

FIRST INTERNATIONAL CONFERENCE ON BRIDGING THE PHILOSOPHIES OF BIOLOGY AND CHEMISTRY

ORGANIZERS : DR. JEAN-PIERRE LLORED,
DR. JOACHIM SCHUMMER,
DR. QUENTIN HIERNAUX,
DR. CÉCILIA BOGNON.

JUNE 25-27, 2019

UNIVERSITY OF PARIS DIDEROT,
FRANCE

ROOM 454A, BUILDING CONDORCET, UNIVERSITY PARIS DIDEROT,
4, RUE ELSA MORANTE, 75013 PARIS, FRANCE

phil-bio-chem.sciencesconf.org

First International Conference on
BRIDGING THE PHILOSOPHIES OF BIOLOGY AND CHEMISTRY
June 25-27, 2019

Université Paris Diderot, salle 454A, Bâtiment Condorcet, 4, Rue Elsa Morante, 75013 Paris, France

Organizers : Dr. Jean-Pierre Llored (SPHERE, University Paris Diderot, France; Linacre College, Oxford University, Oxford, UK), Dr. Joachim Schummer (Editor-in-Chief of the *Hyle, International Journal for the Philosophy of Chemistry*), Dr. Quentin Hiernaux (Free University of Brussels) and Dr. Cécilia Bognon-Kuss (IHPST and University Paris 7)

Supports :

- SPHERE, Mixed Research Unit between the University Paris 7 and the CNRS.
- The department of History and Philosophy of Science at the University Paris 7.
- The Institute of Humanity and Science at the University Paris 7.
- LIED, Mixed Research Unit between the University Paris 7 and the CNRS.
- The Free University of Brussels.
- The ‘Fondation de la maison de la chimie’: The Foundation of the House of Chemistry.
- The ‘Société Chimique de France (SCF)’: The French Chemical Society.
- The Laboratory of Catalysis and Solid State Chemistry, Mixed Research Unit between the University of Lille and the CNRS.

We also gratefully acknowledge the intellectual support of:

- The CNRS in the framework of the celebration of its eightieth year of existence.
- The International Society for the Philosophy of Chemistry.
- The Circle of the Philosophers of Nature supervised by Miguel Espinoza.

PROGRAM

TUESDAY, 25 JUNE 2019

- 10:00 Welcome Coffee
10:30 Introduction

Session I [10:45-12:15]

NEW SCIENTIFIC WORKS AND ETHICAL IMPLICATIONS

Chair: Cécilia Bognon-Kuss

- 10:45 Stéphane Sarrade (Commissariat à l'énergie atomique et aux énergies alternatives de Saclay, France):
Green Chemistry and ecology
- 11:15 Barbara Demeneix and Jean-Baptiste Fini, (Museum National d'Histoire Naturelle, Paris) :
*Importance of fetal thyroid hormone signaling for brain development:
a window of vulnerability for endocrine disruption.*
- 11:45 Grant Fisher (Korea Advanced Institute of Science and Technology, Korea):
The ethics and epistemology of stem cell toxicity models

12:15 Lunch

Session II [13:30-17:00]

HISTORICAL STUDIES

Chair: Quentin Hiernaux

- 13:30 Antonino Drago (University “Federico II” of Naples, Italy) :
A common foundation of biology and chemistry according to a Leibniz's suggestion
- 14:00 Miguel Escribano Cabeza (University of Basque Country, Spain):
*G.W. Leibniz and the problem of constitution and genesis of the organic bodies.
Eduction and preformationism*

- 14:30 Sarah Hijmans (Université Paris Diderot, SPHERE, France):
Oxygen and the reactions of life in Lavoisier's chemistry
- 15:00 Coffee Break
- 15:30 Cécilia Bognon-Kuss (IPHST & Université Paris Diderot, France):
From Stoffwechsel to metabolism: The rise of a chemical biology
- 16:00 Sara Franceschelli (ENS of Lyon, France):
Instabilities first! A relational interpretation of Turing's approach to morphogenesis
- 16:30 Ute Deichmann (Ben-Gurion University of the Negev, Beer Sheva, Israel):
Data, theory, and scientific belief in early molecular biology: Pauling's and Crick's conflicting notions about the genetic determination of protein synthesis and the solution to the 'secret of life'

