

LIPID MAPS and MAP/UK Training school in Lipidomics

April 12th - 16th 2021

All sessions will be recorded and available to watch online after the event.

Introduction

Welcome to the LIPID MAPS® Spring School. Once you have registered you will receive the Zoom links, and can join us with our industry leading speakers for a full 5 days of biology and biochemistry of lipids!

Topics

The presentations during the week have been grouped into topics. These have been coded and displayed on the timetable.

(A) Introduction to Lipid biology/biochemistry

(B) Introduction to MS-based Lipidomics

(C) Advanced technologies

(D) Biostatistics and data analysis tools

(E) LIPID MAPS

(F) Tutorials

(G) Q and A

Sponsors

LIPID MAPS operates on a not-for-profit basis, where all partnership funding raised is to support the website and resource for the global community over the long term. We would like to acknowledge and give thanks to our sponsors for the Spring School.



DAY 1: Introduction to Lipid biology/biochemistry (April 12th)

China Beijing	London UK	America EDT	Workshop Title
7pm-7.15pm	12pm-12.15pm	7am-7.15am	Welcome to participants and Introduction to the School (A) <i>Maria Fedorova</i>
<i>Chair: Maria Fedorova</i>			
7.15pm-8pm	12.15pm-1pm	7.15am-8am	Introduction to lipids (cover lipid categories, diversity of metabolic pathways, etc) (A) <i>Valerie O'Donnell</i>
8pm-8.45pm	1pm-1.45pm	8am-8.45am	Sterols, bile acids, oxysterols (A) <i>William Griffiths</i>
8.45pm-9pm	1.45pm-2pm	8.45am-9am	BREAK
<i>Chair: Valerie O'Donnell</i>			
9pm-9.45pm	2pm-2.45pm	9am-9.45am	LIPID MAPS shorthand nomenclature and classification (E) <i>Matthew Conroy</i>
9.45pm-10.30pm	2.45pm-3.30pm	9.45am-10.30am	Sphingolipids (A) <i>Al Merrill</i>
10.30pm-11.15pm	3.30pm-4.15pm	10.30am-11.15am	Fatty acids and eicosanoids: Structure and Function (A) <i>Edward Dennis</i>
11.15pm-11.30pm	4.15pm-4.30pm	11.15am-11.30am	BREAK
11.30pm-12.50am	4.30pm-5.50pm	11.30am-12.50pm	Q and A (G): Lipid biology and biochemistry <i>Chair: Maria Fedorova</i>
12.50am-2.30am	5.50pm-7.30pm	12.50pm-2.30pm	Flash poster presentations (G). Each poster presenter will have 4-5 minutes to present, followed by 5 minutes for questions. They will be conducted in breakout rooms, as listed below; <i>Chair: Valerie O'Donnell</i> Poster presentations: I. Lipid in health and diseases – 10 posters (Chair – Laura Goracci)

			<ul style="list-style-type: none">II. Lipid metabolism - 9 posters (Chair - Valerie O'Donnell)III. Development of lipidomics methodologies – 9 posters (Chair – Bill Griffiths)IV. Infection, inflammation, exposure and food chemistry – 9 posters (Chair – Stacy Wendell)V. Bioinformatics and epilipidomics – 9 posters (Chair – Maria Fedorova)
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DAY 2: Introduction to MS-based Lipidomics (April 13th)

