Academic Report for 2016 (01.01.2016- 31.12.2016)

Prof. Dr. Stephan Hartmann

April 30, 2017

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Also in 2016 the MCMP provided a vibrant research community and the Chair of Philosophy of Science contributed to it by inviting several promising Visiting Fellows to work together with the group and to present their work, as well as by further attracting postdocs and PhD students. We hosted a number of academic events, including a major conference on The Semantics of Theories.

Our research remains organized in three research groups, focusing on problems from the **foundations of physics**, working on the application of **modeling and simulation methods in philosophy**, and solving problems from **general philosophy of science and formal epistemology**. All groups continue to hold links to other departments, e.g. LMU Department of Statistics, stressing the interdisciplinary character of our research. Again, all this was done to underline our goal to become the leading research center in the world that applies scientific (i.e. formal and empirical) methods to questions of philosophical interest.

In this report, we present the work done in 2015 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

With the help of the whole media team, especially Cornelia Kroiss, Michael Bräustetter and Roland Poellinger, we continually kept the website up-to-date. By the high-click count we can tell that our website really is the go-to resource for everything MCMP.

Among the most popular pages is our front page, of course, which shows upcoming events, recent news and since recently also newly published videos.

2. MCMP on iTunes U

The MCMP has an assortment of twelve video channels on iTunes U, one of them our archive with 250 recordings since 2011. By the end of 2016 we are now providing access to more than 650 video recordings on virtually any kind of philosophical problem.

3. MCMP @ Facebook

The MCMP regularly posts news and events on Facebook. Currently we have more than 2.700 people following our page, where we are sharing announcements, events, new recordings in our iTunes U channels, and new videos about the MCMP including video abstracts on our First Sight video abstract server.

4. M-Phi Blog

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

5. 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.*

6. Others about the MCMP

Members of the MCMP are frequently interviewed for LMU internal journals such as the MUM or the LMU website. In 2016 there was additional coverage done by the *Quanta Magazine* on a question raised by Stephan Hartmann as well as an article feature written by Alexander Reutlinger in the *NZZ.*

7. Publication Management

In collaboration with LMU's library and the central internet department, we introduced our very own publication management system and a novel publication search function since 2014. Up to now we managed to transfer more than 350 MCMP publications into the new system with great care to consolidate all research output in a unified repository. Our papers are now accessible through: LMU's Open Access server; Our personal online profile pages; Our own publication search function on our homepage; and through Google Scholar as well as on BASE (Bielefeld Academic Search Engine).

8. Video Search and Video Collections

We still have our very own online video search function. This not only gives our website's visitors quick access to our archive of recordings, it also allows you to search for related content and group recorded talks thematically. If a First Sight video abstract exists for a long recording, our search function will give you access. In addition, our curated video collections are still available and much sought after. The idea behind our "Curated Collections" is an insight into MCMP team members' areas of expertise, as they highlight a group of research talks from our vast video archives and add personal comments to make them a starting point for anyone interested in what's hot in formal philosophy.

(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 2016:

13.01.2016 Nicole Saam (Erlangen Nürnberg)
20.01.2016 Matt Farr (University of Queensland)
03.02.2016 Bennett Holman (Yonsei)
03.02.2016 Margaret Morrison (University of Toronto)
16.03.2016 Rainer Hegselmann (University of Bayreuth/CAS LMU)
06.04.2016 Eleonora Cresto (Buenos Aires)
13.04.2016 Dieter Lüst (LMU)
13.04.2016 Martin Kocher (LMU)
20.04.2016 Jakub Szymanik (Amsterdam)
20.04.2016 Jeremy Howick (Oxford)
27.04.2016 Kevin Mulligan (Geneva)
27.04.2016 Iulian Toader (Bukarest)
01.06.2016 Peter Vickers (Durham)
01.06.2016 Sebastian De Haro (Cambridge)
15.06.2016 Collin Rice (Lycoming)
15.06.2016 Lydia Patton (Virginia Tech)
22.06.2016 Samuel Fletcher (Minnesota/MCMP)
22.06.2016 Marij van Strien (Wuppertal)
27.06.2016 Peter Collins (Birkbeck)
29.06.2016 Paul Hoyningen-Huene (Hannover/Zürich)
29.06.2016 Aleks Knoks (Maryland)
19.10.2016 Eleonora Cresto (Buenos Aires)
24.10.2016 William Harper (University of Western Ontario/Rotman Institute)
26.10.2016 Mark Bowker (LMU)
26.10.2016 Marco Govanelli (Tübingen)
09.11.2016 Jean Baccelli (MCMP)
09.11.2016 Matt Farr (University of Queensland)
16.11.2016 Ivan Moscati (Insubria)
16.11.2016 Aidan Lyon (Maryland/MCMP)
23.11.2016 Daniel Andler (Paris-Sorbonne)
30.11.2016 Gergei Bana (INRIA Paris)
30.11.2016 Naftali Weinberger (Tilburg University)

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 2016:

14.01.2016	Neil Barton (Birkbeck)
21.02.2016	Dolf Rami (Georg-August-Universität Göttingen)
28.01.2016	Lorenzo Rossi (Salzburg)
04.02.2016	Aaron Cotnoir (St. Andrews)
18.02.2016	Terry Horgan (Arizona)
25.02.2016	Andrea Reichenberger (Ruhr-Universität Bochum)
14.04.2016	Maarten McKubre-Jordens (Christchurch)
14.04.2016	Riccardo Bruni (Florenz)
21.04.2016	Stephen Stich (Rutgers)
21.04.2016	Rohan French (Groningen)
28.04.2016	Andrea Iacona (Turin)
09.06.2016	Brian Rabern (Edinburgh)
27.06.2016	Stanislav Speranski (Ruhr-Universität Bochum)
20.10.2016	Imme van der Berg (CIMA)
03.11.2016	Lorenzo Rossi (MCMP)
10.11.2016	Ali Abasnezhad (MCMP)
17.11.2016	Antony Eagle (Adelaide/MCMP)
24.11.2016	Dirk Schlimm (MCMP)

3. Work in Progress

The MCMP is also scheduling an intern Work in Progress session, offering MCMP members and Visiting Fellows 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 2016:

28.01.2016	Adam Caulton (MCMP)
04.02.2016	Malte Döhne (MCMP)
14.04.2016	Andrew Buskell (Cambridge)
21.04.2016	Francesca Biagioli (Konstanz)
28.04.2016	Nina Gierasimczuk (Amsterdam)
30.06.2016	Marko Tesic (LMU)
20.10.2016	Reuben Stern (MCMP)
03.11.2016	Ben Eva (MCMP)
10.11.2016	Johanna Wolff (The University of Hong Kong/MCMP)
17.11.2016	Neil Dewar (MCMP)
24.11.2016	Josephine Salverda (UCL)

b. Workshops and Conferences

From the total of MCMP events in 2016 the Chair of Philosophy of Science hosted nine workshops and conferences throughout the year, all supported by Sabine Beutlhauser and her assistants Matthias Koch and Stefan Rohrhirsch:

1. MuST 9: Evidence, Inference, and Risk

March 31- April 2 2016, MCMP, LMU

Organizer: Barbara Osimani, Jürgen Landes, Roland Poellinger

This 9th conference of the Munich-Sydney-Tilburg (MuST) conference series aimed at gathering philosophers and scientists of the natural and social sciences in order to examine the theoretical and methodological issues involved in evidence evaluation, statistical inference and causal inference in relation to risk assessment and management in various disciplines, with a special attention to pharmacology. In particular, following questions were on focus: How should we collect, evaluate, and use evidence for the purpose of risk management and prevention? What methods should be adopted in causal inference for preventing harm? What kinds of scientific inferences are we allowed to draw from data-mining techniques? What are the relevant decision-theoretic dimensions involved in different kinds of risks, and what kinds of decision rules are more advisable in diverse contexts? What types of uncertainties can we identify when dealing with hazards? These questions raised methodological concerns related to the data and tools available for risk measurement and modeling, the right kinds of interventions we should adopt in order to prevent or minimize it, and the best ways to gather, evaluate and combine different sources of knowledge. Furthermore, they were intimately connected with epistemological issues in the philosophy of science, and the foundations of statistics and probability. Pharmacology is a particularly interesting field of investigation in these respects. Together with revolutionary successes, e.g. the discovery of penicillin, the history of pharmacology is also characterized by a series of tragic disasters (from the thalidomide to the rofecoxib case), which showcase the extreme variance of its scientific performance. Furthermore, pharmaceutical decisions are set in a complex environment where scientific uncertainty, conflicts of interests, and regulatory constraints strongly interact. The workshop intended to investigate these phenomena in light of the current methodological and philosophical debate. This series of annual conferences is a joint undertaking between the Sydney Centre for the Foundations of Science (SCFS), the Tilburg Center for Logic and Philosophy of Science (TiLPS) and, since 2012, the MCMP.

Invited Speakers: Lisa Bero (University of Sydney), Julian Reiss (Durham University, CHESS), Glenn Shafer (Rutgers Business School), Jon Williamson (University of Kent).

2. 2nd Munich Graduate Workshop in Mathematical Philosophy: Formal Epistemology

April 7-9 2016, MCMP, LMU

Organizer: Gregory Wheeler

The Munich Center for Mathematical Philosophy (MCMP) organized the second Munich Graduate Workshop in Mathematical Philosophy, in 2016. The theme of this year's workshop was formal epistemology and we invited submissions from masters and doctoral students

interested in presenting a paper on this topic. In addition to student presentations and keynote lectures, the workshop featured three 'workshops' focused three areas in formal epistemology at the forefront of contemporary research. The themes of the working groups were the foundations of imprecise probability theory, social epistemology and dynamic logic, and the role of probabilistic methods in contemporary cognitive psychology.

Invited Speakers: Christian List (London School of Economics), Jeanne Peijnenburg (University of Groningen), Hans Rott (University of Regensburg)

3. Probabilities in Science and Philosophy (The First Jerusalem-MCMP Workshop in the Philosophy of Science)

May 19-20, 2016, Edelstein Center, The Hebrew University of Jerusalem

Organizer: Orly Shenker, Stephan Hartmann

The notion of 'probability' refers to a host of formal systems and to a host of ways of interpreting them. It is used in a host of various fields including Bayesian epistemology, decision theory, statistical considerations in social and natural sciences, and as part of the theories of physics, and more. In this workshop we addressed this intriguing notion from a variety of viewpoints and in a variety of context, with the hope that this interdisciplinary exchanges will yield deeper understanding and novel insights as to the meaning and use of probability in each of the different domains.

Invited Speakers: Seamus Bradley (MCMP), Erik Curiel (MCMP), Malte Döhne (MCMP/LMU Munich), Stephan Hartmann (MCMP), Meir Hemmo (Haifa University), Danny November (Edelstein Center), Ittay Nissan-Rozen (Hebrew University of Jerusalem), Orly Shenker (Edelstein Center).

4. Infinite Idealizations in Science

June 8-9 2016, LMU, MCMP

Organizer: Patricia Palacios

Infinite idealizations are assumptions that play an important role in physics, biology, economics, and many others sciences. Putative examples include an infinite population size in population genetics, an infinite number of components in the theory of phase transitions and an infinite number of persons consuming an infinite number of (infinitely divisible) goods in large-scale economic models. Although these idealizations are generally uncontroversial in the scientific community, they have been at the center of recent philosophical debates about reduction, explanation and the status of models in science. Yet, philosophers of the particular sciences addressing these issues have largely kept within the confines of their own specialist literature. One of our goals for the conference was to bring philosophers of physics, biology, economics, etc. together in conversation about infinite idealizations, thereby mapping what similarities and differences such idealizations may have across these fields. Some of the questions this workshop aimed to explore included but were not limited to: Are infinite idealizations compatible with reduction? Can a model invoking an infinite idealization have explanatory power? What explains the success of theories that appeal to infinite idealizations? Are infinite idealizations compatible with scientific realism? Are infinite idealizations substantially different from other idealizations? Should infinite idealizations be understood as approximations?

Invited Speakers: Marshall Abrams (University of Alabama), Hartmut Kliemt (Frankfurt School of Finance & Management), Margaret Morrison (University of Toronto), Michael Weisberg (University of Pennsylvania).

5. First Principles in Science: Their Epistemic Satus and Justification

June 10-11 2016, LMU, MCMP

Organizer: Catherine Herfeld, Milena Ivanova

What is the epistemic status of first principles in science and how do scientists justify them accordingly? These were the central questions that were discussed at this workshop. So far, discussions about first principles and their justification in science have focused largely on the natural sciences. For example, philosophical debates around Poincaré's conventionalism or the relativized a priori are usually grounded in concrete case studies from physics. Yet, first principles occupy an equally important, yet controversial, role in other natural and as well in the social sciences, where their status and epistemic role raise similar concerns, economics and psychology being only two cases in point. For example, it has been widely discussed that economic theories rest upon first principles of human behavior that have long been fiercely defended by economists and justified in various different ways. Yet, at the same time, they have been attacked and in some cases even replaced by behavioral economists. The workshop aimed at renewing the existing discussions on the status and justification of first principles in sciences by expanding them to cases beyond physics into economics, psychology, biology and chemistry. This will help us to better understand the way in which first principles are used and justified in the natural and the social sciences alike, and thereby address more general questions concerning the way in which knowledge is produced in these disciplines.

Invited Speakers: Robin Hendry (Durham University), Kevin Hoover (Duke University), Liz Irvine (University of Cardiff), Milena Ivanova (MCMP), Samir Okasha (University of Bristol), Michael Stöltzner (University of South Carolina).

6. The Semantics of Theories

June 23-25 2016, LMU, MCMP

Organizer: Erik Curiel, Sebastian Lutz

Since 1970, no major international conference has been dedicated to the problem of the semantics of theories, even though the problem is of central and fundamental importance in all branches and topics of philosophy of science. The time, therefore, is ripe for such a major conference, bringing together leading proponents and critics of all major schools of thought on the problem. Such a gathering will spur new, innovative approaches to the problem, as well as connecting and invigorating work on existing approaches. It will also provide young researchers with a comprehensive introduction to the state of the art of this central field of research, and established researchers with a comprehensive overview. The conference aimed to explore the issues and problems attending the attempts to understand the semantics of scientific theories. Specific questions we wanted the conference to address include but are not limited to: What is it to formulate an account of the semantics of scientific theories? What are the relative virtues and demerits of formal, technical versus informal, heuristic approaches to the problem? What are the relative virtues and demerits of the most influential contemporary schools of thought

(syntactic or received view, semantic view, structuralism, inferentialism, inter alia)? How can one distinguish the pragmatics from the semantics, and what role does or ought each of them play? Should there be a single, unified account of the semantics of theories for all branches of science, or do theories in different sciences (physics, biology, the social sciences, et al.) require different semantics? What roles do representation and the general idea of a model play in semantics? What input, if any, should the psychological and neurocognitive sciences have in a proper understanding of semantics? What is the relation, if any, between the semantics of scientific theories and the semantics of mathematical theories? How does or should a proper understanding of the semantics bear on related philosophical problems concerning scientific theories, including: their structure; their relation to experiment and observation; the status of theoretical terms and the realism-versus-instrumentalism debate; the distinction between factual and conceptual truths; issues of confirmation, reduction and emergence, incommensurability, concept-formation; etc.?

Invited speaker: Holger Andreas (University of British Columbia), Adam Caulton (MCMP), Erik Curiel (MCMP), Hans Halvorson (Princeton University), Sebastian Lutz (MCMP), Reinhard Muskens (Tilburg University), Christopher Pincock (Ohio State University), Emma Ruttkamp-Bloem (University of Pretoria), Gerhard Schurz (Heinrich Heine Universität Düsseldorf).

7. The Physics of Society: Philosophy of Econophysics and Complex Social Systems

July 22-23 2016, LMU, MCMP

Organizer: Seamus Bradley

Econophysics is a new and exciting cross-disciplinary research field involving the applications of techniques from statistical physics and complex systems theory to economic systems. In particular, econophysics models have been successfully applied to recover certain 'stylised facts' about financial markets and about inequality in income distributions. There are a number of interesting and important methodological questions relating to the foundations of econophysics, and to the treatment of social systems as complex systems in general. For example: Are the idealisations and abstractions used in econophysics models justified in the same way as the analogous idealisations in statistical physics models? What do philosophical accounts of explanation say about the putative explanation of the stylised facts by econophysics models? How are econophysics models relevant to debates about emergence and universality? How should we interpret the presence of power laws in economic data? What is the role of information and entropy in the modelling of economic systems? This workshop aimed to bring together complex systems scientists, econophysicists, economists, and philosophers of science to explore some of the interesting methodological questions raised by econophysics and related fields.

Inivited Lorenzo Casini (Geneva/MCMP), Tobias Huber (ETH Zürich), Jenn Jhun (University of Pittsburgh), Meinard Kuhlmann (Universität Mainz), Christoph Merdes (MCMP), Margaret Morrison (Toronto/MCMP), Patricia Palacios (MCMP), Christophe Schinckus (University of Leicester), Karim Thébault (University of Bristol), Max Urchs (European Business School), Him Weatherall (UC Irvine), Karoline Wiesner (University of Bristol), Lena Zuchowski (University of Salzburg).

