



PSA2012

San Diego, California
November 15-17th, 2012

Preliminary Program

Please send corrections to Gary Hardcastle (ghardcas@bloomu.edu) or Andrea Woody (awoody@uw.edu)

THURSDAY NOVEMBER 15

Session 1 (2-3:30)

Contributed Papers: Issues for Practice in Medicine and Anthropology

James Krueger (University of Redlands), "Theoretical Health and Medical Practice"

Cecilia Nardini (University of Milan), "Bias and Conditioning in Sequential Medical Trials"

Inkeri Koskinen (University of Helsinki), "Critical Subjects: Participatory Research Needs to Make Room for Debate"

Contributed Papers: Values in Science and Inductive Risk

Heather E. Douglas (University of Waterloo), "The Value of Cognitive Values"

Matthew J. Brown (The University of Texas at Dallas), "Values in Science Beyond Underdetermination and Inductive Risk"

Daniel Steel (Michigan State University), "Acceptance, Values, and Inductive Risk"

Contributed Papers: The Concept of Race: Biological, Cognitive, and Social Perspectives

Ludovica Lorusso (University of Sassari) and Fabio Bacchini (University of Sassari), "The Concept of Race in the Post-Genomics Era"

Alexandre Marcellesi (University of California, San Diego), "Is Race a Cause?"

Adam Hochman (University of Sydney), "Do We Need a Device to Acquire Ethnic Concepts?"

Contributed Papers: Kuhn, Incommensurability and the Contingency of Science

Jonathan Y. Tsou (Iowa State University), "Reconsidering the Carnap-Kuhn Connection"

Katherina Pia Kinzel (University of Vienna), "Contingency, Incommensurability and the Success of Science"

Joseph D. Martin (University of Minnesota, Twin Cities), "Is the Contingentist/Inevitabilist Debate a Matter of Degrees?"

Contributed Papers: Inference to the Best Explanation

Gerald Doppelt (University of California, San Diego), "Does Structural Realism Provide the Best Explanation of the Predictive Success of Science?"

David Harker (East Tennessee State University), "Inference to the Best Explanation and the Importance of Peculiarly Explanatory Virtues"

Robert William Fischer (Texas State University), "TRUE Is False and Why It Matters"

Contributed Papers: Causation, Motivation, and Human Nature in Neuroscience

Markus Ilkka Eronen (Ruhr University Bochum), "No Levels, No Problems: Downward Causation in Neuroscience"

Daniel F. Hartner (Rose-Hulman Institute of Technology), "From Desire to Subjective Value: On the Neural Mechanisms of Moral Motivation"

Grant Ramsey (University of Notre Dame), "Human Nature in a Post-Essentialist World"

Contributed Papers: Quantum Mechanics and Effective Field Theory

- Matthias Egg (University of Lausanne), "Delayed-Choice Experiments and the Metaphysics of Entanglement"
Michael E. Cuffaro (University of Western Ontario), "On the Debate Concerning the Proper Characterization of Quantum Dynamical Evolution"
Jonathan Bain (Polytechnic Institute of New York University), "Emergence in Effective Field Theories"

Contributed Papers: Historical Insights for Contemporary Issues

- Conor Mayo-Wilson (Carnegie Mellon University), "Whewell on the Division of Scientific Labor"
Laszlo Kosolosky (Ghent University) and Dagmar Provijn (Ghent University), "William Harvey's Bloody Motion: Creativity in Science"
Dana Tulodziecki (University of Missouri-Kansas City), "Shattering the Myth of Semmelweis"

Contributed Papers: Ontological Issues in the Life Sciences

- Joshua Filler (Ripon College), "Carnapian Conventionalism, Ontology, and the Philosophy of Biology"
Charles H. Pence (University of Notre Dame), "It's Okay to Call Genetic Drift a 'Force'"
Melinda Bonnie Fagan (Rice University), "The Stem Cell Uncertainty Principle"

