Canadian Society for the History
and Philosophy of Science
Annual Conference

Congrès annuel de la Société
canadienne d’histoire et de
philosophie des sciences

1-3 June/juin 2019

University of British Columbia
Vancouver, B.C.
Canada

Part of the Congress of the Humanities
and Social Sciences
Dans le cadre du Congrès
des sciences humaines
FRIDAY MAY 31

18:00 - 20:00 Executive Meeting / Réunion du Comité exécutif
Henry Angus 332

SATURDAY JUNE 1

8:30 - 10:00
Buch-D218

PHILOSOPHY OF BIOLOGY I: EVOLUTION

Chair: TBD
Against a Force Theory of Evolution
Todd Nagel University of Western Ontario and
Aleta Quinn University of Idaho
Novelty and Life: Towards a Possible Explanation in Philosophy of Biology
Yasmin Haddad McGill University
The Evolution of Moral Belief: Support for the Debunker’s Causal Premise
Michael Dale University of Texas at Austin

8:30 - 10:00
Buch-D316

NEW CONVERSATIONS IN THE FIELD OF SCIENCE AND RELIGION

Chair: TBD
Moving Beyond Complexity: Re-thinking Historiographical Approaches to Science and Religion
Sarah Qidwai University of Toronto
Psychedelic Testimony and Neurobiological Explanation
Andrew Jones University of Toronto
Perspectives of the Earth: The Distributed Affect of Three Photographs of the Earth and How the Transformation Perspective Exposes an Intersection Between Science and Religion
Anthony Nairn University of Toronto

8:30 - 10:00
Buch-D322

MEASURING THE MIND

Chair: TBD
Mediation in Measuring the Pure Experience of Pain
Celia Edell McGill University
Do You Hear What I Hear? Individual Differences in Speech Phenomenology
Dzintra Ullis Simon Fraser University
Sander Verhaegh Tilburg University

10:00 - 10:30

COFFEE BREAK
CAUSATION AND CAUSAL INERENCE

Chair: TBD

Formalizing Causal Inference: Sewall Wright’s Path Analysis in the Early Twentieth Century  
Zili Dong Simon Fraser University

The Concept of “Systemic Cause” in Safety Science  
Brian Hanley University of Calgary

Process, not just Product: the Case of Network Motifs Analysis  
Shimin Zhao Simon Fraser University

SOCIOLOGY OF SCIENTIFIC KNOWLEDGE

Chair: TBD

The Emergence of Peer Reviewed Books: University Press Publishing Editorial Practice in the United States  
Joshua Silver University of Chicago

The Symmetry Principle and Post-Truth Politics: Taking the Strong Programme’s Naturalism Further  
Kinley Gillette University of British Columbia

Anti-Psychologism, Distributed Cognition, and the Cognitive/Social Divide  
Gui Sanches de Oliveira University of Cincinnati

THE ‘SCIENTIFIC OCCUPATION’: PHOTOGRAPHY IN THE CONSTRUCTION OF THE PORTUGUESE AFRICAN EMPIRE

Chair: TBD

The Body of Landscape and the Landscape of Bodies: the Role of Photography and Film in the Anthropometric and Geographical Impulse of Portuguese 20th Century Colonial Missions  
Margarida Medeiros Instituto de Comunicação da Nova

Framing Territories, Making Borders: Photography in the Context of the Portuguese Missions of Border Delimitation (1890-1931)  
Teresa Mendes Flores Instituto de Comunicação da Nova

LUNCH BREAK
13:30 - 15:00 Buch-D218

METHODS IN THE PHILOSOPHY OF SCIENCE

Chair: TBD

Negotiating History: Contingency, Canonicity, and Case Studies
Agnes Bolinska University of Cambridge
Joseph Martin University of Cambridge

What Counts as Scientific Practice?
Ananya Chattoraj University of Calgary

Duhem’s Warning
Melanie Frappier University of King’s College

13:30 - 15:00 Buch-D316

MACHINE LEARNING AND ARTIFICIAL INTELLIGENCE

Chair: TBD

The Return of Mind Design: Cognitive Science and the Turing/Ashby Debate
Darren Abramson Dalhousie University
Erik Nelson Dalhousie University

Analysis of the Rise of Deep Learning from a Philosophy of Science Perspective
Smitha Milli University of California, Berkeley
Ravit Dotan University of California, Berkeley

Cultural Affordances in AI Perception
Zachariah A. Neemeh University of Memphis

13:30 - 15:00 Buch-D322

MINES, MOUNTAINS, CAVES: SCIENTIFIC, TECHNOLOGICAL AND POLITICAL SITES OF KNOWLEDGE MAKING

Chair: TBD

The Mine as Adversary: Leibniz versus the Harz Mountains
Andre Wakefield Pitzer College