8. 3rd Summer School on Mathematical Philosophy for Female Students

July 24-30 2016, LMU, MCMP

Organizer: Milena Ivanova, Karolina Krzyzanowska, Samuel Fletcher

The Summer School on Mathematical Philosophy for Female Students is planned to take place at the MCMP every year in the summer. Each year, we will have a different line-up of speakers and a respective change in the specific topics. What will remain constant over the years is that all topics will have the general focus of the summer school, namely to study and apply formal and empirical methods to address problems in different areas of philosophy. As outlined in our statement of motivation, the main goal of the summer school is to support young and ambitious female students to get into contact with mathematical methods and acquire the respective skills that will prepare them for their graduate work and ultimately for an academic career in mathematical philosophy. Since women are significantly underrepresented in philosophy generally and in formal philosophy in particular, this summer school aimed at encouraging women to engage with mathematical methods and apply them to philosophical problems. This year the focus of the summer school was to provide a framework for developing expertise in formal approaches used in (1) philosophy of language, (2) philosophy of logic, and (3) philosophy of mathematics. The summer school offered the opportunity for study in an informal setting, for lively debate, and for the development of a network with students and professors interested in the application of formal methods in philosophy. Finally, being located at the MCMP, the summer school also provided a stimulating and interdisciplinary environment for meeting like-minded philosophers.

Invited Speakers: Stephan Hartmann (MCMP), Katherine Hawley (University of St. Andrews), Hannes Leitgeb (MCMP), Cailin O'Connor (UC Irvine), Rineke Verbrugge (University of Groningen), Jim Weatherall (UC Irvine).

9. Reasoning in Physics

December 12 13 2016, LMU, CAS/MCMP

Organizer: Stephan Hartmann, Benjamin Eva

Modern Physics provides an extremely rich testing ground for philosophical theories of scientific reasoning. In recent times, we have seen the emergence of many new forms of theory confirmation (analogue simulation, the no-alternatives argument, anthropic reasoning, …), necessitated by the empirical inaccessibility of some of the most prominent theories of modern physics and cosmology (string theory, cosmic inflation, …). This workshop brought together researchers working on the epistemological problems posed by contemporary physical theory, in order to better understand some of these new patterns of physical reasoning and their relationship to traditional theories of scientific reasoning and argumentation in general (e.g. Bayesianism). Another key theme of the workshop was to explore the ability of traditional Bayesian confirmation theory to account for the wide range of argumentative patterns used by physicists. Relevant issues include, for example, the role and epistemological status of toy models in physics, the ability of Bayesianism to distinguish between neutral and disconfirming evidence, the possibility of providing a Bayesian account of anthropic probabilities, and the question of how strongly a theory can be confirmed in the absence of direct empirical evidence.

Invited Speakers: Jeremy Butterfiled (University of Cambridge), Erik Curiel (MCMP), Radin Dardashti (University of Hannover), Benjamin Eva (MCMP), Simon Friederich (University of Groningen), Mathias Frisch (University of Hannover), Sabine Hossenfelder (University of Frankfurt), Michael Krämer (University of Aachen), Karim Thébault (University of Bristol).

c. Additional Activities

1. Reading Group on Philosophy of Physics

This reading group focused on the foundations of modern physics and addresses conceptual, formal, and philosophical problems. We discussed contemporary papers from mathematics, physics, and philosophy of science journals that often relate to research conducted by members of the group. his reading group focuses on the foundations of modern physics and addresses conceptual, formal, and philosophical problems. In winter term 2016, we focused on the topic of Quantum Field Theory.mQuantum Field Theory plays a crucial role in modern physics, lying behind the enormous predictive success of the Standard Model. Our goal in this group was to help each other develop a grasp of this theory, despite its formal complexity. The group holds usually bi-weekly meetings throughout the academic term and is organized by Neil Dewar.

(IIX) Awards

Several MCMP members or MCMP related researchers have won awards or research programs in 2015. This is the list:

Kristina Liefke was awarded an LMU Junior Researcher Fund in preparation for the DFG Emmy Noether Project "Rich Situated Natural Language Content" (RISINC).

Stephan Hartmann will be a Senior Researcher in Residence at LMU's Center for Advanced Studies in the academic year 2016/17 to work with two postdocs and several students on the project "Scientific Reasoning and Argumentation".

Furthermore he became Member of the German Academy of Sciences Leopoldina.

Adam Caulton received the 2016 Cushing Memorial Prize by the University of Notre Dame.

Milena Ivanova received an award from the British Society for Aesthetics. The award will be towards the organisation of a conference on Aesthetics of Science to be held at the University of Leeds in July 2017, coorganised with Professor Steven French.

(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 2016:

a) Dr. Seamus Bradley

b) Dr. Jean Baccelli

c) Dr. Mark Bowker

d) Dr. Curiel Erik

e) Dr. Radin Dardashti

f) Dr. PD Richard Dawid

g) Dr. Neil Dewar

h) Lee Elkin

i) Dr. Benjamin Eva

j) Dr. Samuel Fletcher

k) Prof. Dr. Ulrike Hahn

l) Prof. Dr. Stephan Hartmann

m) Dr. Catherine Herfeld

n) Dr. Milena Ivanova

o) Dr. Karolina Krzyzanowska

p) Dr. Jürgen Landes

q) Josè Leyva

r) Dr. Kristina Liefke

s) Dr. Sebastian Lutz

t) Dr. Aidan Lyon

u) Christoph Merdes

v) Dr. Barbara Osimani

w) Patricia Palacios

x) Dr. Roland Pöllinger

y) Dr. Alexander Reutlinger

z) Dr. Reuben Stern

ä) Pascal Ströing

ö) Dr. Giovanni Valente

ü) Dr. Dr. Momme von Sydow

ß) Dr. Gregory Wheeler

α)Dr. Johanna Wolff

a) Dr. Seamus Bradley

1. Type of Affiliation with the MCMP

Seamus Bradley was a Postdoctoral Fellow at the MCMP from January 2013 until August 2016. He has since become Assistant Professor of Philosophy at the University of Tilburg.

2. Research Projects

Seamus Bradley's work was mainly on formal epistemology, in particular on "Imprecise Probability". He also worked on rationality in the context of theory choice in philosophy of science, and on objective chances. He also collaborates with Karim Thébault and Alexander Reutlinger to work on the methodology of econophysics.

3. Academic Output

Publications:

(2016): Vague chance. *Ergo*, 3:20.

(2016): Can free evidence be bad? Value of Information for the imprecise probabilist. *Philosophy of Science* vol.86 pp. 1--28 together with Katie Steele.

(201x): Constraints on rational theory choice. Forthcoming in *British Journal for the Philosophy of Science*

(201x): Modelling inequality, together with Karim Thébault and Alexander Reutlinger. Forthcoming in *British Journal for the Philosophy of Science*

In preparation:

(201x): Criteria of adequacy for an imprecise decision theory

(201x): Determinism, determinacy and chance

(201x): Migration and imperialism: two ways scientific models can travel. Together with Karim Thébault

Presentations:

1. Morals from Model Migration: Lessons from Econophsics: Invited colloquium talk Universität Düsseldorf, Germany, January 2016.

2. A Survey of Imprecise Porbabilities with an Ulterios Motive: Probabilities in Science and Philosophy, *First Jerusalem-Munich Workshop*, The Hebrew University of Jerusalem, Israel, May 2016.

3. Philosophers as Mediators: the Case of Econophysics: *René Descartes Lectures 2016*, University of Tilburg, The Netherlands, September 2016.

Further Activities:

Organizer *MCMP Graduate Workshop in Formal Epistemology* April 7—9 2016.

Organizer *Physics of Society conference* July 22—23 2016.

Courses taught:

Fall 2015/16: *Topics in Metaphysics* (seminar)

Summer 2016: *Social epistemology* (seminar)

b) Dr. Jean Bacelli

1. Type of Affiliation with the MCMP

Jean Baccelli is a Postdoctoral Research Fellow at the MCMP.

2. Research Projects

Jean Baccelli has been working in Decision Theory, Philosophy and History of Economics, and General Philosophy of Science.

3. Academic Output

Publications:

(2016): L'analyse axiomatique et l'attitude par rapport au risque, *Revue économique* 16(2):355-366.

(2016): Choice-Based Cardinal Utility, *Journal of Economic Methodology* 23(3): 268-288, together with Philippe Mongin.

In preparation:

(201x): Risk Attitudes in Axiomatic Decision Theory – A Conceptual Perspective.

(201x): What is Representational Measurement Theory Truly About?

(201x): On Decision-Making With a Rich Agency.

(201x): Ordinalism in Perspective, together with Philippe Mongin.

Presentations:

1. Research Overview: Harvard Society of Fellows – Junior Fellowship Competition, Harvard University, USA, November 2016.

2. Do Bets Reveal Beliefs: Munich Center for Mathematical Philosophy, Colloquium in Philosophy, Logic, and Philosophy of Science, Germany, November 2016.

3. Risk Attitudes in Axiomatic Decision Theory – A Conceptual Perspective: Conference *New Trends in Rational Choice Theory*, Ludwig-Maximilians-Universität München, Germany, October 2016.

City University of New York, Game Theory and Social Choice Seminar, USA, September 2016.

5. Choice-Based Cardinal Utility: External Seminar of the Laboratoire d'économie dionysien, Université Paris-VIII, France, June 2016.

20th Conference of the European Society for the History of Economic Thought, University Paris-I, France, May 2016.

c) Dr. Mark Bowker

1. Type of Affiliation with the MCMP

Mark Bowker is a Postdoctoral Research Fellow at the MCMP.

2. Research Projects

Mark Bowker has been working in General Philosophy of Language, Philosophy of Linguistics, Philosophy of Semantics, Semantics, and Philosophy of Mind.

3. Academic Output

(201x): Rich Situated Attitudes, together with Kristina Liefke. To appear in *New Frontiers in Artificial Intelligence: Lecture Notes in Computer Science/Artificial Intelligence (LNCS/LNAI)*, edited by T. Murata, A. Butler, K. Mineshima, and D. Bekki. Berlin and Heidelberg: Springer.

In preparation:

(201x): Quantification, Under Determination, and Theory Choice.

(201x): Bundling Meaning: Meaning, Intention, Reference, and Attribution.

Presentations:

1. Denying Semantic Content: *Situations, Information, and Semantic Content*, Ludwig-Maximilians-University, Munich, Germany, December 2016.

2. Rich Situated Propositions: The 'right' objects for the content of propositional attitudes: LENLS13, 8th JSAI International Symposium on AI. Keio University, Tokyo, Japan, November 2016.

3. Towards a Rich Situated Account of Semantic Underdetermination**:** Colloquium in Philosophy, Logic, and Philosophy of Science, Ludwig-Maximilians-University, Munich, Germany, October 2016.

d) Dr. Erik Curiel

1. Type of Affiliation with the MCMP

Erik Curiel is an Assistant Professor at the MCMP in his own DFG research project "Gravity, the Quantum and Thermodynamics: The Crossroads of Contemporary Theoretical Physics and Philosophy of Physics".

2. Research Projects

He conducted research primarily in four areas: 1. the thermodynamics of black holes and quantum field theory on curved spacetime; 2. the semantics of scientific theories; 3. several general issues in the foundations of classical general relativity (such as the nature of the Einstein field equation as a Law, forms of indeterminism in the theory, and the conceptual structure of the Shape Dynamics formulation of the theory); 4. the nature of reasoning and knowledge in physics.

3. Academic Output

(201x) Philosophical Problems of Black Holes. In: *A Companion to the Philosophy of Physics*, eds. E. Knox and A. Wilson, Routledge.

(201x) Newtonian Abduction as Framework Confirmation. *Synthese*, special issue "Reasoning in Physics", B. Eva and S. Hartmann (eds.).

(201x) The World-Soul as Ancestor of Some Fundamental Principles in Contemporary Physics. In: *The World-Soul: The History of a Concept*, ed. J. Wilberding, The Oxford Philosophical Concept Series, Oxford University Press.

(201x) Space. In: *Internet Encyclopedia of Philosophy* (http://www.iep.utm.edu/), B. Dowden (general ed.).

(201x) Continuum Spacetime as the Limit of Discrete Spacetime. *Synthese*, special issue "Infinite Idealizations in Science", S. Fletcher, P. Palacios, L. Ruetsche, and E. Shech (eds.).

(201x) Stranger Forms of Indeterminism in General Relativity", *Foundations of Physics*, special issue "The Hole Argument", eds. B. Roberts and J. Weatherall.

(201x) Kinematics, Measurement and Coordination: What We Get Wrong about What Reichenbach Got Right" (co-authored with F. Padovani). In: *Neo-Kantian Perspectives on the Exact Sciences*, eds. F. Biagioli and M. Giovanelli, Routledge.

(201x) On the Propriety of Physical Theories as a Basis for Their Semantics. In: *The Semantics and Structure of Scientific Theories*, eds. E. Curiel and S. Lutz.

In preparation:

(201x) A Simple Proof of the Uniqueness of the Einstein Field Equation in All Dimensions. Submitted to *General Relativity and Gravitation.*

(201x) On the Meaning, Role and Status of the Principle of Equivalence in General Relativity. Submitted to *Studies in History and Philosophy of Modern Physics*

(201x) Classical Black Holes Are Hot. Submitted to *Foundations of Physics.*

(201x) Measure, Topology and Probabilistic Reasoning in Cosmology. Submitted to *British Journal for the Philosophy of Science.*

(201x) If Metrical Structure Were Not Dynamical, Counterfactuals in General Relativity Would Be Easy. Submitted to *Erkenntnis.*

(201x) Kinematics, Dynamics, and the Structure of Physical Theories. Submitted to *Philosophy of Science.*

Presentations:

1. Kinematics, Dynamics, and the Structure of Physical Theories: Philosophy of Science Association, Biannual Conference, Atlanta, Nov. 2016.

University of Pittsburgh Center for Philosophy of Science, Quadrennial Fellows Conference, Lund, Jul. 2016.

Munich Center for Mathematical Philosophy, Conference *The Semantics of Physical Theories*, Jun. 2016.

2. On the Mathematical, Physical, and Conceptual Cogency of Quantum Field Theory On Curved Spacetime: British Society for Philosophy of Science, Annual Conference, Cardiff, Jul. 2016.

The 18th European Conference on Foundations of Physics, London, Jul. 2016.

3. A Strengthened Zeroth Law for Black-Hole Thermodynamics: Hellenic Society for Relativity, Gravitation and Cosmology Annual Conference, *NEB-17: Recent Developments in Gravity*, Mykonos, Sep. 2016.

Radboud University, High Energy Physics Group, Colloquium, May. 2016.

4. Energy Conditions and the Cogency of Quantum Field Theory on Curved Spacetime: Deutsche Physikalische Gesellschaft, Annual Conference, Hamburg, Mar. 2016.

5. The Problem of Approximate Symmetries: Laboratoire des Recherches sur les Sciences de la Matière (CEA-Saclay), Conference *Symmetries in Physics*, Paris, Dec. 2016.

6. Newtonion Abduction (Not IBE!) as Framework Confirmation: Center for Advanced Studies (Ludwig-Maximilians-Universität), Conference *Reasoning in Physics*, Munich, Dec. 2016.

7. Animadversions on the Semantic View of Theories: Universidad Complutense, Methods of Causal Inference and Scientific Representation Group Colloquium, Madrid, Dec. 2016.

8. Black Holes Really Are Thermodynamical Objects (Probably): University of Oldenburg, Institute of Physics, Mathematical Physics Colloquium, Nov. 2016.

Trinity College (University of Cambridge), Colloquium, May 2016.

University of Bristol, Depts. of Philosophy and Physics Joint Colloquium, Apr. 2016.

9. On the Possibility of Progress in Philosophy: Ludwig-Maximilians-Universität, Philosophy Faculty Colloquium, Munich, Nov. 2016.

10. Aggregating Scientific Judgements in the Absence of Empirical Data: Venice International University, Conference *Social Choice and its Philosophical Applications*, Oct. 2016.

8. What Is the Einstein Field Equation, and Why Does It Matter for Quantum Gravity?: Max Planck Institute for Gravitational Physics, Albert Einstein Institute Conference *Dashed Hopes: What Hasn't Worked in Quantum Gravity (and Why)?*', Berlin, Jul. 2016.

Radboud University, High Energy Physics Group, Colloquium, May. 2016.

8. Why the Four-Dimensional Einstein Field Equation Is Not Equivalent to the 3+1 Canonical Representation, Plus a Few (Mostly Dismissive) Remarks about the Hole Argument: London School of Economics, Dept. of Philosophy, Logic and Scientific Method Workshop, *The Hole Shebang: New Perspectives on the Hole Argument*, Jul. 2016.

