



# CSHPS SCHPS 2021

## Programme

**Canadian Society for the History and  
Philosophy of Science  
Annual Conference**

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

**29 May-2 June 2021  
29 mai-2 juin 2021**

**Part of the Congress of the  
Humanities and  
Social Sciences**

**Dans le cadre du  
Congrès des sciences  
humaines**

**University of Alberta  
Edmonton AB  
Canada**

## Programme at a Glance / Programme sommaire

Eastern Daylight Time / Heure avancée de l'est (GMT -4)  
 (Mountain Daylight Time / Heure avancée des rocheuses (GMT -4))

### SATURDAY 29 MAY / SAMEDI 29 MAI

	A	B	C
11:30 - 13:00 (9:30 - 11:00)	Philosophy of cognitive science	Applicability of Mathematics	20th c. HOPOS
13:30 - 15:00 (11:30 - 13:00)	Reduction and emergence in biology	Aristotle and philosophy of science	Underrepresented groups in history
16:00 - 18:00 (14:00 - 16:00)	Subject and agency in biology	Decentered sciences: Beyond centre/periphery stories	Values and inductive risk

### SUNDAY 30 MAY / DIMANCHE 30 MAI

	A	B	C
11:30 - 13:00 (9:30 - 11:00)	History of science	Issues in science funding policy	Early modern philosophy of science
13:30 - 15:00 (11:30 - 13:00)	Explanation in the life sciences	Philosophy of physics and ontology	Expertise
16:00 - 17:30 (14:00 - 15:30)	<b>Drake Lecture: Galileo Among the Giants by Anita Guerrini</b>		
17:30 - 18:00 (13:30 - 16:00)	<b>Social Lounge Time</b>		

### MONDAY 31 MAY / LUNDI 31 MAI

	A	B	C
11:30 - 13:00 (9:30 - 11:00)	History and philosophy of biology	Laws	Social epistemology
13:30 - 15:00 (11:30 - 13:00)	Aims-based approaches in the life sciences	Philosophy of physics	Science and society
16:00 - 18:00 (14:00 - 16:00)	Marxist theories of science	History of 20th c. physics	Models and metrics

### TUESDAY 1 JUNE / MARDI 1 JUIN

	A	B	C
11:30 - 13:00 (9:30 - 11:00)	Science, technology and Northern exploration	HPS and AI	Climate science and policy
13:30 - 15:00 (11:30 - 13:00)	Philosophy of health sciences	Models, modality, representation	Scientific reasoning and theory change
16:00 - 17:30 (14:00 - 15:30)	<b>International Keynote: The Circulation of Mathematical Knowledge in 19th Century India and Europe by Dhruv Raina</b>		
17:30 - 18:00 (13:30 - 16:00)	<b>Social Lounge Time</b>		

### WEDNESDAY 2 JUNE / MERCREDI 2 JUIN

	A	B	C
11:30 - 13:00 (9:30 - 11:00)	<b>Annual General Meeting and Hadden Prize Ceremony / Assemblée générale et remise du prix Hadden</b>		
13:30 - 15:00 (11:30 - 13:00)	International and colonialist history of science	Teaching HPS through experiences	Nature of experiments
16:00 - 18:00 (14:00 - 16:00)	Cognition and psychiatry	Explanation, imagination, learning	Philosophy of technology

# CSHPS Programme SCHPS 2021

(24 May / 24 mai)

Eastern Daylight Time / Heure avancée de l'est (GMT -4)  
(Mountain Daylight Time / Heure avancée des Rocheuses (GMT-6))

SATURDAY 29 MAY / SAMEDI 29 MAI

A

B

C

11:30-13:00  
(9:30-11:00)

## Philosophy of cognitive science

Chair : Agnes Bolinska

**Ingo Brigandt**

How to Properly Investigate Human Cognitive Difference and Diversity?

