

Preliminary Scientific program and sessions:

MONDAY, SEPTEMBER 30TH, 2019 – MORNING SESSION

8h00 – Check in

9h30 - Opening of the congress – President of UTC and GERLI

Session 1 – Unusual fatty acids and lipid species with interesting physiological effects.

Keywords: *Unusual fatty acids, lipid species, fatty acids isomers, bioactive lipids, specific biological activities, physiological mechanism on human health (plants, microorganisms, yeast, algae, ...)*

Confirmed invited keynote speakers:

9h40 - Keynote : **Yvan Larondelle** : Professeur, Université Catholique de Louvain, Belgique.

Title: *Implication of different fatty acids and their physiological effect on metabolisms on human health after assimilation.*

Summary: Exploring the interactions between polyunsaturated fatty acids in rainbow trout liver cells: Implication of fermentable carbohydrates targeting the gut microbiota on conjugated linoleic acid production in high-fat-fed mice.; Implication of trans-11, trans-13 conjugated linoleic acid in the development of hepatic steatosis.

10h20

10h35

10h45 - Coffee break – Posters

Session 1 – Unusual fatty acids and lipid species with interesting physiological effects.

11h00- Keynote : **Ed Cahoon** : Professeur, Université du Michigan, USA.

Title: *Plant FAdB : A resource for exploring hundreds of plant fatty acid structures synthesized by thousands of plants.*

Summary: Unusual fatty acids and lipid species (CLA, isomers of different FA, cyclic FA, polyunsaturated FA, branched chain FA, hydroxy fatty acids, very long chain FA, short FA, conjugated FA, odd FA, ... ; plants, yeast, algae, marine organisms, ...) and their physico-chemical properties. Different and original sources of bioactive lipids : specific biological activities for these FA and lipid species, in producing organisms (plants, microorganisms, ...).

11h40

11h55

12h10

12H25

12h30 - Lunch

13h30 – 14h30 - Posters

MONDAY, SEPTEMBER 30TH, 2019 – AFTERNOON SESSION

Session 2 – Lipids and inflammatory mechanisms – Diseases and prevention

Keywords: *Role of usual and unusual FA in inflammatory mechanisms, Effect of fatty acids on health, on chronic dietary deficiency, prevention strategies, how to change the chronic dietary deficiency? ...*

Confirmed invited keynote speakers:

14h30 - Keynote : **Jesmond Dalli** : Professeur, William Harvey Research Institute, London, UK.

Title: Lipid mediators in inflammation. A functional view.

Summary: The Regulation of Proresolving Lipid Mediator Profiles in Baboon Pneumonia by Inhaled Carbon Monoxide; Pro-resolving mediators promote resolution in a human skin model of UV-killed Escherichia coli-driven acute inflammation. Lipid Mediator Metabolomics Via LC-MS/MS Profiling and Analysis.

15h10

15H25

15h 40

16h00 Coffee break – Posters

Session 2 – Lipids and inflammatory mechanisms – Diseases and prevention

16h20 - Keynote : **Martin Giera** : Professeur, Leiden University Medical Center (LUMC), Netherland.

Title : Boosting endogenous lipid mediator biosynthesis.

Summary : The presentation will focus about the possibilities of boosting endogenous lipid mediator biosynthesis. This lecture will contain two main parts, our recent work On the role of neuronal guidance proteins and their effect on endogenous lipid mediator biosynthesis (Inhibition of neogenin fosters resolution of inflammation and tissue regeneration as well as our recent work on inhibiting distal cholesterol biosynthesis and its relation with increased endogenous PUFA and lipid mediator biosynthesis via a desmosterol-LXR axis.

17h00

17H15

17h 30 Session Posters Flash

18h00 - Session : Short talks for poster presentations

18h30 - GERLI General Assembly

TUESDAY, OCTOBER 1ST, 2019 – MORNING SESSION

Session 3 – Lipids and vectorization

Keywords: *Creation of specific and innovative fatty acids and lipids with adapted properties (biotechnology, metabolite engineering, ...), Synthetic fatty acids (versus natural FA, ...), Structured lipids : conjugated fatty acid, very long chain and polyunsaturated fatty acids, cyclic fatty acids, ...*

9h00 - Keynote : **Ben Boyd** : Professeur, Monash University, Melbourne, Australie.

Title : *An overview of technologies for soft materials and potential opportunities for lipid-based drug delivery systems.*

Summary : Presentation will focus on the solid state characterization of ciprofloxacin liposome nanocrystals and the novel self-assembling conjugates as vectotr for agrochemical delivery. The recent work on phytantriol or gmo cubosomes and on the interesting processing of milk to solubilized in situ the API will be also presented.

9h40

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10h10

10h25 Coffee break – Posters

Session 3 – Lipids and vectorization

10h45 - Keynote : **Sébastien Lecommandoux** : Professeur, Laboratoire de Chimie des polymères, Université de Bordeaux, France.

Title : Polymers at the interface with biology.

Summary : La présentation sera ciblée sur les polymersomes qui sont des vecteurs de polymères à base de lipides particuliers.

11h25

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12h30 - Lunch

13h30 – 14h30 – Posters

TUESDAY, OCTOBER 1ST, 2019 – AFTERNOON SESSION

Session 4 – Lipids and nutrition / Lipids and nutraceutic

Keywords: *Food resources (natural or processed); Epidemiology and nutritional guidelines: The expectations of the society, of the industrials, Epidemiology and nutritional guidelines: what's new? Results of the Prospective Urban Rural Epidemiology (PURE) study: fats versus carbohydrate Results of the European Prospective Investigation into Cancer (EPIC) study; Peter Zock (Amsterdam). Involvement of agro-food chains, ...*

Confirmed invited keynote speakers:

14h30 - Keynote : **Philip Calder** : Professeur, University of Southampton, UK.