Session 2 (3:45-5:45)**Symposium: Innovative Strategies for Teaching the Philosophy of Science**

- Gary Hardcastle (Bloomsburg University) and Matthew Slater (Bucknell University), "What's in the Box? Project-Based Learning in Philosophy of Science"
Hasok Chang (University of Cambridge), "Teaching Theory-Choice Through Immersion"
Chris Haufe (Case Western Reserve University), "Putting Philosophy of Science to the Test"

Contributed Papers: Relativity Theory and Cosmology

- Chris Smeenk (University of Western Ontario), "Confirming Inflation"
Dylan Gordon Gault (University of Western Ontario) and William Harper (University of Western Ontario), "Newton's Methodology in Cosmology Today"
Michael Tamir (University of Pittsburgh), "Geodesic Universality in General Relativity"
Dennis Lehmkuhl (University of Wuppertal, IZWT), "The Development of Mach's Principle in Einstein's work"

Contributed Papers: Conceptual Issues in the Physical Sciences

- John D. Norton (University of Pittsburgh), "The End of the Thermodynamics of Computation: A No Go Result"
Elay Shech (University of Pittsburgh), "What is the 'Paradox of Phase Transitions'?"
William Goodwin (University of South Florida), "Quantum Chemistry and Organic Theory"
Nathaniel Jacobs (University of California, San Diego), "The Nature of Mass and Matter in Special Relativity"

Contributed Papers: Underdetermination and Realism

- Moti Mizrahi (St. John's University), "Reconsidering the Argument from Underconsideration"
Kevin Coffey (Virginia Polytechnic Institute), "What is the Problem of Theoretical Equivalence?"
P. Kyle Stanford (University of California, Irvine), "Getting What We Pay For: Unconceived Alternatives and Historical Changes in Scientific Inquiry"
Ioannis Votsis (University of Düsseldorf), "Universal Empiricism"

Contributed Papers: Disciplinary Perspectives on Explanation

- Julia Bursten (University of Pittsburgh), "Reconsidering Explanation: Lessons from Nanosynthesis"
Michael David Silberstein (Elizabethtown College) and Anthony Chemero (Franklin and Marshall College), "Constraints on Localization and Decomposition as Explanatory Strategies in the Biological Sciences"
Mauro Dorato (University of Rome 3), "Causal Versus Structural Explanations in Scientific Revolutions"
Bradford Skow (Massachusetts Institute of Technology), "Are there Genuine Physical Explanations of Mathematical Phenomena?"

Contributed Papers: Metaphysics

Peter Bokulich (Boston University), "Modal Structure and Effective Degrees of Freedom"

Michael Hayden Thornburg (University of Cincinnati), "New Work for a Theory of Emergence"

Ken Aizawa (Centenary College of Louisiana), "Multiple Realizability by Compensatory Differences"

Johanna Wolff (Hong Kong University), "Are Conservation Laws Metaphysically Necessary?"

Contributed Papers: Decision Theory and Philosophy of Economics

Simon Huttegger (University of California, Irvine), "Probe and Adjust"

Elliott Wagner (University of Amsterdam), "The Explanatory Relevance of Nash Equilibrium: One-Dimensional Chaos in Boundedly Rational Learning"

C. Tyler DesRoches (University of British Columbia) and Margaret Schabas (University of British Columbia), "The Interest Rate as a Stable Kind"

Alessandra Basso (University of Helsinki), "The Measurement-Theoretic Conditions of Empirically Accurate Time Discounting"

Contributed Papers: Confirmation and Evidence

Aki Lehtinen (University of Helsinki), "On the Impossibility of Amalgamating Evidence"

Casey Helgeson (University of Wisconsin, Madison), "The Confirmational Significance of Agreeing Measurements"

Jacob Stegenga (University of Toronto), "Pseudorobustness"

Jan Sprenger (Tilburg University), "Testing a Precise Null Hypothesis: The Case of Lindley's Paradox"