17:00 END

WEDNESDAY, 26 JUNE 2019

- 9:30 Welcome Coffee

Session IIIa [10:00-12:45]
ONTOLOGICAL ISSUES
Chair: Joachim Schummer

- 10:00 Keynote speaker:
Stephan Guttinger (Centre for Philosophy of Natural & Social Science, London School of Economics, UK):
Understanding the nature of molecules: Process ontology and scientific practice
- 11:00 Coffee Break
- 11:15 Donato Bergandi (Museum National d'Histoire Naturelle, Paris):
Rethinking emergence
- 11:45 Jean-Pierre Llored (SPHERE, University Paris Diderot, France ; Linacre College, Oxford University, UK):
Relational ontologies in chemistry, biology, and ecology: An investigation
- 12:15 Quentin Hiernaux (FNRS-FUB, Belgium):
Do chemical substances have ecological existence conditions?

- 12:45 Lunch

Session IIIb [14:00-16:30]
ONTOLOGICAL ISSUES
Chair: Stephan Guttinger

- 14:00 Guglielmo Militello (Univ. of the Basque Country & IAS-Research Centre for Life, Mind & Society, Spain) :
Structural and organisational conditions for being a machine
- 14:30 Daniel J. Nicholson (Konrad Lorenz Institute for Evolution and Cognition Research, Austria) :
Is it appropriate to conceptualize biological macromolecules as molecular machines?
- 15:00 Coffee Break
- 15:30 Klaus Ruthenberg (Coburg University of Applied Sciences and Arts, Germany):
Acids: Chemical or biological kinds?
- 16:00 Gregor Greslehner (CNRS & University of Bordeaux, France):
What is the explanatory role of the structure-function relationship in immunology?

16:30 END

THURSDAY, 27 JUNE 2019

9:00 Welcome Coffee

Session IV [9:30-15:00]

BRIDGING CONCEPTS AND APPROACHES

Chair: Jean-Pierre Llored

- 9:30 Keynote speaker:
Samir Okasha (President of the European Philosophy of Science Association, Bristol University, UK):
Can the philosophy of biology provide any lessons for the philosophy of chemistry?
- 10:30 Coffee Break
- 10:45 Olivier Sartenaer (University of Cologne, Germany) :
A place of its own? On the role of chemistry in the dispute over the reducibility of biology to physics
- 11:15 Jerome Santolini (Institute for Integrative Biology of the Cell, University Paris-Saclay, France)
& Martin Feelisch (Faculty of Medicine and Institute for Life Sciences, University of Southampton, UK):
Redox chemistry as the principal biological language
- 11:45 Michael Tobin (Independent scholar, Baltimore, USA):
Species as Quanta?: State discreteness in biology
- 12:15 Lunch
- 13:30 Michele Friend (Georgetown University, USA) :
Conceptual analysis in chemistry and biology using formal languages
- 14:00 Benjamin J. McFarland (Seattle Pacific University, USA):
The power of dissipative systems for chemical and biological explanation
- 14:30 Petra R. M. Maitz (Konrad Lorenz Institute for Evolution and Cognition Research, Austria):
RNA folding manner creates new insights of selforganising systems, a metamodernism?
- 15:00 Coffee Break