**Andrew Richmond**

Representation and Representational Explanation

**Erik Nelson**

The Grammar of Bird Cognition: Wittgenstein, Corvids, and Nonlinguistic Concepts

## Applicability of mathematics

Chair : Robert Hudson

**Jessica Oddan**

Novel Methodology in Reconstructions of Quantum Theory

**Aditya Jha**

Formal Analogies, Scientific Explanation and Understanding

**André Curtis-Trudel**

Computational Pluralism

## 20th c. HOPOS

Chair : Jamie Shaw

**Alan Richardson**

The Reichenbach Scare: Cold War Reason and Closing the Gemeinschaft Gap

**Bianca Crewe**

The Theory of Knowledge and the Education of the People: Unified Science as Social Epistemology

**Deivide Garcia da Silva Oliveira**

On Feyerabend's Theory of Experience: The Empiricist Fluidness and Theoretical Speculation

13:00-13:30

BREAK

13:30-15:00  
(11:30-13:00)

## Reduction and emergence in biology

Chair : Aja Watkins

**Erica Onnis**

Irreducibility, Novelty, or What? Towards a Property Cluster Theory of Emergence

**Sun Kyeong Yu**

Biology and Its Tale of Two Reductions

## Aristotle and philosophy of science

Chair : Margaret Farrell

**Jennifer Whyte**

A Turn at the Wheel: The three lives of the Rota Aristotelica

**Adam Woodcox**

The Dialectic of Aristotle's De Divinatione per Somnum

## Underrepresented groups in history

Chair : Marga Vicedo

**Jörg Matthias Determann**

A More Diverse Universe: Identity and Inclusion in Modern Astronomy

**Landon D. C. Elkind**

The Lone Wrangler: Dorothy Wrinch's Original Contributions to Set Theory in the 1920s

15:00-16:00

LUNCH

16:00-18:00  
(14:00-16:00)

## Subject and agency in biology

## SESSION - Decentered Sciences: Beyond Centre/Periphery stories

## Values and inductive risk

Chair : Christophe Malaterre

**Auguste Nahas**

Cui Bono? The Continental Critique of Teleconomy

**Fermin Fulda**

Agential Autonomy and Biological Individuality

**Matthew Perkins-McVey**

Morphine, alcohol, and the victorious body: how intoxicants intersected bodies and minds in the development of the biological subject

**Alistair Whittle**

Singing Immunological Songs: An Exploration of Holobiont Individuality

Chair: Gianamar Giovanetti-Singh

**Maria Amuchastegui\***

The Discovery of Binary Numeration: Leibniz, Caramuel, and the New World

**Ernst Hamm**

Science, Empire, Centre and Periphery: Considerations via the Caucasus, Tartu, Saint Petersburg and Paris

**Gordon McOuat**

Tracking Decolonisation: The Case of the Journal of Genetics Going East

**Arden Rogalsky [Talk cancelled]**

J.B.S. Haldane: Charting a New Genetics Through Language and Place

Chair : Faeze Fazeli

**Aaron Kenna**

Contra the Value-Free Ideal of Science

**Helen Zhao**

The Importance of (An Account of) Empirical Adequacy

**Tyler Paetkau**

Degrees of Harm and Legitimacy: A Defense of the Inductive Risk Account of Epistemically Detrimental Dissent

**Parysa Mostajir**

Values in Science: Pragmatist and Feminist Perspectives

**SUNDAY 30 MAY / DIMANCHE 30 MAI**

**A**

11:30-13:00  
(9:30-11:00)

**History of science**

Chair : Matthew Wiseman

**David Orenstein**

A Scientific Centennial: The 1921 Toronto Meeting of the American Association for the Advancement of Science

**Vincent Auffrey**

“Pour l’amélioration de la race humaine”: The Reception of Eugenics in the French-Canadian Press, 1912-1921

**Bertrand Guillaume [Talk cancelled]**

Des hivers Belges: Projets de géo-ingénierie climatique de la Sibérie pendant la Guerre Froide