Contributed Papers: Modeling, Mechanisms, and Modularity

Arnon Levy (Van Leer Jerusalem Institute), "Causal Organization: Mechanisms and Models"

Justin Garson (Hunter College - CUNY), "Broken Mechanisms: Function, Pathology, and Natural Selection"

Jaakko Kuorikoski (University of Helsinki) and Samuli Pöyhönen (University of Helsinki), "Understanding Non-Modular Functionality—Lessons from Genetic Algorithms"

Tarja Tellervo Knuutila (University of Helsinki) and Andrea Loettgers (California Institute of Technology), "Synthetic Modeling and Mechanistic Account: Material Recombination and Beyond"

Plenary Session with History of Science Society (6:00-7:30)

History and Philosophy of Science: 50 Years of Thomas Kuhn's *Structure of Scientific Revolutions*

Paul Hoyningen-Huene (University of Hannover)

Joel Isaac (University of Cambridge)

Mary Jo Nye (Oregon State University)

Alan Richardson (University of British Columbia)

FRIDAY NOVEMBER 16

Session 3 (9-11:45)

Symposium: New Horizons for Singularities in Classical Spacetime Theories

John Manchak (University of Washington), "On the Relationship Between Spacetime Singularities, Holes, and Extensions"

Erik Curiel (University of Western Ontario), "On Classifying Singularities in General Relativity"

James Weatherall (University of California, Irvine), "What is a Singularity in Geometrized Newtonian Gravitation?"

Robert Geroch (University of Chicago), commentary

Chair: Jeremy Butterfield (University of Cambridge)

Symposium: Introspective Evidence in the Scientific Study of Perception

Mazviita Chiramuuta (University of Pittsburgh), "Psychophysical Methods and the Evasion of Introspection"

Uljana Feest (Technical University of Berlin), "Phenomenological Introspection and the Artificiality of Experimental Data"

Gary Hatfield (University of Pennsylvania), "Psychological Experiments and Phenomenal Experience in Shape Constancy"

Anthony I. Jack (Case Western Reserve University), "What Introspection Teaches: The Brain Reveals Two Ways to Understand the Mind"

Eric Schwitzgebel (University of California, Riverside), "The Problem of Known Illusion and the Resemblance of Experience to Reality"

Symposium: Complex Systems: Explanation and Testing

Mark Bedau (Reed College), "Empirically Testing Simple Generative Models of the Evolution of Technology"

Paul Humphreys (University of Virginia), "Testing Models of Complex Systems"

Meinard Kuhlmann (Bielefeld University), "Explaining Financial Markets in Terms of Complex Systems"

Margaret Morrison (University of Toronto), "Renormalization Group Explanations and Dynamical Systems Theory"

Chair: Robert Batterman (University of Pittsburgh)

Symposium: Evidence and Causality in Medicine and Epidemiology

Alex Broadbent (University of Johannesburg), "Using Causal Knowledge to Predict"

Sander Greenland (University of California, Los Angeles), "Overthrowing the Tyranny of Null Hypotheses in Health and Medical Sciences"

Jeremy Howick (University of Oxford) and John Worrall (London School of Economics), "Active, Controlled Clinical Trials Are, Contrary to Current Medical Orthodoxy, Methodologically More Telling than Placebo Controlled Trials"

Richard Scheines (Carnegie Mellon University), "Constructing Variables for Causal as Opposed to Predictive Inference"

Chair: Christopher Hitchcock (California Institute of Technology)

Symposium: Signals, Signaling Games, and Biological Behavior

Jeffrey Barrett (University of California, Irvine), "On the Evolution of Arithmetic Rules in Nature"

Carl Bergstrom (University of Washington), "Bluffing Without Semantics"

Stephen Nowicki (Duke University), "Developmental Stress, Female Choice, and the Problem of Birdsong as an 'Honest' Signal"

Cailin O'Connor (University of California, Irvine), "The Differentiation of Types"

Kevin Zollman (Carnegie Mellon University), "Cheaper-than-Costly Signaling"

Symposium: Can Experimental Modeling Play the Role of Theorizing in Evolutionary Biology?