A Mountain, Romantics and a Nation: Science and the First Ascent of Mt. Ararat
Ernie Hamm York University

National Spaces and Deepest Places: Politics and Practices of Verticality in the Scientific Research of Caves
Johannes Mattes Austrian Academy of Sciences

15:00 - 15:30

COFFEE BREAK
PROBABILITY AND EVIDENTIAL REASONING

Chair: TBD
Conditionally Independent Evidential Sources
Robert Hudson University of Saskatchewan
There is More to Probabilities than Meets the Eye: How Private Information can be Inferred from Announced Credences
Somayeh Tohidi Simon Fraser University
Inductive Risk, Expected Utility, and the Consequences of P-Hacking
Adrian Erasmus University of Cambridge

VALUES AND THEORY CHOICE

Chair: TBD
Science, Values, and Epistemic Standards: A Question of Sufficiency
Brandon Holter East Tennessee State University
A New Value-free Ideal: Disrupting the Hegemony of ‘Values’ in Social Philosophy of Science
Alan Richardson University of British Columbia
Machine Learning, Theory Choice, and Non-epistemic Values
Ravit Dotan University of California, Berkeley

SCIENCE IN ASIA IN THE 19TH AND 20TH CENTURIES

Chair: TBD
Popular Science in India, c. 1830
Jason Grier Independent
Troubled Translations: Science and Ethnoscience in Twentieth-century Philippines
Geoff Bil New York Botanical Garden
Writing the Histories of Japanese Science: The Case of the Neutral Theory of Molecular Evolution
Cédric Blais University of King’s College

INTERNATIONAL KEYNOTE SPEAKER

TWO APPROACHES TO SOCIAL EPISTEMOLOGY
Helen Longino Stanford University
This talk is made possible in part thanks to the International Keynote Speaker Support Fund of the Canadian Federation for the Humanities and Social Sciences (CFHSS) / Cette session est rendue possible grâce au support financier du Fonds de soutien des conférenciers internationaux de marque de la FCSH.
SUNDAY JUNE 2

8:30 - 10:00
Buch-D218
NON-CAUSAL AND MATHEMATICAL EXPLANATIONS

Chair: TBD

I Can't Get No Satisfaction, but I Can Explain It
Nicolas Fillion Simon Fraser University

Levels and a New Role for Mathematics in Empirical Sciences
Atoosa Kasirzadeh University of Toronto

Mathematical Explanation and the Problem of Counterpossibles
Erlantz Exteberria University of Western Ontario

8:30 - 10:00
Buch-D316
SCIENCE AND PUBLIC POLICY

Chair: TBD

Breaking Barriers to Ethical Research: An Analysis of the Effectiveness of Nonhuman Animal Research Approval in Canada
Letitia Meynell Dalhousie University
Macgregor Malloy Dalhousie University
Caroline Vardigans Dalhousie University

On the Mistaken Image of the Behavioral Sciences Prevalent in Policy Contexts: Insights from the Feminist Philosophy of Science
Magdalena Malecka Stanford University/University of Helsinki

8:30 - 10:00
Buch-D322
NATURAL HISTORY AND COLLECTIONS

Chair: TBD

The Epistemological Motivations Underlying the Narrative Ordering of American Ornithology
Caroline von Klemperer Simon Fraser University

The Materiality of Data: Collecting Scientific Information at a University
Erich Weidenhammer University of Toronto

Genetic Fantasy and Colonial Nostalgia: Backbreeding the “Native Breed” at Old Sturbridge Village
Elspeth Gow University of British Columbia

10:00 - 10:30 COFFEE BREAK
PHILOSOPHY OF BIOLOGY II: ONTOLOGY AND TAXONOMY

Chair: TBD

Evidence for Ontological Weak Emergence
Hamed Tabatabaei Ghomi University of Cambridge

Genetics and Evolution: Is There More to Life than This?
Tiernan Armstrong-Ingram University of California, Davis

Taxonomic Responsibility
Aleta Quinn University of Idaho

SCIENCE, SCIENCE POLICY AND THE FEDERAL STATE IN CANADA

Chair: TBD

Science, Industry and Policy in Early 20th-century Canada
James Hull University of British Columbia

You Can! Stop Waste So Others May Eat: Wastefulness, the Cold War, and Canada’s National Food Conservation Campaign, 1947-1948
Eric Striikwerda Athabasca University

Nuclear Anxieties: Fallout Research and the Northern Radiation Study, 1963-70
Matthew Wiseman University of Toronto

SCIENCE IN THE SOVIET UNION

Chair: TBD

Schools for the Mathematically Gifted Students of the Former Soviet Union. Students’ Selection and Admissions. Creating Diversity within Gifted Education.
Inna Tokar City College NYC, FIT, Calhoun School