9. What Is Generic and What Is Special about the Universe?: Hebrew University, Joint MCMP/Edelstein Center Conference *Probabilities in Science and Philosophy*, Jerusalem, May. 2016.

10. Black Holes and Thermodynamics: University of Florence, *Black Holes and Thermodynamics*, Dipartimento di Fisica e Astronomia, Universita di Firenze, Colloquium, Apr. 2016.

11. Conformal Structure in Classical Spacetime and in Quantum Gravity: Radboud University, Department of High Energy Physics, Colloquium, Nijmegen, Netherlands, Apr. 2016.

12. A Simple Proof of the Uniqueness of the Einstein Field Equation in All Dimensions: Radboud University, Department of High Energy Physics, Colloquium, Nijmegen, Netherlands, Apr. 2016.

13. Black-Hole Entropy Really Is Entropy: University of Bristol, Philosophy Department, Colloquium, Feb. 2016.

18. Classical Black Holes Are Hot: California Technical Institute, Division of the Humanities, Colloquium, Pasadena, CA, Jan. 2016.

Further Activities:

Courses Taught:

The Philosophy of Space, Time and Spacetime (undergraduate, graduate); "The Structure and Semantics of Scientific Theories " (graduate).

Conferences Organized:

The Semantics of Theories, co-organized with Sebastian Lutz, 23-25 June 2016, MCMP

Grants Awarded:

DFG Einzelförderung Research Grant, EUR 283,260 for three years at the MCMP, funding the project: *Gravitation, Thermodynamics and Quantum Field Theory: The Cross-Roads of Contemporary Physics*

DFG Confernce Grant, EUR 6.000, for the international conference *The Semantics of Scientific Theories* at the MCMP, Jun. 2016

Research Fellowships:

Erik was appointed a Senior Research Fellow at the Black Hole Initiative at Harvard University (Depts. of Physics, Mathematics, and Astrophysics). He will spend 4 months a year there in 2017, 2018, and 2019.

e) Dr. Radin Dardashti

1. Type of Affiliation with the MCMP

Radin Dardashti has been a MCMP Doctoral Fellow (funded by the MCMP) since October 2012. In May 2016 Radin submitted his PhD thesis. He defended his PhD successfully on June 4th and has been „Wissenschaftlicher Mitarbeiter" at the Leibniz-University Hannover since Oct. 2016.

2. Research Projects

In his dissertation Radin considers the possibility to confirm theories based on evidence, which is not implied deductively or inductively from theories. In the first part he discusses the viability of so-called non-empirical theory assessment. In the second part he analyses the viability of confirming theories by using analogue experiments, which do not fall under the domain of applicability of the theory. In the final part, he considers the role no-go theorems play in theory development.

3. Academic Output

Publications:

In preparation:

(201x): Physics Without Experiments? (under review).

(201x): The No Alternatives Argument and Theories of Quantum Gravity (under review).

(201x): The Epistemology of No-Go Theorems (draft).

(201x): Confirmation via Analogue Simulation: A Bayesian Analysis; together with Stephan Hartmann, Karim Thébault and Eric Winsberg (draft).

(201x): Confirmation by Robustness Analysis: A Bayesian Account; together with Lorenzo Casini (draft).

Presentations:

1. Scientific Reasoning in Theory Space: *Reasoning in Physics*, 12.-13. Dec. 2016, Center for Advanced Studies, LMU Munich, Germany.

2. The Epistemology of No-go Theorems: *Foundations of Physics*, 16. – 18. July 2016 London, UK.

6th Congress of the Sociéte de Philosophie des Sciences, 29. June – 1. July 2016, Lausanne, Switzerland.

3. Testing Theories, Theory Space and Scientific Practice: UIC Seminar Talk, 17. June 2016, Chicago, USA.

Five Years MCMP: Quo Vadis, Mathematical Philosophy?, 2. – 4. June 2016, Munich, Germany.

4. Confirmation via Analogue Simulation: Geneva Symmetry Group Seminar, 19. May 2016, Geneva, Switzerland.

Further Activities:

Conference Organisation: *Dashed Hopes - What hasn't worked in Quantum Gravity (and why)?*, Berlin (11. - 13.07.2016).

Refereeing: *Studies in the History and Philosophy of Physics*, *Synthese, British Journal for Philosophy of Science, Philosophy of Science.*

Assistant Editor Quantum Mechanics Section of online article database PhilPapers.org.

f) Dr. PD Richard Dawid

1. Type of affiliation with the MCMP

Richard Dawid has been working as a researcher funded by his own DFG project in 2016 until March 30. He is now assistant professor at the University of Stockholm.

2. Summary of research

Richard Dawid completed a paper on the scientific realism debate from a high energy physics perspective. He worked on three resubmissions of papers: on the comparison of the role of dualities in string theories with other cases of empirical equivalence between theories in the history of physics; on a Bayesian perspective on the Higgs discovery, and, in cooperation with Stephan Hartmann, on the base rate fallacy in the no miracles argument for scientific realism..

3. Academic output

(201x): Duality, empirical equivalence and free parameters, accepted for publication in *Studies in the History and Philosophy of Science* (Special Issue on Dualities), forthcoming.

(201x): High Energy Physics and Scientific Realism, accepted for publication in *Scientific Realism,* Routledge, forthcoming.

(201x): Bayesian Perspectives on the Discovery of the Higgs Particle, *Synthese* forthcoming.

(2016):Modelling Non-Empirical Confirmation, in *Models and Inferences in Science,* Springer.

In preparation:

(201x): NMA without Base Rate Fallacy, together with Stephan Hartmann, submitted.

Presentations (between 1.1. and 30.3. 2016):

1.Non-empirical theory confirmation, invited talk at Stockholm University, Sweden.

Invited talk at UC Irvine, USA.

2. Scientific Underdetermination and Scientific Realism: at the conference *Scientific Realism and the Challenge from the history of Science* Indianapolis, USA.

3. Duality and the Changing Notion of Empirical Equivalence, invited talk at the Univ. of Illinois, Chicago, USA.

4. String Theory, Final Theory Claim and Scientific Realism, GWP 2016, Düsseldorf, Germany.

4. Other activities.

Guest editor of the special issue "Epistemology of the Higgs Search" for *Synthese*, completed in 2016, forthcoming.

Start of the editing project *Why trust a Theory? – Reconsidering Scientific Methodology in Light of Modern Physics*, (with Radin Dardashti and Karim Thebault), an edited volume of contributions to the 2015 Workshop of the same name submitted to Cambridge University Press.

2nd PhD supervisor: Radin Dardashti, LMU Munich, (Defensio July 2016).

Masters Supervision: Killian McGrath (Defensio Sept. 2016)

g) Dr. Neil Dewar

1. Type of Affiliation with the MCMP

Neil Dewar is Assistant Professor in Philosophy of Physics at the MCMP, since October 2016.

2. Research Projects

Neil Dewar has been working in Philosophy of Physics, Formal Philosophy of Science, and Metaphysics.

3. Academic Output

(201x): Interpretation and Equivalence; or, Equivalence and Interpretation. To appear in Curiel and Lutz (eds.), *The Semantics of Theories*.

In preparation:

(201x): Maxwell Gravitation. Submitted to *Philosophy of Science*.

(201x): Ramsey Equivalence. Submitted to *Erkenntnis.*

(201x): La Bohume. Submitted to *Synthese*.

(201x): Algebraic Structuralism. Submitted for The Metaphysics of Entanglement 2017 Essay Prize, and for the 2017 Marc Sanders Prize in Metaphysics.

Presentations:

1. How is Structure?: Work-in-Progress Seminar, Munich Center for Mathematical Philosophy, Germany, November 2016.

2. Analytic and Synthetic Symmetries: *Workshop on Symmetries and Symmetry Breaking in Fundamental Physics*, University of Paris-6, France, December 2016.

h) Lee Elkin

1. Type of Affiliation with the MCMP

Lee Elkin is a doctoral fellow at the MCMP since January 2014.

2. Research Projects

Lee Elkin's doctoral research focuses on applications of imprecise probability, i.e. sets of probabilities, to philosophical problems relating to rational belief. The issues he addresses in his PhD dissertation include peer disagreement, complete ignorance, and confirmation.

3. Academic Output

Publications:

(201x): Resolving Peer Disagreements Through Imprecise Probabilities, together with Gregory Wheeler. To appear in *Noûs*.

(2015): An Epistemically Modest Response to Disagreement. *The Reasoner*, *9*(9), 76-77.

In preparation:

(201x): Bayesian Cognitive Science, Monopoly, and Neglected Frameworks, together with Matteo Colombo and Stephan Hartmann.

(201x): Complete Ignorance, Self-Duality, and Imprecise Probability.

(201x): The Many Faces of Confirmation in Imprecise Probability Theory.

Presentations:

1. Betting Against Conciliation and Steadfastness: The Case for Imprecision. *11th Cologne Summer School in Philosophy*, Universität zu Köln, July 2016.

2. Confirmation Theory with Imprecise Probabilities, *The 2016 Eastern Division Meeting of the American Philosophical Association*, Washington D.C., January 2016.

i) Dr. Benjamin Eva

1. Type of Affiliation with the MCMP

Since August 2016, Benjamin Eva is a Postdoctoral Researcher on the LMU Center for Advanced Studies research project `Reasoning and Argumentation in Science', headed by Stephan Hartmann. He is also an official member of the MCMP.

2. Research Projects

Benjamin Eva's work has primarily focused on the themes of the *Reasoning and Argumentation in Science* research project, i.e. Bayesian philosophy of science, philosophy of physics, the application of Bayesian methods to the study of formal schemes of argumentation.

3. Academic Output

Publications:

(201x) Review of Bananaworld: Quantum Mechanics for Primates, to appear in *Metascience.*

(201x) A-Symmetric Confirmation and Empirical Skepticism, Revise and Resubmit at *Synthese.*

(201x) Causal Explanatory Power (with Reuben Stern), Under Review at *Philosophy of Science.*

(201x) Bayesian Argumentation and the Value of Logical Validity (with Stephan Hartmann), Under Review at *Artificial Intelligence.*

(201x) Imaging Uncertainty (with Stephan Hartmann), Under Review at *Mind.*

In preparation:

(201x) New Models for Old Evidence (with Stephan Hartmann).

(201x) Modal Scoring Rules (with Richard Pettigrew).

(201x) Symmetry: A Categorical Taxonomy (with Neil Dewar).

(201x) A Logical Reformulation of Operator Inequalities (with Masanao Ozawa and Andreas Doering).

Presentations:

1. Q-Worlds: A Guided Tour: *Homotopy Type Theory in Logic, Metaphysics and Philosophy of Physics*, University of Bristol, September 2016.

2. Explanatory Power: 2nd Villa Vigoni Workshop on Probabilistic Reasoning, October 2016.

3. A non-Numeric Representation of the Astronomer's Prior: *Reasoning in Physics*, LMU Center for Advanced Studies, December 2016.

j) Dr. Samuel Fletcher

1. Type of Affiliation with the MCMP

Samuel Fletcher has been a Marie Curie Fellow at the MCMP from July 2014 through August 2015, and May 2016 through August 2016.

2. Research Projects

Samuel Fletcher works primarily in philosophy of physics, philosophy of science, and philosophy of statistics. His main focus at the MCMP has been on expanding his dissertation work on intertheoretic reduction for theories of spacetime/gravitation, extending it as well to other physical theories. He is also working on topics concerning the foundations and interpretation of quantum mechanics (e.g., hidden variables, and quantum holism), and the nature of statistical evidence (e.g., the role of the likelihood principle).

3. Academic Output

Publications:

(2016): Similarity, Topology, and Physical Significance in Relativity Theory, *British Journal for the Philosophy of Science* 67.2: 365–389.

In preparation:

(201x): The Topology of Intertheoretic Reduction.

(201x): On the Reduction of General Relativity to Newtonian Gravitation.

(201x): Global Spacetime Similarity.

(201x): On the Local Flatness of Spacetime, with James Weatherall.

(201x): Quantum and Classical Holism.

(201x): Classical Field Theory and Intertheoretic Reduction.

(201x): The Physical Basis of Computation and Computational Complexity.

(201x): Model Verification and the Likelihood Principle.

(201x): Counterfactuals within Scientific Theories.

(201x): Limits of Nagelian Reduction.

(201x): The Principle of Stability.

(201x): Indeterminism, Gravitation, and Spacetime Theory.

(201x): The Logic of Severe Testing.

(201x): On the Alleged Incommensurability of Newtonian and Relativistic Mass.

(201x): Emergence, Explanation, and (Infinite) Idealization.

Presentations:

Space-time Structuralism, Erasmus University Rotterdam, March 2015.

Gravitation and Relativity Group, Institute for Theoretical Physics, University of Cologne, January 2015.

1. On Noncontextual, Non-Kolmogorovian Hidden Variable Theories, together with Ben Feintzeig: *5th Summer School in the History and Philosophy of Science: Probability and Quantum Mechanics*, University of Tübingen, August 2016.

2. The Principle of Stability: *First Principles in Science: Their Epistemic Status and Justification*, LMU Munich, June 2016.

Department of Logic and Philosophy of Science, University of the Basque Country, San Sebastián, Spain, June 2016.

Department of Philosophy, Bogaziçi University, Istanbul, Turkey, May 2016.

Philosophy of Science in a Forest—Dutch Association for Philosophy of Science, Doorn, the Netherlands, May 2016.

3. Indeterminism, Gravitation, and Spacetime Theory: *5th Budapest-Krakow Workshop on Probability, Causality and Determinism*, Institute of Philosophy, Hungarian Academy of Sciences, Budapest, May 2016.

4. The Logic of Severe Testing: Department of Philosophy, Bogaziçi University, Istanbul, Turkey, May 2016.

5. On the Alleged Incommensurability of Newtonian and Relativistic Mass: *Foundations of Physics*, London School of Economics, July 2016.

British Society for the Philosophy of Science Annual Meeting, University of Cardiff, July 2016.

6e Congrès de la Société de Philosophie des Sciences, University of Lausanne, June 2016.

Munich Center for Mathematical Philosophy, LMU Munich, June 2016.

4th International Conference on the Nature and Ontology of Spacetime, Varna, Bulgaria, June 2016.

6. Emergence, Explanation, and (Infinite) Idealization: *Infinite Idealizations in Science*, LMU Munich, June 2016.

7. Elvis Has Left the Building: *The Whole Shebang: New Perspectives on the Hole Argument*, London School of Economics, July 2016.

Further Activities:

Sessions Chaired:

Foundations of Physics, London School of Economics, July 2016.

The Semantics of Theories, LMU Munich, June 2016.

First Principles in Science: Their Epistemic Status and Justification, LMU Munich, June 2016.

Infinite Idealizations in Science, LMU Munich, June 2016.

Philosophy of Science in a Forest—Dutch Association for Philosophy of Science, Doorn, the Netherlands, May 2016.

Conferences Organized:

Organizing Committee (with Milena Ivanova and Karolina Krzyzanowska): *3rd Summer School on Mathematical Philosophy for Female Students*, Munich Center for Mathematical Philosophy, LMU Munich, July 2016.

Organizing Committee (with Patricia Palacios): *Infinite Idealizations in Science*, Munich Center for Mathematical, Philosophy, LMU Munich, June 2016.

Program Committee*: MuST 9: Evidence, Inference, and Risk*, Program Committee, Munich Center for Mathematical Philosophy, LMU Munich, April 2016.

Grant applications (successful):

Fund for Diversity and Inclusiveness Grant (1,000 USD), American Philosophical Association, for Third Summer School on Mathematical Philosophy for Female Students (2016).

k) Prof. Dr. Ulrike Hahn

1. Type of Affiliation with the MCMP

Collaboration via an Anneliese Maier Research Award of the Alexander von Humboldt Foundation.

2. Research Projects

Human rationality from both a normative and a descriptive perspective: in particular, argumentation, judgment and decision making.

3. Academic Output

Publications:

(2016) Pessimism about optimistic belief updating. *Cognitive Psychology*, *90,* 71-127, together with Shah, P., Harris A.J.L., Bird, G., Catmur, C..

(2016) Spatial representations of coherence. *Journal of Experimental Psychology*: General, 145, 853-871, together with Von Hecker, U, and Rollings, J..

(201x) Value instantiations: The missing link between values and behavior? In Sonia Roccas and Lilach Sagiv (eds.): *Values and behaviour: taking a cross-cultural perspective*, Springer, together with Hanel, P.H.P., Vione, K.C. and Mai, G.R..

Presentations:

1. A failure to consider learning has hampered understanding of the conditional: Feb, 2017. Workshop: *Learning Conditionals*, Center for Advanced Studies, LMU, Germany.

2. Rational argument: A Bayesian perspective: Nov. 2016. Dept. of Philosophy, University of Stirling.

3. (Bayesian) Argumentation in the Real World: Sept. 2016. Workshop *Bayesian Networks and Argumentation in Evidence Analysis*, Issac Newton Institute for Mathematical Sciences, Cambridge.