C. Kenneth Waters (University of Minnesota), "Experimental Modeling as a Form of Theoretical Modeling"

Michael Travisano (University of Minnesota), "Experimental Evolution of Biological Complexity"

Kristina Hillesland (University of Washington, Bothell), "Modeling the Evolution of Mutualism in the Real World"

Marcel Weber (University of Geneva), "Experimental Modeling: Exemplification and Representation as Theorizing Strategies"

Symposium: Poincaré Reconsidered: One Hundred Years Afterwards

Yemima Ben-Menahem (Hebrew University), "Poincaré's Impact on 20th Century Philosophy of Science"

Jeremy Heis (University of California, Irvine), "The Geometry Behind Poincaré's Conventionalism"

Katherine Dunlop (Brown University), "The Relationship of Geometry to Arithmetic in Poincaré's Science and Hypothesis"

John Stachel (Boston University), "Poincaré and the Origins of Special Relativity"

Chair: Sahotra Sarkar (University of Texas, Austin)

Symposium: The State of Race in Population Genetics

Michael Hardimon (University of California, San Diego), "Population Genetics and the Reality of Race"

Matthew Kopec (University of Wisconsin, Madison), "Clines v. Clades in the Race Debate"

Quayshawn Spencer (University of San Francisco), "How to Be a Biological Racial Realist"

Jonathan Kaplan (Oregon State University) and Rasmus Winther (University of California, Santa Cruz),

"Genetic Diversity, Differentiation, Heterozygosity, and the Very Concept of 'Race'"

Chair: Michael Hunter (University of California, Davis)

Session 4 (1:30-3:30)**Contributed Papers: Issues in Evolutionary Theory**

Pierrick Bourrat (University of Sydney), "Time and Fitness in Evolutionary Transitions in Individuality"

Armin W. Schulz (London School of Economics), "Exaptation, Adaptation, and Evolutionary Psychology"

Michael Trestman (University of California, Davis), "Which Comes First in Major Transitions: The Evolutionary Egg or the Behavioral Chicken?"

Matthew J. Barker (Concordia University) and Joel D. Velasco (California Institute of Technology), "Deep Conventionalism about Evolutionary Groups"

Contributed Papers: Metaphysics in Modern Physical Theories: Possibility, Symmetry, Unity, and Indeterminism

Katherine Brading (University of Notre Dame), "Presentism as an Empirical Hypothesis"

Carolyn Brighouse (Occidental College), "Geometric Possibility: An Argument From Dimension"

Daniel Peterson (University of Michigan), "Physical Symmetries, Overarching Symmetries, and Consistency"

Thomas Müller (Utrecht University), "A Generalized Manifold Topology for Branching Space-Times"

Contributed Papers: Psychology and Cognitive Science: Issues in Research

Michael Roche (University of Wisconsin, Madison), "How Not to Test the Inner Sense Theory of Introspection"

Worth Boone (University of Pittsburgh), "NCC Research: Verbal Report and Assumptions of Binarity"

Andrea Scarantino (Georgia State University), "Rethinking Functional Reference"

Marta Halina (Max Planck Institute for Evolutionary Anthropology), "Visual Perspective Taking in Apes: Rejecting the Behavioral Rules Hypothesis"

Contributed Papers: Critical Assessment of New Accounts of Explanation

Cyrille Thomas Imbert (Poincaré Archive, CNRS, University of Lorraine), "Relevance, Not Invariance, Explanatoriness, not Manipulability: Discussion of Woodward on Explanatory Relevance"

Juha Saatsi (University of Leeds) and Mark Pexton (University of Leeds), "Reassessing Woodward's Account of Explanation: Regularities, Counterfactuals, and Non-Causal Explanations"

Andrew Wayne (University of Guelph), "Causal Relations and Explanatory Strategies in Physics"

Samuel Schindler (University of Aarhus), "Explanatory Fictions—For Real?"