Title: *Immune function and micronutrient requirements change over the life course.*

Summary: As humans age, the risk and severity of infections vary in line with immune competence according to how the immune system develops, matures, and declines. Several factors influence the immune system and its competence, including nutrition. Various micronutrients are essential for immunocompetence, particularly vitamins A, C, D, E, B2, B6, and B12, folic acid, iron, selenium, and zinc. This presentation will look at immune considerations specific to each life stage, the consequent risk of infection, micronutrient requirements and deficiencies exhibited over the life course, and the available evidence regarding the effects of micronutrient supplementation on immune function and infection.

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16h00 Coffee break – Posters

Session 4 – Lipids and nutrition / Lipids and nutraceutic

16h20 - Keynote : **Rod Winwood** : DSM Nutritional Products Europe Ltd, Switzerland.

Title: *Impact of ingredients in various disorders.*

Summary: Hypovitaminosis D has become a pandemic, being observed in all ethnicities and age groups worldwide. Environmental factors, such as increased air pollution, and reduced ultraviolet B (UVB) irradiation, as well as lifestyle factors (decreased outdoor activities and/or poor intake of vitamin D-rich food), are likely involved in the etiology of a dramatic reduction of vitamin D circulating levels. The talk will focus on the emerging evidence about non-classical biological functions of ingredients in various disorders.

16h45

17h00

17h30 Prix de these talks

17H45 Prix de these talks

18h00 Gala Dinner and Visit (Bus)

WEDNESDAY, OCTOBER 2ST, 2019 – MORNING SESSION

Session 4 – Lipids and nutrition / Lipids and nutraceutic

9h00 - Keynote : **Sophie Layé** : Professeur, Laboratoire de nutrition et neurobiologie intégrée, INRA, Bordeaux, France.

Title: *Relevance of nutritional omega-3 fatty acids for depression and anxiety.*

Summary: The central nervous system (CNS) has the highest concentration of lipids in the organism after adipose tissue. Among these lipids, the brain is particularly enriched with polyunsaturated fatty acids (PUFAs) represented by the omega-6 ($\omega 6$) and omega-3 ($\omega 3$) series. Potential mechanisms involved in the neuroprotective and corrective activity of $\omega 3$ PUFAs in the brain will be discussed.

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10h25 Coffee break – Posters

Session 5 – Hot topics

Confirmed invited keynote speakers:

10h45- Keynote : **Alexandrine During** : Assitant Professor, Laboratoire de Physiopathologie des maladies osseuses inflammatoires, Université de Lille, France.

Title: Osteoporosis : a role for lipids.

Summary: Recently, several specific lipids derived from membrane phospholipids (i.e., sphingosine-1-phosphate, lysophosphatidic acid and different fatty acid amides) have emerged as important mediators in bone physiology and the number of such molecules will probably increase in the near future. The presentation will focus on the recent advances concerning the involvement of lipids in osteoporosis. Understanding the roles of lipids in bone is essential to

knowing how an imbalance in their signaling pathways might contribute to bone pathologies, such as osteoporosis.

11h25

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12H10

12h30 - Lunch

WEDNESDAY, OCTOBER 2ST, 2019 – AFTERNOON SESSION

Session 6 – Contributions of lipidomic, metabolomic and fluxomic to the knowledge in lipid production and nutrition

Keywords: *Omics technologies in the acquisition of new knowledge of the biological systems (synthesis, production, degradation, regulation...; different organisms, comparative studies, ...), knowledge of biological systems, isotopic labelling, metabolite profiling, integration of isotopic markers, modeling, ...*

Confirmed invited keynote speakers:

13H30 - Keynote : Jean-Charles Portais : Professeur, Plateforme MetaToul-MetaboHUB & STROMLab, Toulouse, France.

Title : Comprehensive investigations of cancer cell metabolism.

Summary : The presentation will concern an overview on the different methods using a multi-omics approach combining metabolomics, and isotopic profiling of [U-¹³C] glucose and [U-¹³C] glutamine cultures with more classical biochemical analyses, we studied the impact of the IDH1 R132H mutation in AML cells on lipid biosynthesis. This integrative approach was efficient to gain insight into metabolism and dynamics of metabolite species in leukemic cells.

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15h30 Coffee break – Posters

Session 6 – Contributions of lipidomic, metabolomic and fluxomic to the knowledge in lipid production and nutrition

15h45- Keynote : Markus Wenk : Professeur, Department of Biochemistry, National University of Singapore (NUS), Singapore.

Title : *MS-based analytical considerations of stable isotope labelling in lipidomics.*

Summary : Lipids are being implicated to play important roles in a variety of diseases and their role can be now understood with lipid biomarker research one of the most widespread applications of lipidomic techniques both in research and in clinical settings. Stable isotope labelling has become a staple technique in the analysis of small molecule metabolism and dynamics, as it is the only experimental setup by which biosynthesis, remodelling and degradation of biomolecules can be directly measured. The application of stable isotope labelling to lipidomics is however complicated by the diversity of lipids and the complexity of the necessary data analysis. This presentation will discuss key experimental aspects of stable isotope labelling in the field of mass spectrometry-based lipidomics, summarizes current applications and provides an outlook on future developments and potential.

16h20

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END OF THE MEETING : 17h00

Bus for CDG Airport : 17h30