Aug. 2016. *International Conference on Thinking*, ICT 2016, Brown, U.S.A..

4. How the world changes when we learn that "if ..., then...": Aug. 2016. *International Conference on Thinking*, ICT 2016.

5. Why normative status matters, and why Quantum Probability fails: Aug. 2016. *International Conference on Thinking*, ICT 2016.

6. Rational Argument: from normative to descriptive considerations and back: July 2016. Keynote, European Epistemology Network Meeting, Paris.

7. How Rational are We?: Feb. 2016 Dept of Experimental Psychology, Cambridge University-

Honours and Awards

June 2017, Honorary Doctorate Lund University

I) 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. Currently he is also a Senior Researcher in Residence at the Center for Advanced Studies (CAS) at LMU.

2. Research Projects

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

3. Academic Output

Publications:

(2016): Generalized Dicke States, *Quantum Information and Computation* 16, No. 15 & 16: 1333–1348.

(2016): Simulating Trends in Artificial Influence Networks, *Journal of Artificial Societies and Social Simulation 19(1):2*, together with Hannah Übler.

(2016): Review of Margaret Morrison: Reconstructing Reality: Models, Mathematics, and Simulations, *The British Journal for the Philosophy of Science*, together with Alexander Reutlinger.

(201x): Bayesian Cognitive Science, Unifaction and Explanation, together with Matteo Colombo. To appear in *The British Journal for the Philosophy of Science.*

(201x): Understanding (With) Toy Models, together with Dominik Hangleiter and Alexander Reutlinger. To appear in *The Bristish Journal for the Philosophy of Science*.

(201x): Voting, Deliberation, and Truth, together with Soroush Rafiee-Rad. To appear in *Synthese*.

(201x): The No Miracles Argument without the Base Rate Fallacy, together with Richard Dawid. To appear in *Synthese.*

In preparation:

(201x). Anchoring in Deliberations, together with Soroush Rafiee-Rad.

Presentations:

1. Assessing Scientific Theories: Department of History and Philosophy of Science, University of Cambridge, UK, November 2016.

Unit for Philosophy of Science, University of Vienna, Vienna, Austria, November 2016.

University of Buenos Aires, Argentina, July 2016.

Inaugural Conference of the East European Network for Philosophy of Science, Sofia, Bulgaria, June 2016.

California Institute of Technology, Pasadena, USA, April 2016.

2. Probabilistic Approaches to Reasoning and Argumentation: workshop *Human Rationality: Probabilistic Points of View*, Villa Vigoni, Italy, November 2016.

3. Bayesian Argumentation and the Value of Logical Validity: Institute of Philosophy, University of London, London, UK, October 2016.

4. Probability Aggregation: workshop *Social Choice and its Philosophical Applications*, Venice International University, Venice, Italy, October 2016.

5. Probabilistic Reasoning and Argumentation: four lectures at the *International Rationality Summer Institute*, Aurich, Germany, September 2016.

6. Bayesian Argumentation: at the symposium Bayesian Argumentation, *International Conference on Thinking*, Brown University, Providence, RI, USA, August 2016.

7. The No Alternatives Argument and the Relevance of Beliefs About Alternative Theories: *International Conference on Thinking*, Brown University, Providence, RI, USA, August 2016.

8. Learning Causal Conditionals: SADAF, Buenos Aires, Argentina, July 2016.

Probabilities in Science and Philosophy (= *The First Jerusalem-MCMP Workshop in the Philosophy of Science*) at the Hebrew University of Jerusalem, Jerusalem, Israel, May 2016.

Bayes Forum, Max Planck Institute for Extraterrestrial Physics, Munich, Germany, March 2016.

8. Wie bewertet man eine wissenschaftliche Theorie?: Physikalisches Kolloquium, University of Bremen, Germany, January 2016.

9. Confirmation Via Analogue Simulation: A Bayesian Account: at the symposium Computer Simulations in Science, Annual Meeting of the Eastern Division of the American Philosophical Association, Washington D.C., USA, January 2016.

10. Understanding Toy Models: at the Workshop *Reduction in Physics and Biology*, Santiago, Chile, January 2016.

m) Dr. Catherine Herfeld

1. Type of Affiliation with the MCMP

Catherine Herfeld is assistant professor at the MCMP since October 2016, covering for Stephan Hartmann.

2. Research Projects

In 2016, Catherine is working on several projects. She has worked on two books, both are under contract with *Cambridge University Press* and several paper project. She has given 8 (partly invited) talks at multiple conferences, workshops and colloquia within the larger field of expertise, i.e. philosophy of the social sciences, and more specifically philosophy and history of economics. She got a grant from the program LMU Excellent (2249 EUR) to travel to San Francisco to present her work at the *Annual Meetings of the American Social Sciences Association.* She has also given 3 invited lectures at summer schools for graduate students in philosophy of economics and for female philosophy students. She has published an article on the field of Philosophy of Political Science in an edited volume, another interview as a 'teaser' for her interview book, and one book review. She furthermore worked on a project entitled 'Women in Philosophy', which will be presented at a workshop on *Inclusion and Exclusion* in Philosophy at the University in Hannover in June and which she is currently writing up in two publications. Catherine has re-submitted 2 articles for publication that had been requested to be revised and resubmitted. She has furthermore submitted one article that is currently under review and furthermore got requests to revise and resubmit 3 articles. She was invited to join the program committee for 3 conferences, has supervised 3 master theses, and was mentor for 2 female philosophy students within the context of the LMU Mentoring Program for Female Philosophy Students. Finally, Catherine submitted 8 abstracts for conferences in 2017, of which so far 4 were accepted and none of them rejected.

Together with her colleague Milena Ivanova, Catherine has organized a workshop on *First Principles in Science: Their Epistemic Status and Justification,* for which they got a grant from the Münchener Universitätsgesellschaft (1200 EUR). Together with Milena Ivanova, Catherine will edit a Special Issue of the papers presented at the workshop for the journal *Synthese*, for which Catherine will also submit her own contribution. Together with her colleague Chiara Lisciandra (Unversity of Groningen), Catherine is furthermore editing a Special Issue on *Knowledge Transfer and Its Contexts* for the journal *Studies in History and Philosophy of Science: Part A*. Catherine also

works on a project on the history of decision theory, for which she had received a Research Grant from the *European Society for the History of Economic Thought*, together with her colleague Ivan Moscati (University of Varese) in 2015. In this context, Ivan Moscati visited the MCMP for 7 weeks, where they worked together on a joint paper project about the history of decision-making under uncertainty in economics.

Catherine has prepared a DFG grant proposal for a Research Unit that was submitted in September 2016. She taught 4 courses in 2016/17, two on philosophy of the social sciences (at LMU Munich and at University of Vienna), and two on central topics in philosophy of science (at LMU Munich and at University of Vienna). Parallel to her position at LMU Munich, Catherine was a 3-month guest professor at the Philosophy Department of the University of Vienna.

3. Activities

Publications:

(201x): Conversations on Rational Choice Theory, Cambridge University Press.

(201x): The Many Faces of Rational Choice Theory, Cambridge University Press.

(2016):Book Review: Thomas, William (2015): Rational Action: The Sciences of Policy in Britain and America, 1940–1960, *Isis, Journal of the History of Science Society.*

(2016): Philosophie der Politikwissenschaft, in: Reydon, Thomas/Lohse, Simon: *Philosophie der Einzelwissenschaften*.

(2016):The World in Axioms: An Interview with Patrick Suppes, *Journal of Economic Methodology.*

(201x): Defining the Rules of Rationality: Marschak, Koopmans, and the Normative Shift in Economics, 1943-1954, *History of Political Economy*.

(201x): The Diffusion of Scientific Theories: A Role Typology, together with Malte Döhne, *Studies in History and Philosophy of Science: Part A*.

(201x.): Explaining Principles and Predicting Patterns: The Problem of Modeling Complex Phenomena in Economics, *Journal of Economic Methodology*.

(201x): Imagination Rather than Observation in Econometrics: The Case of Ragnar Frisch's Hypothetical Experiments, *European Journal for the History of Economic Thought.*

(201x): Between the 'Logic of Choice' and the Behavioral Sciences: The Emergence of Rational Choice Theories in the 1950s, *European Journal of the History of Economic Thought.*

(201x): Economics and the Behavioral Sciences Movement: Developing Rational Choice Theory at the Center for Advanced Study in the Behavioral Sciences, 1952-1967, *Journal for the History of the Behavioral Sciences*.

(201x) Invited Book Review: Epstein, Brian (2915): The Ant Trap, Oxford: Oxford University Press; *Philosophy of the Social Sciences* (with Francesco Di Iorio)

(201x) Invited Book Review: Julie Zahle and Finn, Colin (eds.) (2014) Rethinking the Individualism/Collectivism Debate: Essays in the Philosophy of Science, Berlin; Springer, *Philosophy of the Social Sciences.*

(201x): New Methodologies in the History of Economics, *History of Economic Ideas* (with Cléo Chassonery-Zaïgouche and Erich Pinzón Fuchs).

In preparation:

(201x): An Argument for Local Critique in Philosophy of Economics: The Case of Rational Choice Theory.

(201x): Conflicts of Interest in Science: Their Implications for Epistemic Peerhood and the Significance of Dissent, together with Lee Elkin and Stephan Hartmann.

(201x): Let's Formalize Behavior: The Diffusion of Rational Choice Theory in American Social Sciences, 1944-1965, together with Malte Döhne (University of Zurich).

(201x): Between Individual Calculation and Market Demand: The Ambiguous Status of W. S. Jevons' Account of Human Behavior.

(201x): Realism in Economics – But Which One?, together with Thomas Sturm (Universidad Autónoma de Barcelona).

(201x): An Empirical Investigation of Current Hypotheses about Explaining the Gender Gap in Philosophy (with Elizabeth Rosas – LMU psychology).

(201x): Crossing Domains: The Role of the Translator in the Spread of Scientific Innovations

(201x): The Rationality Principle in Economics: Its Recent History and Justifications

(201x): How Useful are Female-only Events in the Teaching of Women Philosophy Students?

(201x): The Economist's Persisting Commitment to Methodological Rationalism

Presentations:

1. Einführung in die Wissenschaftstheorie: *Ringvorlesung zur Einführung in die Philosophie*, LMU München, Germany.

2. Using social network analysis in philosophy: *3rd Summer School on Mathematical Philosophy for Female Students*, MCMP, Munich, Germany.

3. Reappraising rational choice theory in the context of economic practices: *INEM/CHESS Summer School on Philosophy and Economics*, San Sebastian, Spain.

4. Imagination rather than observation in econometrics: Ragnar Frisch's hypothetical experiments: *6th International Conference on Integrated History and Philosophy of Science*, University of Edinburgh, UK.

Annual Meeting of the Allied Social Science Associations, San Francisco, USA.

5. 'Let's formalize behavior': The diffusion of rational choice theories across American social sciences, 1944-1970: History of Economics Society Annual Conference, Duke University, UK, together with Malte Döhne.

6. Not more than exchanging tools: early encounters between mathematical economists and the Behavioral Sciences Movement: *3rd Annual Conference on the History for the Recent Social Sciences*, London School of Economics, UK.

7. Turning towards normative choice models in the early Cold War years: The case of Cowles: 20th Annual Conference of the European Society for the History of Economic Thought, University of Paris 1, Panthéon-Sorbonne, France.

8. How theories travel: The case of the Theory of Games, 1944-1970: Gesellschaft für Wissenschaftsphilosophie, University of Düsseldorf, Germany, together with Malte Döhne.

Federmann Center for the Study of Rationality, Hebrew University, Israel.

Further Activities:

Since 2013 Mentee of the Program LMUMentoring in support of highly qualified young female scientists in their scientific career on the road to professorship (financial support for conference and workshop attendance, external university visits, student assistance in support of specific projects, etc.).

ESHET Grant from the European Society for the History of Economic Thought (13.000 EUR); together with Ivan Moscati.

German Academic Exchange Service, conference travel grant (1,660 EUR).

Grant of the German Research Council (DFG) in support of the workshop 'Knowledge Transfer and Its Contexts' (5,400 EUR).

Junior Researcher in Residence at the Center for Advanced Studies at LMU Munich (semester-long research fellowship awarded for academic excellence).

Organizer Workshop: *First Principles in Science: Their Epistemic Status and Justification,* MCMP; (with Milena Ivanova).

Supervision as first examiner: MA thesis of Ray Zhang, Toni Queck, Sarah Espinosa.

Teaching: *Philosophy of the social sciences*, University of Vienna (lecturer); in English.

Teaching: *Philosophy of the social sciences*, MCMP (lecturer); in English.

Teaching: *Central Topics in Philosophy of Science*, University of Vienna; in English.

Teaching: *Central Topics in Philosophy of Science*, MCMP; in English.

Since 2014: Program Committee Member for conferences: Reasoning and Argumentation in Science' (MCMP/LMU Munich), 'European Philosophy of Science Association Conference 2017', '3rd TOPOI Conference: New Trends in Rational Choice Theory', 'Agent-based Modelling in Philosophy' (MCMP/LMU Munich); 'Explanation without Causation' (MCMP/LMU Munich); 'Objectivity in Science' (8th Munich-Sydney-Tilburg Conference at Tilburg Center for Logic, General Ethics, and Philosophy of Science); 'Evidence, Inference, and Risk' (9th Munich-Sydney-Tilburg Conference at Tilburg Center for Logic, General Ethics, and Philosophy of Science), Idealizations in Science (MCMP/LMU Munich), 2nd MCMP Graduate Workshop -- Formal Epistemology (MCMP/LMU Munich).

Since 2013: Search Committee Member for PhDs, postdoctoral positions, assistant professorships, and visiting fellows at the MCMP.

Since 2013: Overseas postgraduate ambassador for the *British Society for the History of Science*.

Since 2012: Refereeing for *Erasmus Journal for Philosophy and Economics, Erkenntnis, European Journal of the History of Economic Thought, History of Political Economy, International Studies in the Philosophy of Science, Journal of Social Philosophy, Journal of Economic Methodology, Philosophy of the Social Science, Studies in History and Philosophy of Science.*

Editorial Work:

Special Issue on *Knowledge Transfer and Its Contexts,* with Chiara Lisciandra (University of Groningen), *Studies in History and Philosophy of Science: Part A.*

Special Issue on 'First Principles in Science: There Epistemic Status and Justification,' ed. with Milena Ivanova, *Synthese.*

n) Dr. Milena Ivanova

1. Type of Affiliation with the MCMP

Milena Ivanova is a postdoctoral fellow at the MCMP.

2. Research Projects

Milena Ivanova has been working in General Philosophy of Science, History of Philosophy of Science and Epistemology.

3. Academic Output

Publications:

(201x): Aestehtic Values in Science in *Philosophy Compass.*

(201x): Poincaré's Aesthetics of Science in *Synthese.*

(201x): Virtues and Vices in Scientific Practise in *Synthese*, together with Cédric Paternotte.

(201x): Scientific understanding and aesthetic values in Neo-Kantianism in Philosophy of Sicence, Routledge.

(201x): Mach, Duhem and the Limits of Scientific Knowledge, in: *Collection Ernst Mach*, Springer.

(201x): David Stump's Conceptual Change and the Philosophy of Science: Alternative Interpretations of the A Priori, in *Hopos*.

Presentations:

1. Aesthetic Values in Scientific Understanding: New Zealand Association of Philosophers Annual Conference, University if Waikato, New Zealand, December 2016.

Philosophy research seminar, Macquarie University, Australia, December 2016.

Philosophy research seminar, University of Queensland, Australia, September 2016.

Joint Session of the Aristotelian Society and Mind Association, University of Cardiff, UK, July 2016.

Summer School for Female Students, MCMP, LMU Munich, Germany, July 2016.

Philosophy of Science Colloquium, University of Queensland, Australia, March 2016.

2. Constitutive Principles and their Evolution: *First Principles in Science*, MCMP, LMU Munich, Germany, July 2016.

3. Mach, Duhem and the Limits of Scientific Knowledge: *Ernst Mach Centenary Conference*, University of Vienna, June 2016.

4. The A Priori in Science: Book Symposium on Conceptual Change and the Philosophy of Science: Alternative Interpretations of the A Priori, American Philosophical Association, San Francisco, USA, March 2016.

5. Poincarés Aesthetics of Science: Britsih Society for the Philosophy of Science, University of Cardiff, UK, July 2016.

6th Congrés de la Societé de Philosophie des Sciences, University of Lausanne, Switzerland, July 2016.

NeoKantian Perspectives on the Exact Sciences, University of Konstanz, Germany, January 2016.

o) Dr. Karolina Krzyżanowska

1. Type of Affiliation with the MCMP

Karolina Krzyżanowska has been a Postdoctoral Fellow at the Munich Center for Mathematical Philosophy since October 1st 2014. Additionally, since October 2016, she is a member of Professor Stephan Hartmann's project: "Scientific Reasoning and Argumentation" (Senior Researcher in Residence, Center for Advanced Studies, LMU Munich).