Contributed Papers: Modeling Practices

Wybo Houkes (Eindhoven University of Technology) and Sjoerd D. Zwart (Eindhoven University of Technology), "Transfer and Templates in Scientific Modeling"

Michael Goldsbys (University of Wisconsin, Madison), "The 'Structure' of the 'Strategy': Looking at the Matthewson-Weisberg Tradeoff and Its Justificatory Role for the Multiple-Models Approach"

Mathias Frisch (University of Maryland), "Climate Change: A Critical Look at Integrated Assessment Models"

Roman Peter Frigg (London School of Economics) and Leonard Smith (London School of Economics), "The Myopia of Imperfect Climate Models"

Chair: Alisa Bokulich (Boston University)

Contributed Papers: Issues for Formal Epistemology and Decision Theory

- Brad Armendt (Arizona State University), "Pragmatic Interests and Imprecise Belief"
P. D. Magnus (University at Albany SUNY), "What Scientists Know is Not a Function of What Scientists Know"
Gil Hertshten (University of California, San Diego), "Eliminating Candidates for Best Scientific Theories"
J. McKenzie Alexander (London School of Economics), "Preferential Attachment and the Search for Successful Theories"

Contributed Papers: Epistemology of Experiment: Design, Measurement, and Instrument

- David Teira (National Distance Education University), Maria Jimenez-Buedo (National Distance Education University), and Jesus Zamora-Bonilla (National Distance Education University), "A Contractarian Solution to the Experimenter's Regress"
Teru Miyake (Nanyang Technological University), "Underdetermination, Black Boxes, and Measurement"
Catherine Allamel-Raffin (University of Strasbourg), "From Intersubjectivity to Interinstrumentality: The Example of Surface Science"
Johannes Persson (Lund University) and Annika Wallin (Lund University), "Why Internal Validity is Not Prior to External Validity"

Contributed Papers: Values, Interests, and Motivations

- Immaculada de Melo-Martin (Weill Cornell Medical College) and Kristen Intemann (Montana State University), "Commercial Interests and Profit-driven Research: Can Feminist Philosophy of Science Help?"
Boaz Miller (University of Haifa), "Defending Pragmatic Encroachment on Knowledge: A Deontological Argument from Motivated Reasoning and the Value Ladenness of Science"
Kevin Elliott (University of South Carolina) and David Willmes (Bielefeld University), "Propositional Attitudes and Values in Science"
Manjari Chakrabarty (Visva Bharati University), "Popper's Contribution To The Philosophical Study Of Artifacts"

Session 5 (3:45-5:45)**Symposium: Individual Based Models in Ecology**

- Joan Roughgarden (Stanford University), "Individual-Based Models in Ecology: An Evaluation"
Michael Weisberg (University of Pennsylvania), "Understanding Population Behavior in Individual-Based Ecological Models"
Jay Odenbaugh (Lewis and Clark College), "Are Populations Epiphenomenal? Individual Based Models in Population Ecology"
James Justus (Florida State University), "The Methodological Individualism of Individual-Based Modeling in Ecology"

Contributed Papers: Space and Time in Physical Theory

- Kyle Sereda (University of California, San Diego), "Was Leibniz the First Spacetime Structuralist?"
Eleanor Knox (King's College London), "Newtonian Spacetime Structure in Light of the Equivalence Principle"
Bryan W. Roberts (University of Southern California), "When We Do (And Do Not) Have a Classical Arrow of Time"
Valia Allori (Northern Illinois University), "Maxwell's Paradox: The Metaphysics of Classical Electrodynamics and Its Time Reversal Invariance"

Contributed Papers: The Metaphysics of Quantum Theory

- Holger Lyre (University of Magdeburg), "Quantum Phases and Realism About Structure"
Thomas Pashby (University of Pittsburgh), "Do Quantum Objects Have Temporal Parts?"
Wayne Myrvold (University of Western Ontario), "What Is A Wavefunction?"
Meir Hemmo (University of Haifa) and Orly Shenker (The Hebrew University of Jerusalem), "Probability Zero in Bohm's Theory"