The Soviet Scientist as Inspector: the Communal Hygienists’ Struggle to Regulate Industrial Pollution
Christopher Burton University of Lethbridge

12:00 - 13:30

LUNCH BREAK
METHODOLOGY OF RESEARCH AND EXPERIMENTS

Chair: TBD

Sending Knowns into the Unknown: Towards an Account of Positive Controls in Experimentation
Rebecca Jackson Indiana University

Archaeological Interpretation as Iterative Process
Kristin Kokkov University of Tartu

From Metaphysics to Methods? Pluralism in Cancer Research
Katherine Valde Boston University

CLIMATE SCIENCE

Chair: TBD

Taking Values Seriously: Climate Services and Inductive Risk
Greg Lusk Michigan State University
Wendy Parker Durham University

“The Oceans are our Great Laboratory”: Marine Science and Ocean Governance in the Anthropocene
Antony Adler Carleton College

Climate Change: a Consequentialist Perspective
Carling Bergquist Dalhousie University

WOMEN, TRANSNATIONAL MOBILITIES, AND MEDICO-SCIENTIFIC INNOVATION

Chair: Catherine Carstairs, University of Guelph

Margaret Sanger in China: The Eugenic Debates on Birth Control and Overpopulation in 1922
Mirela David University of Saskatchewan

Hunting Armadillos and Whales: Frances Oldham [Kelsey] at the University of Chicago in the 1930s
Cheryl Krasnick Warsh Vancouver Island University

“This was a Drug that Healed — it was Love”: the Life and Career of Florence Nichols, Medical Missionary and Psychiatrist
Jill Campbell-Miller Carleton University

Joint session with the Canadian Society for the History of Medicine / Session conjointe avec la Société canadienne d’histoire de la médecine.

This panel is made possible in part thanks to the Aid for Interdisciplinary Sessions Fund of the Canadian Federation for the Humanities and Social Sciences (CFHSS) / Cette session est rendue possible grâce au support financier du fonds de soutien pour les séances interdisciplinaires de la FCSH.

DRAKE LECTURE

DATA MADNESS AND QUANTIFIED HEREDITY

Ted Porter University of California at Los Angeles

PRESIDENT’S RECEPTION
### MONDAY JUNE 3

#### 8:30 - 10:00
Buch-D323

**PHILOSOPHY OF PHYSICS**

Chair: TBD

- Can Quantum Mechanics Unfreeze Time?  
  **Kent Peacock** University of Lethbridge

- A World Without Symmetry: Structural Realism and the Mathematical Foundation of Natural Law in General Relativity  
  **Noah Stemeroff** Tel Aviv University

#### 8:30 - 10:00
Buch-D312

**SCIENTIFIC EXPLANATION**

Chair: TBD

- The Role of Structural Explanation in the Study of Health Inequality  
  **Daniel Saunders** York University

- Changing Explanatory Strategies in Structural Biology: an Example from Protein Allostery  
  **Jacob Neal** University of Pittsburgh, HPS

- Analogy, Unity, and Scientific Understanding  
  **Shuguo Tang** University of British Columbia

#### 8:30 - 10:00
Buch-D218

**SCIENTIFIC LIVES AND CORRESPONDENCE**

Chair: TBD

- A Social Network and Text Analysis of Charles Darwin's Correspondence 1835-42  
  **Caroline Floyd** University of Guelph

- The Limits of Imperial Influence: John James Audubon in British North America  
  **Debra Lindsay** University of New Brunswick

- A Woman’s Place: Mary Warnock and the Public Face of Assisted Reproductive Technology  
  **Angela Yu** University of Oxford

#### 10:00 - 10:30

**COFFEE BREAK**
LOGIC AND STRUCTURE OF SCIENTIFIC THEORIES

Chair: TBD

**Empirical Adequacy Debugged**
Michael Miller University of Toronto

**Reasoning with Incompatible Theories**
M Bryson Brown University of Lethbridge

**Carnap on Formal Languages: Conversations with Russell and Gödel**
Yousuf Hasan University of Western Ontario

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SCIENTIFIC APPROACHES TO HEALTH CARE

Chair: TBD

**Space Allocation and the Mathematization of Hospital Work**
Theodora Vaardouli McGill University
David Theodore McGill University

**Medicine’s Transparency Problem: What We Can Learn by Paying Attention to Attention Deficit Disorder**
Vivian Feldblyum University of Pittsburgh

**Bioethics’ Project of Interdisciplinarity: Towards an “Argumentative Epistemology”**
Catherine Dussault Laval University