2. Research Projects

Her research is mostly concerned with topics at the intersection of philosophy of language and psychology of reasoning. In particular, she has been interested in indicative conditionals: their role in reasoning, decision making, and belief change. Moreover, she has been involved in experimental work on the assertability of indicative conditionals (together with Peter Collins and Ulrike Hahn from Birkbeck, University of London) and on semantics-pragmatics interface in general (together with Igor Douven from CRNS, Paris-Sorbonne).

3. Academic Output

In preparation:

(201x): Igor Douven and Karolina Krzyżanowska: The Semantics–Pragmatics Interface: An Empirical Investigation.

(201x): Karolina Krzyżanowska, Peter Collins, and Ulrike Hahn: Between a conditional's antecedent and its consequent: discourse coherence vs. probabilistic relevance.

(201x): Karolina Krzyżanowska, Peter Collins, and Ulrike Hahn: The Puzzle of Conditionals with True Clauses: Against the Gricean Account.

(201x) Peter Collins, Karolina Krzyżanowska, Stephan Hartmann, Gregory Wheeler, Ulrike Hahn: Conditionals and Testimony.

(201x) Karolina Krzyżanowska_and Paula Quinon: Assertions about numbers.

Presentations:

1. Indicative Conditionals: From Language to Reasoning and Back: *The Relevance of Logic to Human Reasoning Workshop*, Munich, Germany, November 2016.

2. Researching Missing-Link Conditionals: Methodological Obstacles and How (We Could at Least Try) to Avoid them: *Young Scientist's Forum of the International Rationality Summer Institute*, Aurich, Germany, September 2016.

3. Indicative Conditionals and the Search for the Semantics-Pragmatics Distinction: *International Conference on Thinking* (ICT2016), Providence, RI, United States, August 2016.

4. Persuading with Conditionals: invited contribution to the Symposium *Dynamic Inference and Belief Revision* organised by Mike Oaksford at the *International Conference on Thinking* (ICT2016), Providence, RI, United States, August 2016.

5. Comment on Ben Schwan and Reuben Stern's paper: "A Causal Understanding of When and When Not to Jeffrey Conditionalize,": Formal Epistemology Workshop 2016, Groningen, June 2016.

6. What Psychology of Reasoning can Teach us about the Meaning of Indicative Conditionals: The Case of a Metalinguistic Theory: *2nd Belgrade Conference on Conditionals*, Belgrade, Serbia, May 2016.

7. Keynote talk: "What Psychology of Reasoning Can Tell Us About the Meaning of Indicative Conditionals: *Warsaw Workshop in Philosophy of Language: Logic and Meaning*, Warsaw, Poland, May 2016.

8. What are Indicative Conditionals About?: at EuNoC Workshop, Leeds, UK, January 2016.

Further Activities:

Co-Organization of the *Third Summer School in Mathematical Philosophy for Female Students* (July 2016, together with Milena Ivanova and Samuel Fletcher).

p) Dr. Jürgen Landes

1. Type of Affiliation with the MCMP

Jürgen Landes is a Postdoc with PhilPharm Projekt led by Dr. Barbara Osimani. He joined the MCMP on 01.10.2015.

2. Research Projects

Juergen Landes has been working in General Philosophy of Science, Bayesian Epistemology, Philosophy of Medicine and Philosophy of Statistics.

3. Academic Output

Publications:

(2016): Special issue: Combining probability and logic. Journal of Applied Logic, 14: pages 1–2, 2016, together with Jon Williamson. URL http://dx.doi.org/10.1016/j.jal.2015.09.009.

(2016): Objective Bayesian nets from consistent datasets. In: Adom Giffin and Kevin H. Knuth, editors, *Proceedings of MaxEnt*, volume

1757, pages 020.007–1 – 020.007–8. AIP, 2016, together with John Williamson. URL http://dx.doi.org/10.1063/1.4959048.

(201x): The Principal Principle implies the Principle of Indifference. *British Journal for the Philosophy of Science*, 2017, together with James Hawthorne, Christian Wallmann and Jon Williamson. URL http://dx.doi.org/10.1093/bjps/axv030. 9 pages, early view.

(201x): Epistemology of Causal Inference in Pharmacology. *European Journal for Philosophy of Science*, together with Barbara Osimani and Roland Poellinger.

(201x): An Evidence-Hierarchical Decision Aid for Ranking in Evidence-Based Medicine. In: Barbara Osimani and Adam La Caze, editors, *Philosophy of Pharmacology*, Boston Studies in Philosophy of Science. Springer.

In preparation:

(201x): Exact replication or varied evidence? The Varied of Evidence Thesis and its methodological implication in medical research. 2017, together with Barbara Osimani.

(201x): Objective Bayesian nets from consistent datasets: Theory and Matlab Implementation, together with Jon Williamson.

(201x): Special Issue: Evidence Amalgamation in the Sciences, together with Samuel C. Fletcher and Roland Poellinger.

(201x): Variety of Evidence.

Presentations:

1. Objective Bayesianism and the Principle of Maximum Entropy: Duesseldorf Center for Logic and Philosophy of Science, Germany, October 2016.

2. Objective Bayesian Nets from Consistent Datasets: Statistics Research Seminar LMU, Germany, June 2016.

DFG Workshop on Entropy, Ludwigsburg, Germany, February 2016.

3. Invariant Equivocation: Formal Epistemology Workshop, Groningen, The Netherlands, June 2016.

4. Down with the Establishment: In with the Variety: Explanation and Evidence of Mechanism, Canterbury, 1UK, May 2016.

5. A Medical Ranking Problem: *MuST* 9, Munich, Germany, April 2016.

Further activities:

Co-Organizer of the workshop on *Drug Safety, Probabilistic Causal Assessement, and Evidence Synthesis,* MCMP, LMU Munich to take place in January 2017.

q) José Leyva

1. Type of Affiliation with the MCMP

José Leyva has been an MCMP Doctoral Fellow on his own funds since October 2014.

2. Research Projects

José has been working on topics related to the emergence of social norms, on which he intends to write his doctoral dissertation.

3. Academic Output

He attended the following conferences/workshops organized by the MCMP, Munich, Germany: *First Principles in Science: Their Epistemic Status and Justification,* and *The Semantics of Theories.*

Teaching Assistant: *Theoretische Philosophie I: Einführung in die Wissenschaftstheorie.*

r) Dr. Kristina Liefke

1. Type of Affiliation with the MCMP

Since January 2015, Kristina Liefke has been a Postdoctoral Fellow at the MCMP in her DFG-sponsored project *Unity and Unification in Intensional Semantics* (2015-2018). From May 2015 until June 2016, she has been on maternity leave. In July 2016, she returned on a half-time position.

2. Research Projects

Kristina Liefke has been working on the logical and ontological foundations of formal natural language semantics, on the philosophy of linguistics, and on intertheoretic relations in the philosophy of science. Her current research projects include a unification of the different intensional models for natural language semantics, the identification of linguistic evidence for a semantics with a single type of primitive (with Markus Werning), the investigation of computable (or 'effective') models of natural language interpretation (with Sam Sanders), and the development of a new, type-theoretic, model of intertheoretic relations (with Stephan Hartmann).

3. Academic Output

Publications:

(201x): Rich Situated Attitudes (with Mark Bowker), accepted for publication in *New Frontiers of Artificial Intelligence*. Berlin and Heidelberg: Springer, 16 p. [revised and extended version of Rich Situated Propositions].

(2016): Rich Situated Propositions: the 'right' objects for the content of propositional attitudes (with Mark Bowker), in *Proceedings of Logic and Engineering of Natural Language Semantics 13*. Kanagawa: Keio University Press, 173-186.

(2016): A Computable Solution to Partee's Temperature Puzzle (with Sam Sanders), in *Logical Aspects of Computational Linguistics*. Lecture Notes in Artificial Intelligence 10054. Berlin and Heidelberg: Springer, 175-190.

In preparation:

(201x): Montague Reduction, Confirmation, and the Syntax-Semantics Relation, with Stephan Hartmann, 23p. (under review at *Journal of Logic, Language and Information*).

(201x): Evidence for Single-Type Semantics – An alternative to *e*/*t*-based dual-type semantics, with Markus Werning, 45p. (under revision for resubmission to *Journal of Semantics*).

Presentations:

1. Rich Situated Propositions: the 'right' objects for the content of propositional attitudes: *Situations, Information, and Semantic Content*, Munich, Germany.

2. A Computable Solution to Partee's Temperature Puzzle: *Logical Aspects of Computational Linguistics (LACL 2016)*, Nancy (refereed)

Natural Language and Computer Science (NLCS '16), Columbia University, New York (refereed), USA.

3. Towards an Account of Rich Situated Semantic Content: *Cognitive Structures: Linguistic, philosophical, and psychological persepctives (CoSt 16)*, Heinrich-Heine-University, Düsseldorf (refereed), Germany.

4. Evidence for Single-Type Semantics – An alternative to e/t-based dual-type semantics: Sinn und Bedeutung 21, University of Edinburgh (refereed; poster presentation), UK.

s) Dr. Sebastian Lutz

1. Type of Affiliation with the MCMP

Sebastian Lutz was Postdoctoral Fellow at the MCMP in 2016 and is now Senior Lecturer in Theoretical Philosophy at Uppsala University and remains an external member of the MCMP.

2. Research Projects

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

3. Academic Output

Publications:

(201x): What Was the Syntax-Semantics Debate in the Philosophy of Science About? *Philosophy and Phenomenological Research*. DOI:10.1111/phpr.12221.

(2017): Editorial. *The Reasoner*, March (forthcoming).

(2017): Interview with Reinhard Muskens. *The Reasoner*, March (forthcoming).

(2016): Carnap on Empirical Significance, *Synthese*, 194(1): 217–252. DOI:10.1007/s11229-014-0561-8.

Presentations:

1. Philosophical Methodologies and Philosophical Methods. The Philosophical Society in Uppsala. Uppsala University, Sweden, 2 November 2016.

2. Naturalizing Armchair Philosophy. Topics in Ontology and Metaontology. Uppsala University, Sweden, 12–13 September 2016.

3. Analyticity and Vagueness in the Semantics of the Received View. *The Semantics of Theories*. Ludwig-Maximilians-Universität München, Germany, 23-25 June 2016.

4. Armchair Philosophy Naturalized. Philosophical Methods. Institute for Advanced Studies in the Humanities, Essen, 16–17 June 2016.

5. Newman's Objection is Dead, Long Live Newman's Objection! Higher Seminar in Theoretical Philosophy. Uppsala University, Sweden, 10 March 2016.

6. Newman's Objection is Dead, Long Live Newman's Objection! Philosophy of Science Colloquium. Institute Vienna Circle, Universität Wien, Austria, 22 January 2016.

Further Activities:

Instructor: *Philosophy of Physics Survey Course*. Advanced seminar.

Editor: Alternatives to Scientific Realism, PhilPapers.org.

Curator: Reduction and Emergence. Annotated collection of talks. URL: http://rforge.com/lmucast/curatedcollections/?ccid=lz84px

Reviewer: *Acta Analytica; HOPOS: The Journal of the International Society for the History of Philosophy of Science; Mind; Minds and Machines; Synthese*.

Organizer (with Erik Curiel): *The Semantics of Theories*. Ludwig-Maximilians-Universität Munich, Germany, June 2016.

Member of the program committee: *Annual Meeting of the British Society for the Philosophy of Science*, University of Edinburgh, United Kingdom, 2017.

Member of the program committee: *Ninth European Congress of Analytic Philosophy* (ECAP 9), Ludwig-Maximilians-Universität Munich, Germany, 2017.

Member of the program committee: *MuST9: Evidence, Inference, and Risk*, Ludwig-Maximilians-Universität Munich, Germany, 2016.

Member of the program committee: *Infinite Idealizations in Science*, Ludwig-Maximilians-Universität Munich, Germany, 2016

Member of the program committee: *2nd Munich Graduate Workshop in Mathematical Philosophy: Formal Epistemology*, Ludwig-Maximilians-Universität Munich, Germany, 2016

Member of the program committee: *The Semantics of Theories*. Ludwig-Maximilians-Universität Munich, Germany, 2016.

t) Dr. Aidan Lyon

1. Type of Affiliation with the MCMP

Aidan Lyon was a Visiting Fellow on his Alexander von Humboldt Research Stipend, one of several research stays since the start of the fellowship in 2014.

2. Research Projects

He works to research into collective wisdom and the foundations of imprecise probabilities.

3. Academic Output

(201x): Collective Wisdom, *Journal of Philosophy.*

(201x): Open-Intelligence Gathering and Analysis for Biosecurity. In: T. Walshe (ed.), *Risk-Based Decisions for Biological Threats*, together with G. Grossel and A. Nunn.

(201x): Common Standards can Diminish Collective Intelligence: A Computational Study, *Journal of Evaluation in Clinical Practice* —

special issue on Philosophy of Medicine, together with Michael Morreau.

(2016): Data, *Handbook of the Philosophy of Science,* P. Humphreys (ed.), Oxford University Press.

(2016): Kolmogorov's Axioms and its Discontents. In: A. Hajek and C. Hitchcock (eds.), *The Oxford Handbook of Probability and Philosophy*.

(2016): Vague Credence, *Synthese*

u) Christoph Merdes

1. Type of Affiliation with the MCMP

Christoph Merdes is a doctoral student under the supervision of Stephan Hartmann.

2. Research Projects

Christoph Merdes has been working in Social Philosophy, Collective Rationality, the Application of Simulation Models to Philosophical Questions and the Philosophy of Simulation.

3. Academic Output

(201x): Normative Simulations: Robustness and Interventions.

(201x): The Kinetics of Opinion.

(201x): Growing Unpopular Norms, under copy editing.

Presentations:

1. The Evolution of Unpopular Norms on a Social Network: at the Jahrestreffen des DFG-Programms „New Frameworks of Rationality" in Etelsen, Germany.

2. Persons as Particles: The Microfoundations of Opinion Dynamics: at the workshop *The Physics of Society: Philosophy of Econophysics and Complex Social Systems*. Munich, Germany.

3. Normative Simulations: at the workshop *Agent Based Modeling and Simulation* in Bamberg, Germany.

v) Dr. Barbara Osimani

1. Type of Affiliation with the MCMP

Assistant Professor at MCMP

2. Research Projects

Causal inference in pharmacology, Bayesian epistemology, Evidence synthesis, Philosophy of Statistics.

3. Academic Output

Publications:

(201x): Methodological Implications of the Variety of Evidence Thesis. *Synthese*, Special Issue "Medical Knowledge in a Social World", Holman, B., Garbayo, L., and Bernecker, S (eds.), together with Jürgen Landes.

(201x) A Protocol for Model Validation and Causal Inference from Computer Simulation. In: Annamaria Carusi, Kevin Burrage (eds.):

Biomedical Computational Sciences. Progress in Biophysics and Molecular Biology, together with Roland Poellinger.

(201x) Epistemology of Causal Inference in Pharmacology: Towards a Framework for the Assessment of Harms. Forthcoming in *European Journal for Philosophy of Science*, together with Jürgen Landes and Roland Poellinger.

(201x) A Multilayer Approach to Modeling Probabilistic Causal Inference through Evidence Synthesis. In: Osimani B., La Caze A. (eds.) *Uncertainty in Pharmacology: Epistemology, Methods and Decisions*. Springer: Boston Series in Philosophy of Science.

(201x) Uncertainty in Pharmacology: Epistemology, Methods and Decisions. Springer Series "Boston Studies in Philosophy of Science", editorial (with Adam La Caze).

(201x) Coherence, Consistency, and Causal inference. In Special Issue on "Evidence Amalgamation", *Synthese*; edited by Samuel Fletcher, Jürgen Landes and Roland Poellinger.

(201x) Behavioral Circumscription and the Folk Psychology of Belief: A Study in Ethno-Mentalizing (THT.20170034) submitted by Mr. David Rose to *Thought: A Journal of Philosophy* (collective publication within Intellectual Humility Project, Steven Stich).

(201x) Nothing at Stake in Knowledge (NOUS-2016-10-0259), submitted by Mr. David Rose to the *Noûs* (collective publication within Intellectual Humility Project, Steven Stich).

In preparation:

(201x) De pulchritudine non est disputandum? A cross-cultural investigation of the alleged intersubjective validity of aesthetic judgment (collective publication within Intellectual Humility Project, Steven Stich).

(201x) In Silico Clinical Trials and RCTs: reciprocal validation?, together with Bertolaso, M., Nardini, C., Poellinger, R..

(201x) The Meaning of Meta-Analyses.

Presentations:

1. A Multilayer Approach to Modeling Probabilistic Causal Inference through Evidence Synthesis: *Drug Safety, Probabilistic Causal Assessment, and Evidence Synthesis*, Munich 27-28 January 2017.