Contributed Papers: Reduction, Explanation, and Mechanism

Abraham Gruber (University of Iowa) and Ian O'Loughlin (University of Iowa), "Scientific Realism is

Incompatible with Reductionism: Combinatorial Explosion and the Intransitivity of Explanation"

Kari L. Theurer (Indiana University, Bloomington), "Seventeenth-Century Mechanism: An Alternative Framework for Reductionism"

Beckett Sterner (University of Chicago), "Pragmatics of Prediction and Explanation"

Adrian Currie (Australian National University), "Narratives & Mechanisms"

Contributed Papers: Causation: Analysis and Inference

Robert Ennis (University of Illinois), "Analysis and Defense of Sole Singular Causal Claims"

Holly K. Andersen (Simon Fraser University), "When To Expect Violations of Causal Faithfulness and Why It Matters"

Karen Rae Zwier (University of Pittsburgh), "An Epistemology of Causal Inference from Experiment"

Frederick Eberhardt (University of Pittsburgh), "Experimental Indistinguishability and Interventionism"

Contributed Papers: Issues of Representation: Models and Theories

Adam Toon (Bielefeld University), "Models, Sherlock Holmes and the Emperor Claudius"

Francesca Pero (University of Florence), "Presenting and Representing: Problems for the Model-Theoretic Account"

Alkistis Tania Elliott-Graves (University of Pennsylvania), "Abstract and Complete"

Till Grüne-Yanoff (Royal Institute of Technology, Stockholm), "Appraising Non-Representational Models"

Contributed Papers: Probability Theory and Formal Epistemology

Gregory Stephen Gandenberger (University of Pittsburgh), "A New Proof of the Likelihood Principle"

Benjamin Jantzen (Virginia Polytechnic Institute), "Piecewise Versus Total Support: How to Deal with Background Information in Likelihood Arguments"

Stephan Hartmann (Ludwig-Maximilians-University Munich) and Soroush Rafiee Rad (Tilburg University), "Updating on Conditionals = Kullback-Leibler + Causal Structure"

Samir Okasha (University of Bristol), "The Evolution of Bayesian Updating"

Contributed Papers: Methodological Issues in Biology

Angela Potochnik (University of Cincinnati), "Defusing Ideological Defenses in Biology"

Benjamin Sheredos (University of California, San Diego), Daniel C. Burnston (University of California, San Diego), Adele Abrahamsen (University of California, San Diego), and William Bechtel (University of California, San Diego), "Why Do Biologists Use So Many Diagrams?"

Francis Cartieri (University of Cincinnati), "Population Genomics and Empirical Insufficiency"

Stephan Guettinger (London School of Economics), "The Nature of Exploratory Experimentation and Its Relation to Theory in the Life Sciences"

SATURDAY NOVEMBER 17, 2012**Session 6 (9-11:45)****Symposium: Teleosemantics 2.0: New Directions in Evolutionary Explanations of the Mind**

Paul Griffiths (University of Sydney and University of Exeter), "Teleosemantics without History"

Karen Neander (Duke University), "Referential Concepts"

Dan Ryder (University of British Columbia, Okanagan), "Teleosemantics as a Theory External Constraint on Reference"

David Papineau (King's College, London), "The Variety of Teleosemantic Systems"

Bence Nanay (University of Antwerp and University of Cambridge), "Teleosemantics Without Etiology"

Symposium: Laws and Complex Systems

James Ladyman (University of Bristol) and Karoline Wiesner (University of Bristol), "The Nature of Complex Systems: Order, Causation and Law"

Alexander Reutlinger (University of Cologne), "Why Are There Any Robust Laws of Complex Systems?"