China Beijing	London UK	America EDT	Workshop Topic
<i>Chair: Gerhard Liebisch</i>			
7pm-7.40pm	12pm-12.40pm	7am-7.40am	Phospholipid structures and functions (incl LPL, LPA, PIPs, oxPLs) (A) <i>Junken Aoki</i>
7.40pm-8.20pm	12.40pm-1.20pm	7.40am-8.20am	Introduction to (LC)MS based lipidomics (B) <i>Maria Fedorova</i>
8.20pm-9pm	1.20pm-2pm	8.20am-9am	MS Instruments-Vendors presentations (B) Flexibility of a mammalian lipidome-insights from mouse lipidomics , <i>Christian Klose, Lipotype.</i> Targeted Quantitation of Lipids with SCIEX Triple Quad™ and QTRAP® Systems , <i>Rebekah L Sayers, SCIEX</i> Streamlined 4D workflows to simplify Lipid profiling , <i>Sven Meyer, Bruker.</i>
9pm-9.45pm	2pm-2.45pm	9am-9.45am	Shotgun lipidomics (B) <i>Gerhard Liebisch</i>
9.45pm-10pm	2.45pm-3pm	9.45am-10am	BREAK
<i>Chair: Michal Holčapek</i>			
10pm-10.45pm	3pm-3.45pm	10am-10.45am	Chromatography of lipids- potential for separation of various types of lipid isomers (B) <i>Michal Holčapek</i>
10.45pm-11.30pm	3.45pm-4.30pm	10.45am-11.30am	Neutral lipids (TG, DG, CE) (B) <i>Robert Murphy</i>
11.30pm-11.50pm	4.30pm-4.50pm	11.30am-11.50am	BREAK
<i>Chair: Robert Murphy</i>			
11.50pm-12.20am	4.50pm-5.20pm	11.50am-12.20pm	Sample preparation and storage considerations (B)

			<i>Robert Murphy</i>
12.20am-12.50am	5.20pm-5.50pm	12.20pm-12.50pm	Parameters for confirming lipid identification by LC-MS (B) <i>Stacy Wendell</i>
12.50am-1.20am	5.50pm-6.20pm	12.50pm-1.20pm	Quantitation of free and esterified fatty acids and eicosanoids (B) <i>Edward Dennis</i>
1.20am-1.50am	6.20pm-6.50pm	1.20pm-1.50pm	Identification of oxidized complex lipids from LC-MS/MS datasets. (B) <i>Maria Fedorova</i>
1.50am-2.20am	6.50pm-7.20pm	1.50pm-2.20pm	Targeted quantification of sphingolipids (B) <i>Al Merrill</i>
2.20am-4am	7.20pm-9pm	2.20pm-4pm	Q and A: LC MS Analysis (G) <i>Chair: Valerie O'Donnell</i>

DAY 3: Lipid identification and novel technologies (April 14th)

China Beijing	London UK	America EDT	Workshop Topic
<i>Chair: Paul Kennedy</i>			
7pm-7.40pm	12pm-12.40pm	7am-7.40am	Targeted Phospholipid analysis in mass spectrometry. (B) <i>Junken Aoki</i>
7.40pm-8.25pm	12.40pm-1.25pm	7.40am-8.25am	Quantification of lipid species (B) <i>Gerhard Liebisch</i>
8.25pm-9.10pm	1.25pm-2.10pm	8.25am-9.10am	Standards for broad lipid categories and for cohort work, including Lipidyzer, Splash, and how to use them (B) <i>Cameron Sullards</i>
9.10pm-9.55pm	2.10pm-2.55pm	9.10am-9.55am	Optimizing the use of standards for eicosanoid analysis. (B) <i>Paul Kennedy/ Miguel Gijon</i>
9.55pm-10.10pm	2.55pm-3.10pm	9.55am-10.10am	BREAK
<i>Chair: Jules Griffin</i>			
10.10pm-10.55pm	3.10pm-3.55pm	10.10am-10.55am	Lipid Imaging using MS and MS/MS (C)

			<i>Zoltan Takats</i>
10.55pm-11.30pm	3.55pm-4.40pm	10.55am-11.30am	Ion mobility application to lipidomics (C) <i>Jules Griffin</i>
11.30pm-12.20am	4.40pm-5.20pm	11.30am-12.20pm	Novel technologies: REIMS, iKnife, LDI, DESI imaging of lipids (C) <i>Zoltan Takats</i>
12.20am-12.35am	5.20pm-5.35pm	12.20pm-12.35pm	BREAK
<i>Chair: Maria Fedorova</i>			
12.35am-12.45am	5.35pm-5.45pm	12.35pm-12.45pm	Introduction to tutorials (F) <i>Maria Fedorova</i>
12.45am-1.30am	5.45pm-6.30pm	12:45pm-1.30pm	Use of XCMS for processing large MS or MS/MS datasets (F) <i>Gary Siuzdak</i>
1.30am-2.15am	6:30pm – 7:15pm	1.30pm-2.15pm	LipidFinder (F) <i>Jorge Alvarez Jarreta</i>
2.15am-3am	7:15pm – 8:00pm	2.15pm-3pm	LDA (F) <i>Juergen Hartler</i>