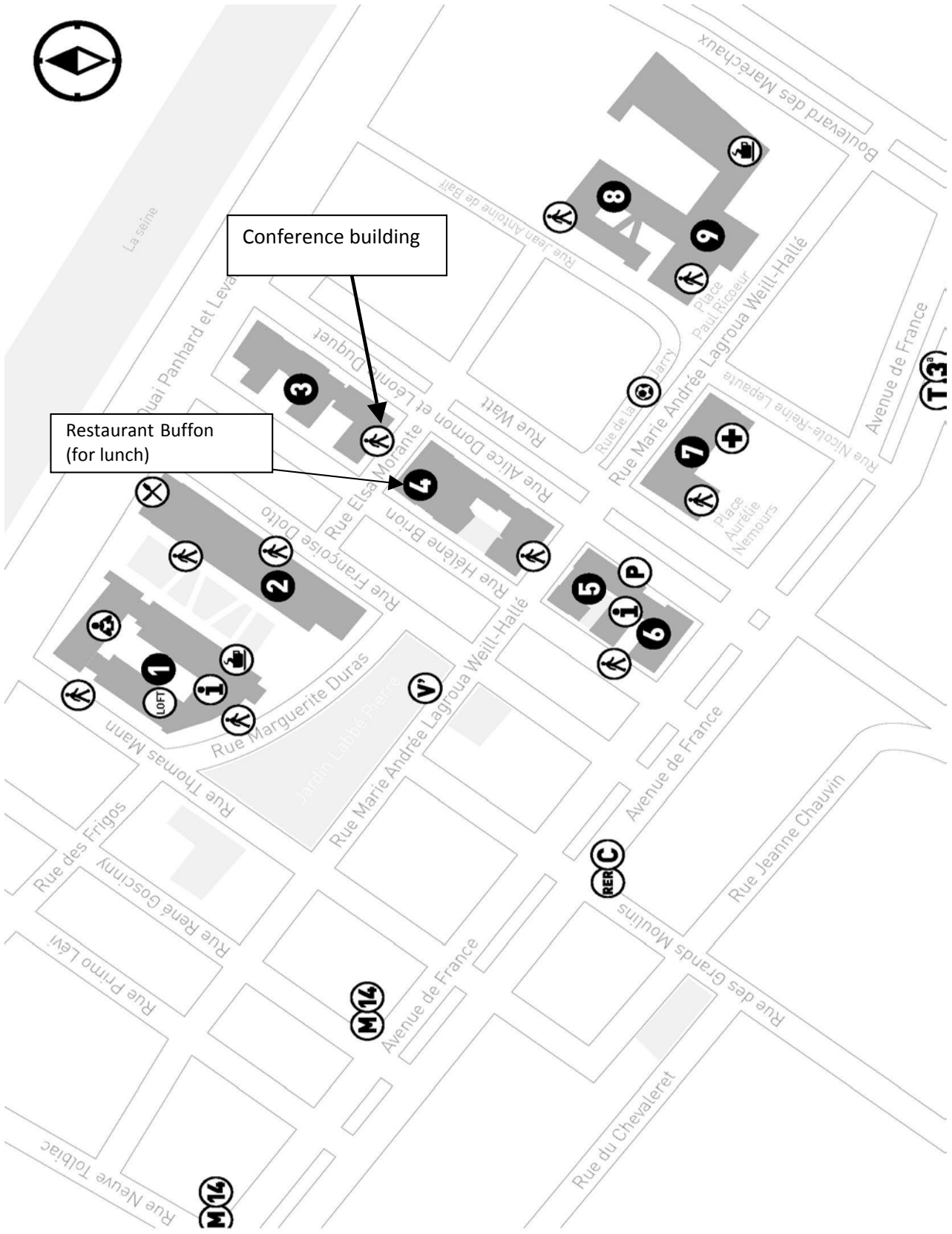
Session V [15:00-17:30]

SYNTHETIC BIOLOGY

Chair: Cécilia Bognon-Kuss

- 15:30 Franck Dumeignil (Chemistry Department, University of Lille, France):
Hybrid catalysis as a new topical concept bridging biotech and chemistry
- 16:00 Joachim Schummer (Editor-in-chief of Hyle, International Journal for the Philosophy of Chemistry):
Knowing through making: A comparison between synthetic chemistry and synthetic biology
- 16:30 Massimiliano Simons (KU Leuven, Belgium):
Dreaming of a universal biology
- 17:00 Dominic J. Berry (London School of Economics and Political Science, United Kingdom):
The synthesis of DNA: Chemical subunits making a narrative of biological engineering
- 17:30 General discussion and designation of the modalities of organization
of the second congress "Bridging the Philosophies of Biology and Chemistry"

18:15 END OF THE CONFERENCE



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