Michael Strevens (New York University), "Simplicity, Dependence, and the Sciences of Complexity"

Jessica Wilson (University of Toronto), "Metaphysical Emergence in Complex Systems"

Symposium: Mental Disorders and Psychiatric Taxonomy

Peter Zachar (Auburn University). "Psychiatric Disorders and the Imperfect Community: A Nominalist Harmful Dysfunction Analysis"

Dominic Murphy (University of Sydney), "On the Tendency of Mental Disorders to Form Varieties"

Jeffrey Poland (Brown University), "Deeply Rooted Sources of Error and Bias in Psychiatric Classification"

Kenneth F. Schaffner (University of Pittsburgh), "Rosch-like Prototype Model for Psychiatric Disorders"

Şerife Tekin (Dalhousie University), "The Missing Self in Psychiatric Taxonomy"

Chair: Brian Keeley (Pitzer College)

Symposium: Risk and Cancer: Decision Making Under Uncertainty

Miriam Kuppermann (University of California, San Francisco), "Framing Risk in the Context of Cervical Cancers"

Peter Schwartz (Indiana University), "Small Tumors as Risk Factors rather than Pathology"

Rebecca Kukla (Georgetown University), "Imagining the Risk of Iatrogenic Infertility in Young Cancer Patients"

Anya Plutinski (University of Utah), "A Risk of Cancer Screening? Overdiagnosis"

Miriam Solomon (Temple University), commentary

Symposium: Development: Knowing What Works, Evidence, Evaluation, and Experiment

Joseph Burke (Department of Foreign Affairs of Ireland), "Explaining the Narrowing Field in Development Evaluation"

Nancy Cartwright (London School of Economics & University of California, San Diego) and Hakan Seckinelgin (London School of Economics), "Peoples' Experiences and RCTs—Is There Such a Thing as Too Much Knowledge?"

Damien Fennell (London School of Economics), "When Is Ignorance Bliss? Controlling for Unknown Confounders for Development Projects Using RCTs"

Deborah Mayo (Virginia Polytechnic Institute), "Learning From Error in RCT4D"

Symposium: Philosophy of Cognitive Neuroscience: Evidence and Inference in Neuroimaging

Emrah Aktunc (Independent Scholar), "Severe Tests in Neuroimaging: What We Can Learn and How We Can Learn It"

Matt Bateman (Franklin and Marshall College), "Neuroimaging and Revisionary Cognitive Ontology"

Carrie Figdor (University of Iowa), "Neuroimaging and Inferences to Mental Content"

Colin Klein (University of Illinois-Chicago), "What Does 'Brain Activity' Mean in fMRI Experiments, and Why Does It Matter?"

Edouard Machery (University of Pittsburgh), "Neuroscientific Validation"

Symposium: Concepts of Populations: Ontology Matters

Roberta L. Millstein (University of California, Davis), "Populations in Homogeneous and Heterogeneous Environments"

Lisa Gannett (Saint Mary's University), "Are Populations Ontological Individuals? Historical Reflections"

Frédéric Bouchard (University of Montreal), "Evolution is about Variation, Not Populations"

Mathieu Charbonneau (University of Montreal), "Heredity as a Population-Level Process"

Symposium: Phase Transitions and Renormalization: Conceptual Aspects

Leo Kadanoff (University of Chicago), "A Perspective on Renormalization"

Craig Callender (University of California, San Diego) and Tarun Menon (University of California, San Diego), "Are Phase Transitions Emergent?"

Daniel Arovas (University of California, San Diego), "Quantum Phase Transitions, Dissipation, and Topology"

Nazim Bouatta (University of Cambridge) and Jeremy Butterfield (University of Cambridge), "Phase Transitions in Quantum Field Theory"

Session 7 (1:30-4:00)**Symposium: Philosophical Issues Regarding the Mathematical Representation of Continuous Phenomena**

Philip Ehrlich (Ohio University), "A Re-examination of Zeno's Paradox of Extension"

Jean-Pierre Marquis (University of Montreal), "Space: the Final Frontier"

Geoffrey Hellman (University of Minnesota), "Classical Continua Without Points"

Alan Hájek (Australian National University), "Staying Regular?"