DAY 4 : Lipid quantification using targeted methods, statistics and visualization (April 15th)

China Beijing	London UK	America EDT	Workshop Topic
<i>Chair: William Griffiths</i>			
7pm-7.40pm	12pm-12.40pm	7am-7.40am	Targeted analysis of sterols and related mediators (B) <i>William Griffiths</i>
7.40am-8.20pm	12.40pm-1.20pm	7.40am-8.20am	UHPSFC/MS in high-throughput lipidomic quantitation (B) <i>Michal Holcapek</i>
8.20pm-9pm	1.20pm-2pm	8.20am-9am	Cohort lipidomics: Overview of current state of the art, standardization, and pitfalls(C) <i>Federico Torta</i>

9pm-9.40pm	2pm-2.40pm	9am-9.40am	Q and A : Lipid identification and quantification via targeted and untargeted MS/MS methods (G)
9.40pm-10pm	2.40pm-3pm	9.40am-10am	BREAK
<i>Chair: Maria Fedorova</i>			
10pm-10.40pm	3pm-3.40pm	10am-10.40am	MS-DIAL (F) <i>Hiroshi Tsugawa</i>
10.40pm-11.30pm	3:40pm – 4:30pm	10.40am-11.30am	LPptiger (F) <i>Zhixu Ni</i>
11.30pm-12.15am	4:30pm – 5:15pm	11.30am-12.15pm	mzMine (F) <i>Ansgar Korf</i>
12:15am-1am	5:15pm – 6:00pm	12.15pm-1pm	METASPACE (F) <i>Theodor Alexandrov</i>
1am-1.40am	6.00pm-6.40pm	1pm-1.40pm	Biostatistical tools for MS lipidomics (D) <i>Shankar Subramaniam</i>
1.40am-2.20am	6.40pm-7.20pm	1.40pm-2.20pm	Systems biology data integration – lipidomics perspectives (D) <i>Shankar Subramaniam</i>

DAY 5: Lipidomics data integrations (April 16th)

China Beijing	London UK	America EDT	Workshop Topic
<i>Chair: Laura Goracci</i>			
7pm-7.40pm	12pm-12.40pm	7am-7.40am	An introduction to biostatistical approaches in lipidomics: data analysis, visualization and interpretation. (D) <i>Laura Goracci</i>
7.40pm-8.20pm	12.40pm-1.20pm	7.40am-8.20am	LipidCreator (F) <i>Robert Ahrends</i>
8.20pm-9pm	1.20pm-2pm	8.20am-9am	LION/web: a web-suite for lipidomics data analysis.(F) <i>Martijn Molenaar</i>
9pm-9.40pm	2pm-2.40pm	9am-9.40am	LipidLynxX (F)

			<i>Zhixu Ni</i>
9.40pm-10pm	2.40pm-3pm	9.40am-10am	BREAK
<i>Chair: Egon Willighagen</i>			
10pm-10:40pm	3pm – 3:40 pm	10am-10.40am	LIPID MAPS databases, tools and other resources (E) <i>Matthew Conroy</i>
10:40pm-11.25pm	3:40pm –4:25 pm	10.40am-11.25am	BioPAN (F) <i>Caroline Gaud</i>
11.25pm-12:10am	4:25pm –5:10 pm	11.25am-12:10pm	WikiPathway (F) <i>Egon Willighagen</i>
<i>Chair: Valerie O'Donnell</i>			
12:10am-12.50am	5.10pm-5.50pm	12.10pm-12.50pm	Q and A (G)
12.50am-1.30am	5.50pm-6.30pm	12.50pm-1.30pm	Closing remarks



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