2. A framework for evidence amalgamation for the purpose of drug safety assessment: London, European Medicines Agency, 24th November 2016.

3. Exact replication or varied evidence? Reliability, robustness and the reproducibility problem: London, LSE, 22nd November 2016.

Bristol, 21st November 2016.

4. Coherence and Confirmation in Probabilistic Causal Inference: *MCMP Summer School on Mathematical Philosophy for Female Students*, 27th July 2016, Munich.

5. The Meaning of Meta-Analyses vs. Mixed Methods in Medicine: *8th Workshop on the Philosophy of Information*. Ferrara, 13-14 June 2016.

6. The epistemology of Causal Inference in Pharmacology: Evidence, Inference, and Risk – *MuST9* conference. 31st March – 2nd April 2016.

7. The Meaning of Meta-Analyses. Medical Knowledge in a Social World: University of California Irvine, 28-29 March 2016.

8. Philosophy of Pharmacology: Safety, Statistical Standards, and Evidence Amalgamation: *3rd Winter Symposium of the "Human Motion Project"*. TUM, Munich, March 11, 2016.

9. Coherence, Consistency, and Causal Inference*: 8th Workshop on the Philosophy of Information*. Ferrara, 13-14 June 2016.

w) Patricia Palacios

1. Type of Affiliation with the MCMP

Patricia Palacios has been an MCMP Doctoral Fellow since November 2014.

2. Research Projects

Patricia Palacios has been working on topics concerning general philosophy of science and philosophy of physics. Her current projects include: analyzing the reducibility of phase transitions, investigating the role of infinite idealizations in physics, analyzing the import of physical models to economics, studying the notion of universality.

3. Academic Output

Publications:

(2016): Book review of "Chance and Temporal Asymmetry", by Alastair Wilson, *International Studies in the Philosophy of Science* (forthcoming).

In preparation:

(201x): Phase Transitions: A challenge for reductionism?

(201x): Market Crashes as Critical Phenomena? Explanation, Idealization, and Universality in Econophysics, with Jennifer Jhun and James Owen Weatherall. (Submitted to *Synthese*).

(201x): Is Universality Multiply Realizable?, with Karim Thebault.

(201x): Had We But World Enough, and Time: Justifying the Thermodynamic and Infinite-Time Limits in Statistical Mechanics.

Presentations:

1. Symmetry-breaking phase transition: A challenge for reductionism?: Invited talk at the Paris Centre for Quantum Computing, University Paris-6, December 2016, Paris, France.

2. Emergence and Reduction in Physics: Invited talk at the Universidad de Buenos Aires, October 2016, Buenos Aires, Argentina.

Invited talk at the Summer School in Mathematical Philosophy for Female Students, July 2016, Munich, Germany.

3. Giving Econophysics a Chance: On the Plausibility of Modeling Stock Market Crashes as Critical Phase Transitions: Physics of Society

Workshop, July 2016, Munich, Germany, together with Jennifer Jhun and James Weatherall.

Infinite Idealizations in Physics, June 2016, Munich, Germany.

4. Phase Transitions: A challenge for reductionism or for 'Nagelianism'?: *Foundations of Physics*, LSE, July 2016, London, UK.

5. The Role of Approximation in a Reductive Explanation for Phase Transitions: *Irvine-Princeton-Pittsburgh Conference*, April 2016, Pittsburgh, USA.

Invited talk at the University of California, March 2016, San Diego, USA.

Invited talk at the University of California, January 2016, Irvine, USA.

Workshop *Reduction in Physics and Biology*, January 2016, Santiago, Chile.

Invited talk at the University of Oxford, Oxford, UK, October 22

Effective Theories, Mixed Scale Modeling, and Emergence, October 2016, Pittsburgh, USA.

Further Activities:

Conference main Organizer *Reduction in Physics and Biology*, Santiago, Chile, January 2016.

Conference Co-Organizer, *Infinite Idealizations in Science*, Munich, June 2016.

x) Dr. Roland Poellinger

1. Type of Affiliation with the MCMP

Roland Poellinger is a postdoctoral researcher with Dr. Barbara Osimani's ERC project "Philosophy of Pharmacology" (since 1 October, 2015).

2. Research Projects

Roland Poellinger has been working in General Philosophy of Science and Formal Epistemology with a special focus on formal theories of causation and their application.

3. Academic Output

(2016) Poellinger, Roland. Moralisches Entscheiden in Künstlichen Systemen. In: Lutz, Klaus & Roland Bader (eds.): *Internet der Dinge*. merz | medien + erziehung 4/2016 , kopaed Verlag.

(201x): Epistemology of Causal Inference in Pharmacology. Forthcoming in *EJPS*, together with Jürgen Landes and Barbara Osimani.

(201x): Analogy-Based Inference Patterns in Pharmacological Research. Under review for: Osimani, Barbara & Adam La Caze (eds.): *Uncertainty in Pharmacology: Epistemology, Methods, and Decisions.* Boston Studies in Philosophy of Science. Springer.

(201x): Causal Inference from Computer Simulation: A Protocol for Model Validation. Under review for: Carusi, Annamaria, Blanca Rodriguez, Kevin Burrage (eds.): *Validation and Models in Computational Biomedical Science*. Progress in Biophysics and Molecular Biology, together with Barbara Osimani.

In preparation:

(201x): Bayesian Confirmation by Analogy, together with Cameron Beebe.

(201x) Making Sense of Attenuated Mechanism Function Toward Explaining the Effects of Pharmacological Intervention, together with Alexander Mebius.

(201x): Special Issue: Evidence Amalgamation in the Sciences, together with Samuel C. Fletcher and Roland Poellinger.

Presentations:

1. Confirmation via In Silico Simulation: *9th Munich–Sydney–Tilburg Conference in Philosophy of Science on Evidence, Inference, and Risk, MuST 9* (2016), LMU Munich, Germany, March/April 2016.

2. Bayesian Confirmation from Analog Models: conference on *Models and Simulations 7 (MS7)*, University of Barcelona, Spain, May 2016, together with Cameron Beebe.

International workshop on *Reasoning in Physics*, Center for Advanced Studies (CAS), LMU Munich, Germany, December 2016.

3. Variable Entanglement in Bayes Net Causal Models: (poster), conference on *Conditional Independence Structures and Extremes (2016)*, Chair of Mathematical Statistics, Technical University of Munich (TUM), Germany, October 2016.

Further Activities:

Starting in October 2015, Roland Poellinger co-organized the cross-faculty program *Formal(isiert)es Denken und empirisches Argumentieren*, (w/ Prof. Dr. Thomas Augustin, statistics department), co-funded by Lehre@LMU; in this lecture series, Roland Poellinger gave the lecture *Zusammenhänge präzisieren im Modell* (on the syntax and semantics of formal models). The series had two further editions in 2016 (April and October).

In 2016, Roland Poellinger was teaching the following seminars:

1. *Philosophy of Causality* – in English (co-teaching with Barbara Osimani), seminar (2016/summer semester)
2. *Formal Epistemology* – in English (co-teaching with Barbara Osimani), seminar (2016/winter semester)

He organized the reading group on Foundations of Statistics as joint reading group with the working group on *Method(olog)ische Grundlagen der Statistik und ihre Anwendungen* (from October 2015 on). This reading group also contributed to the preparation of Glenn Shafer's visit in spring 2016. Roland Poellinger also helped organizing the project's first focus group meeting on 30. March, 2016, as well as the conference *MuST 9: Evidence, Inference, and Risk*, 31. March-2.April, 2016 at LMU.

Roland Poellinger was invited to the "Forum for Artificial Intelligence Research" at the University in Stellenbosch (South Africa) in November/December 2016 (organized by the *Center for Artificial Intelligence Research - CAIR*). He give a compact advanced seminar on *De/Encoding Cause and Effect* (on Bayesian networks and causal graphs, the interventionist account of causality, causal decision theory, events and causal paradox, causal hypotheses and evidence amalgamation).

Roland Poellinger is an associate member of the Graduate School for Philosophy at the University of Pécs, Hungary. In 2016, Roland Poellinger was a member of the program committees for the *Munich–Sydney–Tilburg Conference 2016* (Munich) and the *2nd Munich Graduate Workshop in Mathematical Philosophy 2016* (Munich). On occasion of the MCMP's 5-year anniversary, he gave the talk *Five Years MCMP: Looking Back (Five Years of Science Communication)* (at the symposium *Five Years MCMP: Quo Vadis, Mathematical Philosophy?*, June 2016).

y) Dr. Alexander Reutlinger

Dr. Alexander Reutlinger

1. Type of Affiliation with the MCMP

Alexander Reutlinger is an Assistant Professor at the Chair of Philosophy of Science.

2. Research Projects

His research was focused on the following areas in philosophy of science: (i) non-causal explanations, (ii) ceteris paribus laws, (iii) the relation between emergence, explanation and idealisation, and (iv) philosophy of econophysics.

3. Academic Output:

Publications:

(2016): Rethinking Scientific Explanation. Explanation Beyond Causation. Habilitation, LMU Munich, submitted in November.

(2016): Is There A Monist Theory of Causal and Non-Casual Explanations? The Counterfactual Theory of Scientific Explanation. *Philosophy of Science* 83: 733-745.

(2016): Does the Counterfactual Theory of Explanation apply to Non-Causal Explanations in Metaphysics?. *European Journal for Philosophy of Science,* DOI:10.1007/s13194-016-0155-z.

(2016): Do Renormalization Group Explanations Conform to the Commonality Strategy?. *Journal for General Philosophy of Science,* DOI 10.1007/s10838-016-9339-7.

(2016): Warum Atheisten den methodologischen Atheismus nicht brauchen. *Zeitschrift für philosophische Forschung* 70: 550-561.

(2016): Just Playing? Toy Models in the Science. *Jahresbericht der Münchner Universitätsgesellschaft.*

(201x): Explanation Beyond Causation. Oxford University Press (under contract), together with Saatsi, J..

(201x): Abstract versus Causal Explanations?. *International Studies in the Philosophy of Science*, together with Andersen, H..

(201x): Extending the Counterfactual Theory of Explanation. A Monist Account of Causal and Non-Causal Explanations. In: A. Reutlinger and J. Saatsi (eds.), *Explanation Beyond Causation*, Oxford: Oxford University Press.

(201x): Understanding (With) Toy Models. *The British Journal for the Philosophy of Science*, together with Hangleiter, D. and Hartmann, S..

(201x): Modeling Inequality. *The British Journal for the Philosophy of Science*, together with Thébault, K. and Bradley, S..

(201x): Review of Marc Lange's Because Without Cause. *Notre Dame Philosophical Reviews*.

(201x): Review of Margaret Morrison's Reconstructing Reality: Models, Mathematics and Simulations. *The British Journal for the Philosophy of Science*, together with Hartmann, S..

(201x): Taking Explanation to the Limit. Anti-Reductionism and Renormalization Group Explanation. *Philosophy of Science*, together with Saatsi, J..

Presentations:

1. Why Isn't There More Agreement in Philosophy?: November 2016, *Münchner Philosophisches Kolloquium*, LMU Munich.

2. Non-Causal Aspects of Scientific Explanation: May 2016, *The Emergence of Relativism Project*, University of Vienna.

3. What Makes Non-Causal Explanations Explanatory?: February 2016, Philosophical Colloquium, Central European University (Budapest).

4. Understanding With Toy Models: July 2016, Annual Meeting of the British Society for Philosophy of Science (BSPS), Cardiff University.

5. Taking Explanation to the Limit. Anti-Reductionism and Renormalization Group Explanation: June 2016, *Infinite Idealizations in Science*, Munich Center for Mathematical Philosophy.

6. Is There a Monist Theory of Causal and Non-Causal Explanations: March 2016, GWP 2016, Düsseldorf.

Further Activities (2015 and upcoming):

Organizer of the Jerusalem-Munich Workshop *Explanation and Reduction in the Sciences* (March 2017), The Hebrew University of Jerusalem (Edelstein Center for History and Philosophy of Science, Technology and Medicine); co-organizers: Stephan Hartmann and Orly Shenker.

Organizer of the Jerusalem-Munich Workshop *Explanation in Science and Mathematics* (February 2017), Munich Center for Mathematical Philosophy (MCMP); co-organizers: Stephan Hartmann and Orly Shenker.

Organizer of the workshop *The Physics of Society. Philosophy of Econophysics and Complexity Social Systems* (July 2016), Munich Center for Mathematical Philosophy (MCMP); co-organizers: Seamus Bradley, Meinard Kuhlmann, and Karim Thébault.

Member of the Program Committee of the conference *Semantics of Theories* (June 2016), Munich Center for Mathematical Philosophy (MCMP).

Member of the Program Committee of *Models and Simulations 7* (May 2016), Universitat de Barcelona.

z) Dr. Reuben Stern

1. Type of Affiliation with the MCMP

Reuben Stern is a postdoctoral fellow at the MCMP.

2. Research Projects

Reuben Stern has been working in General Philosophy of Science, Epistemology, and Decision Theory. He is a member of the DFG project, *Inferentialism, Bayesianism, and Scientific Explanation*.

3. Academic Output

Publications:

(2016): Interventionist Decision Theory, *Synthese*. doi:10.1007/s11229-016-1133-x

(201x): The Frugal Inference of Causal Relations, together with Malcolm Forster, Garvesh Raskutti, and Naftali Weinberger. To appear in *The British Journal for the Philosophy of Science.*

(201x): A Causal Understanding of When and When Not to Jeffrey Conditionalize, together with Ben Schwan. To appear in *Philosophers' Imprint*.

(201x): Diagnosing Newcomb's Problem with Causal Graphs. To appear in A. Ahmed (ed.) *Newcomb's Problem (Classic Philosophical Arguments)*, Cambridge, UK: Cambridge University Press.

(201x): Causal Explanatory Power, together with Benjamin Eva. Under review at *Philosophy of Science*.

(201x): Decision and Intervention. Under review at *Erkenntnis*.

(201x): Is There a General Counterfactual Semantics that Can Accommodate Interventionist Counterfactus? Under review at *Australasian Journal of Philosophy.*

Presentations:

1. An Interventionist's Guide to Choice: Jinan Universtiy, Zhuhai, China, November 2016.

MCMP Summer School on Mathematical Philosophy for Female Students, Munich, Germany, July 2016.

2. A Causal Understanding of When and When Not to Jeffrey Conditionalize: 2016 Formal Epistemology Workshop, Groningen, Netherlands, June 2016.

ä) Pascal Ströing

1. Type of Affiliation with the MCMP

Pascal Ströing is doctoral student under supervision of Stephan Hartmann. He holds a dissertation scholarship from the *Studienstiftung des deutschen Volkes*.

2. Research Projects

His dissertation project focusses on questions from General Philosophy of Science with argumentations that are based on exemplary investigations from different scientific fields and mathematical explications.

3. Academic Output

Publications:

In preparation:

(201x): New Insights on the Metaphysics of Phenomena and Patterns in Data.

(201x): Data, Evidence and Explanatory Power.

Presentations:

1. Inference from data to evidence and measures of explanatory power: Work-in-Progress talk, MCMP, Munich, Germany.

Further Activities:

Teaching assistant for Bachelor's course: *Einführung in die Wissenschaftstheorie.*

ö) Dr. Giovanni Valente

1. Type of Affiliation with the MCMP

Giovanni Valente is the recipient of a Humboldt Fellowship for Experienced Researchers. He is also an Assistant Professor in the Department of Philosophy at University of Pittsburgh (USA).

2. Research Projects

Giovanni Valente has been working in General Philosophy of Science, Philosophy of Physics and Philosophy of Climate Science.

3. Academic Output

Publications:

(2016): Causalità Relativistica. Problemi filosofici all'incontro di teoria dei quanti e relatività ristretta, MIMESIS editore.

(201x): On the way to the Limit: The Mistery of Quantum Phase Transitions, commissioned for a Special Issue of *Synthese.*

In preparation:

(201x): On the Paradox of Reversible Processes in Thermodynamics, under review.

Presentations:

1. Relativistic Causality and Local Disentanglement in Quantum Field Theory: Università di Ferrara, Italy, September 2016.

Further activities:

Organization of Workshops and Conferences

Conference: *Fourth Irvine-Pittsburgh-Princeton Conference on the Mathematical and Conceptual Foundations of Physics*, Co-organizer (with Nora Boyd, Hans Halvorson, John Norton and Jim Weatherall), Pittsburgh, USA, March 2016.

Workshop: *Field Theories*, Co-organizer (with Nora Boyd, Hans Halvorson, John Norton and Jim Weatherall), Pittsburgh, USA, March 2016.

Workshop: *Symmetry and Symmetry Breaking in Physics*, Co-organizer (with Alexei Grinbaum), Paris, France, December 2016.

ü) Dr. Dr. Momme von Sydow

1. Type of Affiliation with the MCMP

Momme von Sydow is Senior Research Fellow at the MCMP; the scholarship is mainly funded by Ulrike Hahn´s Anneliese Maier Research Award from the Alexander von Humboldt Foundation located at the MCMP (Prof. Hartmann).