**B**

**SESSION: Issues in Science Funding Policy**

Chair : Rachel Katz

**Jamie Shaw**

Feyerabend, Pluralism, and Socially Responsible Science Funding Policy

**Mark Solovey**

Social Science for What? Wasting Taxpayer Dollars, Winning Golden Fleece Awards

**Kareem Khalifa**

Science Funding, Unpredictability, and New Inductions

**C**

**Early modern philosophy of science**

Chair : Jennifer Whyte

**Ryan Michael Miller**

Descartes, Model-based Scientist

**Qiu Lin**

Du Châtelet on Mechanical Explanation versus Physical Explanation

**Aaron Wells**

Kant on Mental Association and the Limits of Physiological Explanation

13:00-13:30

**BREAK**

13:30-15:00 (11:30-13:00)	Explanation in the life sciences	Philosophy of physics and ontology	Expertise
	Chair : Danielle Brown	Chair : Jessica Oddan	Chair : Parysa Mostajir
	<b>Sepehr Ehsani</b> Principled Mechanistic Explanations in Biology: A Case Study of Alzheimer's Disease	<b>Frida Trotter</b> On the Structural Nature of Entanglement	<b>Kinley Gillette</b> Conceptualizing deferential models of expert authority
	<b>Katie Deaven</b> Relative Significance Controversies in Evolutionary Biology	<b>Michael Cuffaro</b> The Open Systems View	<b>Marga Vicedo</b> Experience as expertise: Clara Park's call for valuing a mother's knowledge
	<b>Lane DesAutels</b> The Case for Final Causes in Life Science	<b>Thomas De Saeger [Talk cancelled]</b> Vague Dynamical Ontological Models of Quantum Theory	<b>Kamil Aftyka</b> The Role of Popular Science in the Formation of Expert Knowledge. Observations About Ludwik Fleck's Epistemology

15:00-16:00	LUNCH
16:00-17:30 (14:00-15:30)	<b>DRAKE LECTURE</b> <i>Anita Guerrini</i> Galileo Among the Giants
17:30-18:00 (15:30-16:00)	Social Lounge Time

MONDAY 31 MAY / LUNDI 31 MAI	A	B	C
11:30-13:00 (9:30-11:00)	<b>History and philosophy of biology</b> Chair : Lane DesAutels <b>Jacob P. Neal</b> From Static to Dynamic: A Historical Account of the Emergence of the Dynamic View of Proteins <b>Agnes Bolinska</b> Molecular models as tools for gaining information about protein and DNA structure <b>Aja Watkins</b> Accommodating Horizontal Inheritance in Phylogenetics	<b>Laws</b> Chair : Philippe Verreault-Julien <b>Chris Meacham</b> The Nomic Likelihood Account of Laws <b>Mousa Mohammadian</b> An Armstrongian Defense of Dispositional Monist Accounts of Laws <b>Alexandru Manafu</b> The Analyticity Objection to Special Science Laws	<b>Social epistemology</b> Chair : Justin Donhauser <b>Remco Heesen and Liam Bright</b> Publication Bias is Bad for Science if not Necessarily Scientists <b>Daniel Saunders</b> How to Put the Cart Behind the Horse in the Cultural Evolution of Gender <b>Michelle Pham</b> Social Roles in Scientific Collaboration