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BOOK PANEL WITH CHRISTOPHER BYRNE
MATTER AND TELEOLOGY IN ARISTOTLE’S NATURAL PHILOSOPHY

Organizer and Chair: Louis Groarke St. Francis Xavier University
Author: Christopher Byrne St. Francis Xavier University

Participants:

**Mechanics in Hellenistic Philosophy**
Sylvia Berryman University of British Columbia

**The Relation Between Aristotle’s Physics and Biology**
Byron Stoyles Trent University

**Aristotle’s Physics and Late Scholastic Philosophy**
Daniel Novotny University of South Bohemia

**Thomistic and Aristotelian Hylomorphism**
Steven Balder St. Francis Xavier University

Joint session with the Canadian Philosophical Association / Session conjointe avec l'Association canadienne de philosophie.

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12:00 - 13:30
Buch-A102

LUNCH SERVED AT:
ANNUAL GENERAL MEETING & HADDEN PRIZE CEREMONY
DîNER SERVÎ À:
ASSEMBLEE GÉNÉRALE ANNUELLE & REMISE DU PRIX HADDEN
13:30 - 15:00  Buch-D323  SCIENTIFIC REALISM
Chair: TBD
Realist Intuitions: Theoretical Virtues of Scientific Theories
Corey Mulvihill University of Ottawa
Human Inquiry, Presupposition, and Natural Structure
Josh Mozersky Queen’s University
Realism about Molecular Structures
Amanda Nichols Oklahoma Christian University
Myron Penner Trinity Western University

13:30 - 15:00  Buch-D312  MODELS AND MATHEMATICAL FOUNDATIONS OF SCIENCE
Chair: TBD
Moving Between Models: How Our Ontic Commitments Allow Incompatible Models to Inform One Another
Eric Hochstein University of Victoria
Anti-formalism in Philosophy of Economics: Mathematical Foundations or Mathematical Style?
Patricia Marino University of Waterloo
19th Century Geometry and Physical Theory Testing
Lydia Patton Virginia Tech

13:30 - 15:00  Buch-D218  ANCIENT AND EARLY MODERN SCIENCE
Chair: TBD
Successions and Classics in the Thought and Discourse of Ancient Science
Paul Keyser The Climate Corp. (Chicago)
A Complementary Scientific Approach to Eratosthenes’ Calculation of the Earth’s Circumference
Cem Erkil Simon Fraser University
The Roots of the Silver Tree: Alchemy and Final Causes in Boyle
Jennifer Whyte University of Pittsburgh HPS

13:30 - 15:00  Lasserre 102  NEW RESEARCH IN THE HISTORY OF SOVIET SCIENCE
Chair: Eric M. Johnson (UBC)
A Science for Aerial Hygiene: Vladimir Riazanov and the Soviet Understanding of Clean Air
Christopher Burton University of Lethbridge
Warming Trend: Soviet Climate Science and State Policy
Connor Stewart Hunter University of British Columbia
Biosocial Boundaries, Abortions and Eugenics in Soviet Russia, 1920-1936
Alexei Kojevnikov University of British Columbia
Kirill Rossiliano Russian Academy of Sciences
Stranger Facts: Mass Scientific Literacy Campaign and Alternative Forms of Knowledge in the Post-World War II USSR
Alexey Golubev University of Houston

Joint session with the Canadian Association of Slavists / Session conjointe avec l’Association canadienne des slavistes.

15:00 - 15:30  COFFEE BREAK
INQUIRY AND SCIENTIFIC PROGRESS

Chair: TBD

The Dynamics of Reason, Conceptual Analysis, and Scientific Progress
Nicholas Ray University of Waterloo

Induction and Deduction in the Context of Pursuit
Molly Kao University of Montreal

Inductive and Deductive Reasoning in Discovering the Cause of Brownian Movement
Klodian Coko University of Western Ontario

COMPUTATION: PHILOSOPHICAL AND SOCIAL PERSPECTIVES

Chair: TBD

Cyborg Landscapes: Intersections of Technology and the Environment in the Late 20th, and 21st, centuries
Sophie LeBlanc University of Toronto

Algorithmic Egalitarianism: Alphabet is Building a City of the Future
Anna Artyushina York University

Agency, Action, and ACTION-IS
Zoe Ashton The Ohio State University

HISTORY AND PHILOSOPHY OF PSYCHIATRY

Chair: TBD

Kraepelin’s Psychiatry in the Pragmatic Age: Transitions from Germany to the United States
David Rattray Simon Fraser University

Revolutionizing Psychiatric Classification: Prospects and Problems
Nicholas Slothouber University of Western Ontario

Towards a More Fine-Grained Methodological Landscape of the Study of Human Behaviour
Ingo Brigandt University of Alberta