2. Research Projects

Momme von Sydow has a background both in philosophy and psychology, and has been working in Bayesian Epistemology,

Psychology of Reasoning, Logic and Induction, Bayesian Modelling of judgment and reasoning 'fallacies', Philosophy of Biology and Social Psychology. One project at the MCMP is developing and testing "Bayesian logic", an inductive intensional logic with a good fit to actual human predications and probability judgments. Another project concerns applying and testing rational Bayesian models of source reliability to perhaps irrational implications on the group level (group polarization).

3. Academic Output

Publications:

(2016): Towards a Pattern-Based Logic of Probability Judgements and Logical Inclusion "Fallacies". *Thinking & Reasoning, 22*(3), 297-335. doi:10.1080/13546783.2016.1140678.

(2016): Transitive Reasoning Distorts Induction in Causal Chains. *Memory & Cognition, 44*(3), 469-487. doi:10.3758/s13421-015-0568-5, together with York Hagmayer and Björn Meder.

(2016): On the Tragedy of Personnel Evaluation. In A. Papafragou, D. Grodner, D. Mirman, & J.C. Trueswell (Eds.), *Proceedings of the Thirty-Eighth Annual Conference of the Cognitive Science Society* (pp. 105-110). Austin, TX: Cognitive Science Society, together with Braus, N.

Presentations:

1. On Learning, Predication, and Causal Distortion Effects: Kolloquium, Prof. Dr. Jan de Houwer, Ghent University, Belgien, November, 8 (invited talk).

2. Intensionale Wahrscheinlichkeitsurteile bei einfachen Aussagen – Zur Vernunft jenseits enger Rationalitätsnormen: *50. Kongress der Deutschen Gesellschaft für Psychologie*, Leipzig, September, 18 – 22 (talk).

3. Coherence-Based vs. Correspondence-Based Induction of Causal Chains: *50. Kongress der Deutschen Gesellschaft für Psychologie*, Leipzig, September, 18 – 22 (talk), together with York Hagmayer and Björn Meder.

4. Altruistenerkennung und pessimale Urteile in Personalevaluation und Personalauswahl: *50. Kongress der Deutschen Gesellschaft für Psychologie*, Leipzig, September, 18 – 22 (poster), together with Niels Braus.

5. On the Tragedy of Personnel Evaluation. *Thirty-Eighth Annual Meeting of the Cognitive Science Society*, Pittsburg, USA, August, 10 – 13 (poster), together with Niels Braus.

6. Intensional Probability Judgments and Inclusion Fallacies With Generics. *Thirty-Eighth Annual Meeting of the Cognitive Science Society*, Pittsburg, USA, August, 10 – 13 (poster).

7. On Causal Induction and a Local-Optimization Bias in Inner-Individual Dilemmas. Kolloquium, Prof. Dr. Gideon Keren, Department of Social Psychology. Tilburg, Netherlands, April, 15 (invited talk).

8. How Causal Reasoning Can Distort the Evidence – New Studies. *MuST 9: Evidence, Inference, and Risk*. LMU, Munich Center for Mathematical Philosophy, Munich: 31 March – 2 April (talk), together with Dennis Hebelmann.

9. On Inner-Organizational Dilemmas Of Personnel Evaluation. On the Intensional Inductive Logics of Generics with Non-Dichotomous Predicates: *MuST 9: Evidence, Inference, and Risk*. LMU, Munich Center for Mathematical Philosophy, Munich: 31 March – 2 April (talk), together with Dennis Hebbelmann.

10. On the Tragedy of Personnel Evaluation Dilemmas: *58. Tagung experimentell arbeitender Psychologen (TeaP)*, Heidelberg, Germany, March, 21 – 23 (talk), together with Niels Braus.

11. New Findings on Intransitive Chains and Distorted Betting Decisions: *58. Tagung experimentell arbeitender Psychologen (TeaP)*, Heidelberg, Germany, March, 21 – 23 (talk), together with Dennis Hebbelmann.

12. Systematic Logical Inclusion Fallacies within Single Polytomous Dimensions: *58. Tagung experimentell arbeitender Psychologen (TeaP)*, Heidelberg, Germany, March, 21 – 23 (talk).

13. On Narrow Norms of Rationality: Universität Witten-Herdecke, Department für Psychologie / Psychotherapie, Witten, Germany, 14.1.2016 (invited talk).

14. Leib-Seele-Problem: Universität Witten-Herdecke, Department für Psychologie / Psychotherapie, Witten, Germany, 14.1.2016 (invited talk).

ß) Dr. Gregory Wheeler

1. Type of Affiliation with the MCMP

Gregory Wheeler is an Assistant Professor at the Chair of Philosophy of Science.

2. Research Projects

Gregory Wheeler works on foundations of probability, formal epistemology, bounded rationality, philosophy of science, and agent based modeling.

3. Academic Output

Publications:

(201x): Resolving Peer Disagreements Through Imprecise Probabilities, *Nous*, together with Lee Elkin.

(201x): Machine Epistemology and Big Data, in Lee McIntyre and Alex Rosenberg (Eds.) *The Routledge Companion to Philosophy of Social Science*, in press.

(2016): Scoring Imprecise Credences: A Mildly Immodest Proposal. *Philosophical and Phenomenological Research*, 93(1): 55-78.together with Conor Mayo-Wilson.

Presentations:

1. An Introduction to Machine Epistemology: Diaphora Network Workshop on Logic and Paradox, Carl-Freidrich-von-Stiftung, Munich, Germany, December 2016

2. Commitments and Consequences: University of Bayreuth, Germany, December 2016.

Conceptions of Belief in Philosophy and Science, University of Regensburg, Germany, September 2016.

3. If it Works for One, What about Two?: University of Bayreuth Colloquium, Germany, December 2016.

The Max Planck Institute for Human Development, Berlin, Germany, October 2016.

4. Lessons from the Ash Heap of Logical AI, *The Relevance of Logic to Human Reasoning*, LMU Munich, Germany, November 2016.

5. How Free Information Can Cost You, Frankfurt School of Finance and Management, Frankfurt, Germany, October 2016.

The 2016 *LMU Graduate School in Systemic Neuroscience Retreat*, Germany, September 2016.

6. Mispriced Gambles: What Peers Learn When They Disagree: Social Choice and its Philosophical Applications, Venice International University, Venice, Italy, October 2016.

Formal Social Epistemology Conference, Columbia University, New York, USA, April 2016.

7. Epistemic Hazard and Moral Gambles: Decision *Theory, Imagination, and Transformative Experience*, Arche, University of St Andrews, UK, June 2016.

8. Making Moral Gambles: Comments on Zollman's Kantian Decision Theory: *FEW 2016*, University of Groningen, The Netherlands, June 2016.

9. An Introduction to Imprecise Probabilities: *2nd Munich Graduate Workshop in Mathematical Philosophy: Formal Epistemology*, Munich, Germany, April 2016.

10. Dilation and the Value of Information: *5th Annual Meeting of the SPP1516 New Frameworks of Rationality*, Etelsen, Germany, March 2016.

Further Activities:

Gregory Wheeler is a member of the editorial boards of *Synthese* and *Minds and Machines*.

Gregory Wheeler serves as At-Large Member of the *Society for Imprecise Probability: Theory and Applications* (SIPTA) Executive Committee.

He was a member of the Program Committee for

1. *New Trends in Rational Choice Theory*, MCMP Conference Series, 2016
2. *Formal Epistemology Workshop (FEW 2016)*, Groningen, 2016
3. *Munich-Sydney-Tilburg (MuST 2016),* Munich 2016.

Gregory Wheeler taught *Formal Methods II: Models and Simulations* and *Models of Belief and Decision* (S 2016), and introduced a new course, *Machine Epistemology* (W 2016).

Gregory Wheeler is co-supervising the following PhD students: Lee Elkin, Christoph Merdes, and Gasper Stukel.

He supervised Pia Schneider's MA thesis in Logic and Philosophy of Science. Pia is now a PhD student in philosophy at University of California at Berkeley.

He was co-coordinator of the MA program in Logic and Philosophy of Science.

He was a member of the LMU Graduate School for Neuroscience PhD selection committee

α) Dr. Johanna Wolff

1. Type of Affiliation with MCMP

Humboldt Fellow on an Experienced Researcher Scheme (Oct 2015 – Dec 2015)

2. Research Projects

J. Wolff's research specialization is philosophy of science, with special emphasis on the philosophy of physical science and the metaphysics of science. Main current research project: a book on the metaphysics of quantities.

3. Academic Output

Publications:

(201x) Naturalistic quietism or scientific realism? *Synthese*, First online: September 2015.

(2016): Using defaults to understand token causation. *Journal of Philosophy (113 (1):5-26 (2016)*

(201x): Heaps of moles? – Mediating macroscopic and microscopic measurement of chemical substances. *Studies in History and Philosophy of Science* (*under review*).

Presentations:

1. From microscopic to macroscopic: Philosophy of Science Association Biennial Meeting, Atlanta, USA, Nov 2016.

2. The curious case of the mole: Metaphysics of Science Society, Geneva, Switzerland, Sep 2016.

3. Why did additivity cease to be a central element in the theory of measurement: BSPS Annual Meeting, Cardiff, UK, July 2016.

4. Sums no more - The changing role of additivity in measurement theory: &HPS6, University of Edinburgh, UK, July 2016.

(V) We also hosted several visitors and visiting fellowships:

The MCMP is regularly hosting visitors: this includes our recurring Visiting Professors, scholars who are spending their sabbaticals at the Center, and visiting postdocs and students. In addition we introduced a visiting fellowship scheme by application for postdocs and faculty (senior), advanced PhD students (junior) or a group of two to four researchers which may also include scientists (research group) to come and visit the MCMP on our funding for a month during the academic year. This is the list of visitors at the MCMP and invited by the chair of philosophy if science during the period from January to December 2016:

Margaret Morrison (University of Toronto)	01.01.2016 - 31.07.2016
Bennett Holman (Yonsei University)	07.01.2016 - 29.02.2016
Holger Lyre (University of Magdeburg)	25.01.2016 - 05.02.2016
Brian Hedden (University of Sydney)	31.02.2016 - 27.02.2016
Andrew Buskell (University of Cambridge)	01.04.2016 - 30.04.2016
Francesca Biagioli (University of Konstanz)	15.04.2016 - 15.05.2016
Jakub Szymanik (University of Amsterdam)	15.04.2016 - 15.05.2016
Nina Gierasimczuk (University of Amsterdam)	15.04.2016 - 15.07.2016

Aleks Knoks (University of Maryland)	15.05.2016 - 15.07.2016
Andreea Eşanu(New Europe College, Bucharest)	01.06.2016 - 30.06.2016
Juliusz Doboszewski (Jagiellonian University)	01.06.2016 - 13.07.2016
Neil Dewar (University of Oxford)	01.06.2016 - 30.06.2016
Collin Rice (Lycoming College)	10.06.2016 - 10.07.2016
Baris Bagci (TOBB University of Economics and Technology)	30.08.2016 - 11.09.2016
Ulrich Stegmann (University of Aberdeen)	02.10.2016 - 29.10.2016
Marco Giovanelli (Universität Tübingen)	15.10.2016 - 15.12.2016

a) Margaret Morrison

Margaret Morrison visited the MCMP from Jan. 5th 2016 until July 15, 2016 with funding from the Alexander von Humboldt (and Siemens) foundation. During her time in Munich she was working on a couple of interrelated things but the primary focus of her research was trying to understand how the problem of turbulence (one of the outstanding problems in modern physics) fits into philosophical discussions related to emergence and multi-scale modelling. Turbulence appears to have many of the characteristics that we associate with emergent behaviour (e.g. non-linearity, among others), and it is a phenomenon that displays scaling properties, yet it seems not to fit easily into the category of emergence or the type of phenomena treated with multi-scale modelling. Renormalization group techniques which are used to treat many instances of emergent phenomena in other areas of physics are difficult to apply in cases of turbulence because the requisite type of scaling behaviour is not present. Hence, turbulence presents a problem not only for computational fluid dynamics but also for any kind of philosophical characterization that focuses on emergence. What this suggests is that we need to be cautious about identifying emergence simply with non-linear behaviour since the latter needn't imply the former. On this work, there are several papers that can be named as a result: "The Non-causal Character of Renormalizaton Group Explanations" A. Reutlinger and J. Saasti (eds.) Explanation Beyond Causation. Oxford University Press (forthcoming); "Models, Modelling and the Stanford School" Special Issue of Synthese. (forthcoming); "Multi-dimensional modelling and the problem of turbulent flows" Synthese (forthcoming). Margaret also presented her ideas at the following occasions: "Universality and Nonlinearity: Emergence in Physical Systems", Concluding conference for the Templeton Emergence Project, University of Durham, Durham UK. April 11-22, 2016; "Infinite Idealisations and Cross-over Methods" Conference on Infinite Idealisations, LMU, June 2016; "Building Theories: Strategies not Blueprints" Conference on Theory Building, University of Rome, La Sapienza, June 2106; "More Problems for Perspectivism" Conference on Perspectival Realism, University of Edinburgh, July 2016; Invited: "Understanding the Role of Fictional Models" IHPST Paris, Jan. 2016; "Emergence, Unversality and Turbulence" LMU Munich, Feb. 2016; "Models as Fictions vs. Fictional Models: Disentangling the Difference" University of Hannover, May 2016. Furthermore she regularly attended the late afternoon-evening talks at MCMP and interacted with the other fellows. She also met fairly often with some of the postdocs and other

visitors to discuss topics of common interest but also to advise some of the postdocs on career related issues. During her time at the MCMP Margaret also attended many of the conferences at the Centre and met quite frequently with Stephan Hartmann.

b) Bennett Holman

Bennett Holman visited the MCMP 07.01.2016 - 29.02.2016 on his own personal funding. During that time he completed a co-authored (w/ Justin Bruner) paper on how industry funding can affect a scientific community without biasing any particular individual. The paper was presented at the Philosophy of Science Bi-annual Conference, Atlanta; the International Conference on Applied Ethics, Sapporo, Japan; and the The Science of Evolution and Evolution of the Sciences, Leuven, Belgium already. Furthermore it is forthcoming for publication in *Philosophy of Science*.

c) Holger Lyre

Holger Lyre visited the MCMP 25.1.-5.2.2016 on MCMP funds. While at the Center his research focused on the exploration of the prospects of two of his ongoing research projects. The first is Dynamics, Structure and Mechanisms in Neuroscience: here he develops and defends four theses about the relationship between dynamical and mechanistic explanations: that dynamical explanations are essentially structural, that they are multiply realizable, possess realizing mechanisms and provide a powerful top-down heuristic. He finally develops the picture of “horizontal” and “vertical” directions of explanation to illustrate the two different perspectives of the dynamical and the mechanistic approach. The second is Neural coding as an empirical problem: What is the sytax of the neural code? What are the data format and coding strategies of the brain? How do questions about neural sytax relate to questions about semantics and representation? During his stay he took the opportunity to have several interviews with members of the MCMP an faculty, e.g. Stephan Hartman, Hannes Leitgeb, Margeret Morrison, Radin Dardashti, Alexander Reutlinger, Adam Caulton, Stephan Sellmaier (Phil. Dept.), Andreas Herz (Comp. Neurosci.)

d) Brian Hedden

Brian Hedden visited from 1 Feb, 2016 to 12 Feb, 2016, funded by his own Erasmus+ program grant and hosted by the MCMP for that period of time. He conducted research on how we should take into account future interests in our current decision-making. Is it rational to care more about your near future than about your farther future? How should society take into account the interests of far future persons when making current policy decisons? Partly using ideas developed during the LMU visit, Brian later wrote a paper entitled "Individual Time-Bias and Social Discounting" which is hopefully to be published in an edited volume by Oxford University Press and edited by Carla Bagnoli. During the visit, he also gave a short intensive course to Master's students on current topics in formal epistemology, with a focus on probability theory. Brian also attended a couple of the weekly colloquium talks at LMU.

f) Andrew Buskell

Andrew Buskell visited the MCMP from April 1st to April 30th -- through a Junior Fellowship from the center. At that time his research examined the mathematical models of cultural evolutionary theory (CET). During his time at the MCMP he focused his attention on models of cumulative cultural change, which predominantly posit a link between demography (the size of a target population) and the

complexity and rate of innovation of the culture of that population. The talk 'What are Cultural Attractors', given at the Max Planck Institute for the Science of Human History in Jena is direct result of this work. Andrew also gave the WIP talk 'Clarifying Cumulative Culture' at the MCMP on April 14th. Furthermore the following two papers are under review: 'What are Cultural Attractors' and 'Explaining with Cultural Attractor Theory'.

