March 2015.

(VII) Awards

Several MCMP members or MCMP related researchers have won awards or research programmes in 2013. This is the list:

Ulrike Hahn (Birkbeck College) received an Anneliese Maier-Research Award from the Alexander von Humboldt Foundation. This award enables and supports high-level and trendsetting research cooperations for a period of up to five years.

Alexander Reutlinger (MCMP, Assistant Professor) received the Offermann-Hergarten Award for his PhD thesis "Causation in the Biological and Social Sciences" (Palgrave Macmillan) and academic achievement from the University of Cologne.

Aidan Lyon (Maryland, MCMP) was awarded a Humboldt Research Fellowship for Experienced Researchers.

Michael Esfeld (Lausanne) was awarded a Humboldt Research Award. He will use this opportunity to further cooperation with the MCMP in research and conference issues.