Symposium: Signaling within the Organism

Peter Godfrey-Smith (City University of New York), "Sender-Receiver Systems Within and Between Organisms"

Nicholas Shea (Kings College London), "Neural Signaling of Probabilistic Vectors"

Rosa Cao (New York University), "Neuronal and Non-Neuronal Signaling in the Brain"

Brett Calcott (Australian National University), "Gene Regulation as Signaling: the 'Publish-Subscribe' Model"

Rory Smead (Northeastern University), "Deception and the Evolution of Plasticity"

Symposium: Semantic and Syntactic Approaches to Science: A Reconsideration

Sebastian Lutz (Ludwig-Maximilians-University Munich), "Empirical Adequacy in the Received View"

Otávio Bueno (University of Miami), "Diagrams and Styles of Reasoning: Toward a Reconciliation of the Received and the Semantic Views"

Holger Andreas (Ludwig-Maximilians-University Munich), "Scientific Reasoning Without Syntax?"

Hans Halvorson (Princeton University), "What is a Scientific Theory?"

Symposium: Causes and Comparability in Cases: the Human and Social Sciences

Rachel A. Ankeny (University of Adelaide), "Easy to Manipulate? How Medical Case Studies Help to Reveal Causes"

Theodore M. Porter (University of California, Los Angeles), "Cases, Statistics and the Search for Causes of Mental Illness"

Sharon Crasnow (Norco College), "Breaking the Code: The Role of Case Studies in Mixed Method Research"

Attilia Ruzzene (Erasmus University), "Causal Evidence from Case Studies: Why It Is Helpful for Effective Policy Making"

Mary S. Morgan (London School of Economics and University of Amsterdam), "Re-Situating the Situated Knowledge of Case Studies"

Chair: Stephen Turner (University of South Florida)

Symposium: Symmetries, Objecthood, and Fundamentality: Cross-sectioning Fundamental Physics

Antigone M. Nounou (University of Athens), "Irreducible Representations and Constitution of Elementary Objects"

Kerry McKenzie (Descartes Centre, Utrecht University), "Are Symmetries More Ontologically Fundamental than Elementary Particles?"

Elena Castellani (University of Florence), "Duality Symmetries and Ontological Democracy"

Christian Wuthrich (University of California, San Diego), "What, If Anything, is Spacetime, Fundamentally?"

Symposium: Molecules, Organisms, Systems: Developing a Multi-level Integrated Insights Into Biological Processes

Maureen A. O'Malley (University of Sydney), "Biological Systems from Molecular, Ecological and Microbiological Points of View"

Forest Rohwer (San Diego State University), "Viruses as Informational Manipulators of Biological Systems"

John C. Crawford (University of Sydney), "Where Does System-Oriented Analysis End? Soil Ecosystems Including Social Effects"

Rob Knight (University of Colorado, Boulder), "From Molecules to Dynamic Biological Communities"

Jack A. Gilbert (University of Chicago), "Beyond the Genome: Creating Predictive Models of Microbial Communities"

Sandra D. Mitchell (University of Pittsburgh), "Integrative Strategies in Explanations of Protein Folding"

Alan C. Love (University of Minnesota), "From Microbial Methods to Metazoan Ontogeny: Multi-Level Modeling of Biological Phenomena"

Ingo Brigandt (University of Alberta), "Integrating Causal-Mechanistic Explanation and Mathematical Modeling in Systems Biology"

Chair: Carol Cleland (University of Colorado, Boulder)

Symposium: Historical Contingency and Explanation in Biology

John Beatty (University of British Columbia), "Narrativity and Historicity"

Derek Turner (Connecticut College), "Contingency and the Explanation of Historical Trends"

Marc Ereshefsky (University of Calgary), "Species and Historicity"

Eric Desjardins (University of Western Ontario), "Path Dependence, Ecology and Restoration"