g) Francesca Biagioli

Francesca Biagioli visited the MCMP 15 April – 15 May 2016 on an MCMP Senior Visiting Fellowship and funds from the Zukunftskolleg at the University of Konstanz. At the time of her stay Francesca has been working on her research project, "Mathematical and Transcendental Method in Ernst Cassirer's Philosophy of Science," as a Zukunftskolleg – Marie Curie Postdoctoral Fellow affiliated with the Department of Philosophy at the University of Konstanz from August 2014 to present. This project focuses on the aspects of Cassirer's neo-Kantian philosophy that relate to the history of mathematics (in particular the roots of mathematical and scientific structuralism in nineteenth-century philosophy of geometry). The research stay at MCMP gave her the opportunity to start working on a new project on neo-Kantian themes that relate to ongoing discussions in the philosophy of science (on mathematical explanations, scientific representation, and objectivity in the sciences). Following the discussions initiated in Munich with Prof. Stephan Hartmann, Dr. Erik Curiel, Dr. Milena Ivanova, and Dr. Alexander Reutlinger, she started working on a project proposal, which was submitted in December 2016 to the German Research Foundation (DFG) with the title: "Mathematical Reasoning, Representation, and Objectivity: Neo-Kantian Themes in the Philosophy of Science." The proposal, which is currently under review, includes a module for her temporary position at LMU (3 years with expected start on 01/07/2017, in case of approval) and funding for the organization of two international workshops on the main topics of the project ("Neo-Kantian approaches to mathematical structuralism," "the making of representation") and an international conference on "neo-Kantian perspectives on the realism/anti-realism debate" at MCMP. During her stay at MCMP in 2016, she has been working on publications and other activities that relate to the topics of this new project, in particular Cassirer's conception of scientific representation and the transformation of the concept of representation from nineteenth-century philosophy of geometry to the semantic view of scientific theories as collections of models. Subsequently, Francesca presented her paper, "Reconsidering the Semantic View of Theories from a Historical Perspective" at the "Semantics of Theories" Conference, MCMP, 23–25 June 2016. More details on the outputs of her research are the following: Book review: The Philosophy of Ernst Cassirer: A Novel Assessment, edited by J. Tyler Friedman and Sebastian Luft. Berlin: De Gruyter, 2015. HOPOS: The Journal of the International Society for the History of Philosophy of Science 6.1(2016): 164–167; "Reconsidering the Semantic View of Theories from a Historical Perspective," in preparation for The Semantics of Theories, edited by Erik Curiel and Sebastian Lutz (forthcoming). Furthermore she presented "Cassirer on Scientific Representation and the Concept of Function," at the MCMP's Work in Progress Seminar, 21 April 2016 and took the opportunity to attend the weekly colloquia talks offered during the time of her stay.

h) Jakub Szymanik

Jakub Szymanik visited the MCMP April 15th-May15th on a Group Fellowship together with Nina Gierasimczuk. At that time he has been mostly working on building a novel model for Boolean categorization data using thechniques from automata theory and dynamic logics. During his time at the center he attended the reading group on reasoning and gave the colloquia talk "Bridging natural logic and probabilities to model human reasoning" on april, 20th 2016.

i) Nina Gierasimczuk

Nina Gierasimczuk visited the MCMP April 15th until May 15th on a Group Fellowship together with Jakub Szymanik. They have worked together in the above outlined project. Furthermore Nina collaborated with Karolina Krzyzanowska and attended the offered reading group. She gave the MCMP WIP talk "Learning to Act: Qualitative Learning of Action Models" on April 28th. During her time in Munich she took the chance to give talks at the University of Bayreuth and a tutorial and a research talk at the University of Darmstadt.

j) Aleks Knoks

Aleks Knoks visited the MCMP May 15 until July 15 on a MCMP Junior Fellowship. While at the center he worked on two projects. The first was trying to answer the questions "Is there a place for common sense in formal epistemology?". The second was a new project on reasoning with prioritized imperatives. The work on the first project resulted in the yet unpublished paper "Oaksford et al.'s (2000) model: a rational analysis of conditional inference, or maybe not". On the second project he gave an MCMP colloquia talk June 29th called "Reasoning with Prioritized Imperatives", which will also be a part of his dissertation. While at the MCMP he took part in a seminar by Jürgen Landes and Greg Wheeler and also attended the *Five Years MCMP* conference as well as *The Semantic of Theories*. He also took the opportunity to travel to Bayreuth for *DEON 2016: 13th International Conference on Deontic Logic and Normative Systems* that took place July 18-21.

k) Andreea Eşanu

Andreea Eşanu visited the MCMP between 1.06.2016 and 30.06.2016. She received funding from the New Europe College-Institute for Advanced Study, Bucharest, Romania. Andreea's research focused on two themes: she investigated the use of logical and mathematical methods in Ludwig Wittgenstein's early philosophy, the Tractatus logico-philosophicus, and their limitations; secondarily, she started preparing a research paper on the application of set-theoretic predicates in the formalization of theories in biology. Two papers on or related to the subject are already submitted: Eşanu, A. (2016): An Overview of Ludwig Wittgenstein's Early Philosophy: from Letters and Notebooks to the Tractatus logico-philosophicus and a Little Beyond In: New Europe College Yearbook 2015-2016, Bucharest (paper accepted for publication) and Eşanu, A.: The Suppes Predicate for Natural Selection. A Study in the Semantics of Evolutionary Theory in Biology, In: Proceeding of Semantics of Theories Conference 2016, Munich, Germany (paper submitted, currently under review). During her stay she presented "The Suppes predicate for natural selection - a study in the semantics of evolutionary theory in biology" at *The Semantics of Theories*, June 23-25 2016 as well as moderated a session at the *Infinite Idealizations in Science* June 8-9 2016; both were MCMP conferences.

l) Juliusz Doboszewski

Juliusz Doboszewski has stayed at the MCMP between 01.06.2016 and 13.07.2016, funded by an MCMP Junior Visiting Fellowship. He has been working on challenges to the view which says that two general relativistic spacetimes are equivalent if they are related by a mathematical transformation (diffeomorphism) which preserves certain mathematical object (spacetime metric). Juliusz has focused on two groups of examples: first, spacetimes which are taken as equivalent even though there is no diffeomorphism relating one to another (this class of examples is encountered, for instance, in questions concerning the initial value formulation of classical general relativity); second, situations in which it seems appropriate to demand preservation of some additional structure, such as the slice of spacetime on which the initial data are defined, spatial orientation, or temporal orientation. Such examples can be found, and he used that to argue that the answer to question whether two spacetimes are equivalent does not result from an application of a clear formal condition, but follows from a assessment which involves more complicated contextual factors than it is usually acknowledged by philosopers. During his stay at the MCMP he gave a work in progress talk at the MCMP July, 13th 2016, with the title "Physical equivalence in classical general relativity: is Diff(M) the end of the story?". An upgraded version of this talk ("Diffeomorphism invariance and physical equivalence") has been given at the third mini-symposium of the Philosophy of physics research group Budapest on 19th December 2016. A paper based on research he did during the stay at the MCMP and these two talks will be finalized in April-May 2017. Furthermore he attended two workshops at the MCMP: *Infinite Idealizations in Science* (8-9 June, 2016) and *First Principles in Science: Their Epistemic Status and Justification* (10-11 June, 2016) and few talks.

m) Neil Dewar

Neil Dewar was a visitor at the MCMP between June 1st and July 2nd, funded by a junior visiting fellowship from the MCMP. During his time in Munich, Neil was working primarily on three projects. One was a paper concerning what kind of spacetime structure Newtonian gravitation is committed to. The main purpose of the paper is to show a sense in which the the so-called "background" structure of Newtonian gravitation is weaker than what is commonly presented: it turns out that the only background required is one which permits the definition of absolute standards of rotation, but not absolute standards of acceleration. This is of interest not only for the foundations of Newtonian gravitational theory, but also because of its bearing on the so-called "equivalence principle" in General Relativity (the claim that linear accelerations are physically equivalent to uniform gravitational fields). This paper was presented at a conference in Canada that was held in early June (where it won the prestigious Clifton Prize, which is awarded every year to the best philosophy-of-physics paper presented at this conference), and at the Foundations of Physics conference at LSE in July (the largest philosophy of physics conference, the previous version of which was hosted by the MCMP in 2013). The second project was looking at the plausibility of the "Ramsey sentence" as an account of our theoretical knowledge. The Ramsey sentence of a theory is a certain construction out of a formally presented theory, which is sometimes defended as capturing the structure of that theory. There is a well-known objection (the so-called "Newman problem") to such a view, which purports to show that the Ramsey-sentence approach trivialises theoretical knowledge. The

purpose of this paper was to analyse this issue using more logical rigour than is sometimes customary, and to connect the debate to ongoing discussions regarding theoretical equivalence. First, it was shown how the Newman problem can be understood in terms of theoretical equivalence: from this perspective, the problem is that intuitively very different theories can give rise to the same Ramsey sentence (so it's implausible that the Ramsey sentence really captures the content of a theory). Then, it was shown that various possible solutions to the Newman problem don't succeed: even if we tweak how to form or interpret the Ramsey sentence in the ways suggested by these purported solutions, we still end up with cases where very different theories give rise to the same Ramsey sentence.The third concerned how to interpret scientific theories. Here, the argument was that there is a neglected aspect of interpretation that philosophers should pay more attention to. Most accounts of interpretation focus on how a theory's language may be translated into or connected with some other, supposedly better-understood language: for example, a language of observable phenomena, a language of material objects, etc. The purpose of this paper was to argue that it is also important to interpret a theory "internally", by characterising the relationships of synonymy and meaning within the theory's language; and (more radically) that the only kind of interpretation we need is this kind of internal interpretation. This paper was presented at a conference on the semantics of theories that was held at the MCMP at the end of June. All three of these papers have been submitted for publication. The first paper has just received a revise-and-resubmit verdict from a major philosophy of science journal; the second is still under review; and the third should appear (after revisions) in the edited volume associated to MCMP's semantics of theories conference. The first and third papers also formed part of Neil's DPhil thesis, on which he was successfully examined in July. All three are part of larger ongoing projects, which he continues to pursue: the second and third, in particular, will form the foundation for a research grant application from the DFG. In addition to the conferences mentioned above, he also attended the "5 years of MCMP" conference that was held at the start of June.

n) Collin Rice

Collin Rice visited the MCMP from June 10th 2016 to July 10th 2016. During that time, he was funded by both the MCMP through a Senior Visiting Fellowship and his home institution to cover the cost of travel and lodging during that time. While at the MCMP, Collin worked on two papers concerning the nature of idealization and mathematical modeling in science. In these papers, he argues that many of our best scientific models cannot be decomposed into their accurate and inaccurate parts. Instead, we must consider the models to be holistic distortions of their target systems. Despite being holistically distorted representations, he argues that these models can still be used to provide explanations and understanding of various phenomena. In a third paper, Collin argues that idealized models explain by providing the required information about counterfactual claims concerning what would have occurred if various features of the system had been different in various ways. During his time at MCMP, he completed said three papers that have now been revised and resubmitted to top journals in the field. He has also given a talk at The Philosophy of Science Association Biennial Meeting in Atlanta, Georgia (November 2016) where Collin presented one of the papers that were completed at the MCMP. While visiting MCMP, he attended the conference on the "Semantics of Scientific Theories" from June 23rd-25th.

o) Baris Bagci

Baris Bagci visited the MCMO from 30 August 2016 to 11 September 2016, partly supported by MCMP funding. The research that he has done in this period was two fold: the former has been concerning the relation between information and the statistical mechanics in the context of the Szilard engine. This part of the project has turned out to be very fruitful due to on-site communication with Stephan Hartmann and Eric Curiel. Hopefully, this part will soon yield to at least two papers on this subject. The second direciton of research has originated mainly with Stephan Hartmann, who recently came up with a method that now bears his name i.e. so called Hartmann operators. Through introducing these operators, he was able to use a group-theoretical approach in open quantum systems in such a manner that some problems have now become analytically tractable and many others became problems of far less complexity. The outcomes of Baris' visit to MCMP will see the light this year; as indicated above, the work on the relation between information and statistical mechanics will hopefully result in two papers in 2017. On the other hand, the joint work on Hartmann operators turned out to be a bigger project than assumed so that it will be continued in 2017 by adding Prof. Dr. Özgür Müstecaplıoğlu from Koç University in Istanbul to the standing collaboration.

p) Ulrich Stegmann

Ulrich Stegmann visited the MCMP from 2 - 29 October 2016, funded by both the MCMP and his home institution, the University of Aberdeen. Before taking up the Fellowship he had investigated how scientists like Watson, Crick, and Gamow used the term 'code' in practice in the years 1953-58. The Fellowship allowed me him extend that approach to 'genetic information'. This extension is essential for the purposes of Ulrich Stegmann's larger project on the nature and role of informational notions in molecular biology. During the first part of his stay, and based on previously gathered sources and notes, he traced Watson's, Crick's, and Gamow's views on protein synthesis. This revealed, among other things, new and unexpected aspects about Watson's contributions in 1954. For instance, the documents suggest that he was initially less committed to the linear progression DNAàRNAàprotein than generally believed. Based on this historical work about the views on protein synthesis, he then focused during second part of his stay on how Watson, Crick, Gamow, and a range of other authors used the term 'information'. This part also relied on additional sources and notes that were gathered before the visit. Several new results emerged from this work. The sources show, for instance, that 'genetic information' was used in three distinct ways, but in all cases referring to ordinary causal or structural, rather than semantic, properties. Another interesting finding is that Crick generated his 'Sequence Hypothesis' by joining two, initially unconnected claims about protein synthesis that Crick had defended two years earlier. Further work will be required to set these findings about actual usage into the context of contemporary philosophical work on this topic. The research will form a key part of a book that is under contract with Springer. During his stay Ulrich Stegmann gave the talk "Tools for testing mechanistic hypothesis" at the Workshop on *Many Methods–One Biology?* at LMU Munich, 21-22 October 2016. Furthermore he had many fruitful informal discussions with Alexander Reutlinger and Barbara Osimani as well as attended the offered work in progress- seminars.

q) Marco Giovanelli

Marco Giovanelli visited the MCMP October 15th until December 15th as a visiting fellow. During his stay at the MCMP, he concluded a monograph on the role of rods and clocks in relativity theory. He profited enormously from the possibility of discussing his work with scholars of the field working at the center and because of the inspiration that results from sharing knowledge with other scholars he was glad to be able to join the MCMP.

(VI) Center for Advanced Studies (CAS)

Since 2013 the work of the MCMP is supported by the Center of Advanced Studies at LMU Munich. In 2013-2015 there was a research focus program about Reduction and Emergence in the Sciences through which we were able to organize an international workshop, three international conferences and two evening lectures as well as welcome distinguished researchers. All of this led to various publications in *The British Journal for the Philosophy of Science, Synthese, Philosophy of Science* and *Ergo*.

In 2015 Catherine Herfeld received a junior researcher in residence fellowship by the CAS, enabling her to concentrate on preparing her Habilitation ('second book') that tackles the question of how scientific theories become adopted and diffuse within and across scientific communities. Parts of her work at the CAS concerned the question of how rational choice theory became developed and spread throughout the social sciences in the Post-War era. Furthermore the workshop "Studying Knowledge Transfer and Its Contexts", in which philosophers, historians, and sociologists of science discussed various kinds of knowledge transfers with scientific practitioners took place within her project and she was able to invite Prof. Thomas Sturm and Dr. Chiara Lisciandra as Visiting Fellows.

In 2016 Stephan Hartmann received the senior researcher in residence fellowship "Scientific Reasoning and Argumentation", enabling him to form a research group with Benjamin Eva, Karolina Krzyżanowska, Marko Tešić, and Harry Waterstone to address the following questions concerning reasoning and argumentation in science during his stay at the CAS: Which new reasoning and argumentation schemes can we find in contemporary science? How can these reasoning and argumentation schemes be assessed and

justified? Is it possible to come up with a unified normative theory of reasoning and argumentation in science? The project will also host two international workshops in 2017 as well as support Eleonora Cresto, Sabine Hossenfelder, Gabriele Kern-Isberner, Christian List, David Over und Wlodek Rabinowicz as Visiting Fellows.

(VII) ERC Starting Grant Research Group

Since spring 2015 the MCMP is hosting the ERC Starting Grant research group of Barbara Osimani on Philosophy of Pharmacology: Safety, Statistical Standards, and Evidence amalgamation. The project is interdisciplinary and applies methods from the philosophy of science, in particular from the theory of causality and from the foundations of statistics, to pharmacology. The project has three objectives: To provide a foundational analysis on statistical/causal inference with a focus on the critical assessment of current practices in drug approval and pharmacosurveillance; To build a unified epistemic framework within which different kinds of evidence for pharmaceutical harm can be combined and used for decision: evidence amalgamation; To provide a theoretical framework for the development of new standards of drug evaluation. With Barbara Osimani as the project's primary coordinator Jürgen Landes and Roland Pöllinger are hosted by Stephan Hartmann and the MCMP.

For further information visit the group's website: http://www.mcmp.philosophie.uni-muenchen.de/research/research_projects/phil_pharma/index.html