13:00-13:30	BREAK		
13:30-15:00 (11:30-13:00)	<b>Aims-based approaches in life sciences</b>	<b>Philosophy of physics</b>	<b>Science and society</b>
	Chair : Ingo Brigandt  <b>Ely Mermans</b> Controversies Over the Keystone Species Concept: A Brigandt-Longino's Analysis <b>Alican Basdemir</b> Integrating-for-Purposes: The Aims-Based Approach to Scientific Integration in Biology	Chair : Michael Cuffaro  <b>Adam Koberinski</b> Regularizing (away) vacuum energy  <b>Michael Miller</b> Quantum Determinables	Chair : Mark Solovey  <b>Rachel Katz</b> Funding the future? Trust and Transparency on Crowdfunding Platforms for Research Projects <b>Garrett Richards and Svetlana Barkanova</b> Evaluating STEM Outreach Programs: What Works Best and How Would We Know?
15:00-16:00			
16:00-18:00 (14:00-16:00)	<b>Marxist theories of science</b>	<b>History of 20th century physics</b>	<b>Models and metrics</b>
	Chair : Bianca Crewe  <b>Alex Bryant</b> Gilbert Simondon contra Marx and Hegel: Alienation and Analogical Understanding <b>Spencer Hayden</b> Marx and Engels: Against Positivism, for Dialectical Materialism  <b>Zeyad El Nabolsy</b>  Paulin J. Hountondji on Science, Capitalism, and Imperialism: An African Philosopher's Quest for a Sociology of Scientific Knowledge in the Peripheries  <b>George Borg</b> Discovery and Instrumentation: How Surplus Knowledge Contributes to Progress in Science	Chair : Michael Miller  <b>Marco Forgione</b> The Spacetime View in Feynman's Electrodynamics  <b>Andrea Oldofredi</b> On the Meaning of the Wave Function: Ettore Majorana's Lectures Notes on Theoretical Physics  <b>Theodora Vardouli and Salmaan Craig [Talk cancelled]</b> The Circuit and the Bath: Cultures of Energy Modelling at the University of Cambridge, 1960-1980  <b>Doreen Fraser</b> Taking the long view on quantum field theory	Chair : Aaron Kenna  <b>Ryan O'Loughlin</b> Climate model comparisons: history and philosophical implications <b>Federica Bocchi</b> Justifying inferences: the case of paleodiversity measurements and the contemporary biodiversity crisis <b>Justin Donhauser</b>  A New, Robust, Method for Weather Event Attribution  <b>Shimin Zhao</b> Two statistical approaches to simplicity: a comparison

TUESDAY 1 JUNE / MARDI 1 JUIN	A	B	C
11:30-13:00 (9:30-11:00)	<b>SESSION: Science, Technology and Northern Exploration</b>	<b>HPS and AI</b>	<b>Climate science and policy</b>

Chair: Fiona Amery

**Antony Adler**

Diving Under Ice: Saturation Diving and Canadian Sovereignty Claims in Arctic Waters

**Sarah Pickman**

"A Maximum of Nourishment with Minimum of Bulk": Arctic Exploration, Experimental Failure, and the Pemmican Campaigns of Vihjalmur Stefansson

**Matthew Wiseman**

Northern Depictions: Military Science and Inuit Knowledge on Film in Cold War Canada

Chair : Isaac Record

**Joseph Wilson**

The Ghost in the Machine: Structural Metaphors in the 'Golden Age' of Artificial Intelligence Research, 1956-1976

**Hakob Barseghyan and Nichole Levesley**

Big-Data and Integrated HPS: Towards a Database of Intellectual History

**Christophe Malaterre**

Reconstructing the history of philosophy of science by means of topic-modeling

Chair : Ryan O'Loughlin

**Joshua Luczak**

Climate Denialism is Harmful Bullshit

**Ahmad Elabbar**

Following Climate Science Towards Greater Emissions: Framing and Subversion in the Trump Administration's Assessments for Environmental Policy

**Faeze Fazeli**

Science, Post-Truth, and Superficial Democracies: How Social Psychology Undermines Kitcher's Solution for Climate Change

13:00-13:30

BREAK

13:30-15:00  
(11:30-13:00)

**Philosophy of health sciences**

Chair : Brandon Boesch

**Paul Istasy and Ben Chin-Yee**

The Problem of Trustworthy AI in Medicine

**Sarah Clairmont**

Valuing Population Health Science

**Zahra Meghani [Talk cancelled]**

The 'construction' of GE mosquitoes with gene drives as the solution to the high incidence of mosquito-borne diseases: An epistemically and ethically justified scientific practice?

**Models, modality, representation**

Chair : Alexandru Manafu

**Benedetta Spigola**

Cassirer on Representation, Representationalism, and Physical Knowledge

**Philippe Verreault-Julien**

Representing Non-Actual Targets?

**Thomas Donaldson**

Abstractionism and Modality

**Scientific reasoning and theory change**

Chair : Ely Mermans

**Charle André Terrault**

Deduction and Induction: False Dichotomy?

**David Rattray**

C.I. Lewis, F.P. Ramsey, and Scientific Theory Change

**Jean-Jacques Rousseau**

Les créoles comme modèle de changement scientifique

LUNCH

16:00-17:30  
(14:00-15:30)

**INTERNATIONAL KEYNOTE**

*Dhruv Raina*

**The Circulation of Mathematical Knowledge in 19th Century India and Europe**

17:30-18:00  
(15:30-16:00)

Social Lounge Time

WEDNESDAY 2 JUNE / MERCREDI 2 JUIN

A

B

C

11:30-13:00  
(9:30-11:00)

Annual General Meeting and Hadden Award Ceremony /  
Assemblée générale et remise du prix Hadden

13:00-13:30

BREAK

13:30-15:00  
(11:30-13:00)

**International and colonialist history of science**

Chair : Gordon McOuat

**Gianamar Giovannetti-Singh**

Knowledges of Geography and Geographies of Knowledge: Martino Martini's Novus Atlas Sinensis and the emergence of mathematical cosmography

**Fiona Amery**

The Sound of the Aurora Borealis: Discussion and Controversy in the First and Second International Polar Years

**Theo Di Castri**

“An Unusual Natural Laboratory”: Ethnicity, Deviance and Mid-Century US Settler Colonialism in the Construction of Problem Behavior Theory, 1958-1980

**SESSION: Teaching HPS Through Experiences**

Chair: Molly Kao

**Marisa Brandt**

Reimagining First-Year Writing for STEM Students as Inquiry-Based Learning in Science Studies

**Isaac Record**

“Make the Students Do the Work”: Designing a New Space for Learning HPS

**Eleanor Louson**

Teach with “GORP” for Better Experiential Learning in HPS

**Nature of experiments**

Chair : Derek Andrews

**Robert Hudson**

Explicating Exact versus Conceptual Replication

**Brandon Boesch**

Representational Practice of Representative Sampling in Public Health Surveillance Systems

**Austin Due**

Discovering Side Effects and Evaluating Efficacy in Post-Market ‘Phase IV’ Pharmaceutical Trials: Exploratory or Confirmatory Experiments?

15:00-16:00

LUNCH

16:00-18:00  
(14:00-16:00)

**Cognition and psychiatry**

Chair : Nicholas Ray

**Vivien Hamilton and Delia Gavrus**

Plant Cognition and the Re-enchantment of nature

**Explanation, imagination, learning**

Chair : Kareem Khalifa

**Haomiao Yu**

The Epistemology of Scientific Explanation

**Philosophy of technology**

Chair : Zahra Meghani

**Paula Sanchez-Nunez de Villavicencio**

Exploring the Networked Subject Through Reality Augmenting Technologies

**Margaret Farrell**

What Would Imaginary Ancestors Do?

**Derek Andrews**

Too Complex to Predict? What Complexity Theory Reveals About Natural Kind Analysis in Psychiatry

**Danielle Brown**

The Medical Nature of Personality Disorders

**Michael Stuart**

Metaepistemology of Tools that Extend the Power of the Human Scientific Imagination

**Thomas Kivatinos**

Familiar Portraits: The Hidden Convergence of Explanatory Practices in Science and Metaphysics

**Jennifer Jill Fellows**

A Mummery of Bondage: Siri and the Subversion of the Master/Slave Dialectic

**Arjun Sawhney**

Policing in the Age of Algorithms

\*Winner of the 2020 Hadden Prize | Récipient du prix Hadden 2020

**Note:** All talks are half an hour long. Sessions with less than a full slate will begin on time and end early.

**Note :** Toutes les conférences durent une demi-heure. Lorsqu'une session n'est pas complète, elle commence à l'heure et termine plus tôt.