

Joint  
1<sup>st</sup> International Lipidomics Society annual conference

and

7<sup>th</sup> Lipidomics Forum

October 5th - 8th, 2021

in Regensburg, Germany

**iLS**



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# Program

<b>Date: Tuesday, 05/Oct/2021</b>	
<b>9:00 - 12:00</b>	<b>LIFS I: LIFS Training Session I</b> Session Chair: Nils Hoffmann University Regensburg, Lecture Hall 2 (H2)
	<b>LipiTUM Workshop</b> University Regensburg, Grand Lecture Hall (Audimax)
<b>12:00 - 13:00</b>	<b>Lunch</b>
<b>13:00 - 15:00</b>	<b>ILS Interest Group Presentations</b> University Regensburg, Grand Lecture Hall (Audimax)
	<b>LIFS II: LIFS Training Session II</b> Session Chair: Nils Hoffmann University Regensburg, Lecture Hall 2 (H2)
<b>15:00 - 15:30</b>	<b>Break</b>
<b>15:30 - 17:00</b>	<b>Lipidomics Standardization Initiative Update and Discussion</b> University Regensburg, Grand Lecture Hall (Audimax)
	<b>LIFS II: LIFS Training Session II</b> Session Chair: Nils Hoffmann University Regensburg, Lecture Hall 2 (H2)
<b>17:00 - 18:00</b>	<b>Break</b>
<b>18:00 - 19:00</b>	<b>Opening Lecture: Membrane lipidomics at the nexus of biophysics and cell physiology</b> <b>Ilya Levental</b> , University of Virginia, Charlottesville, Virginia, USA Session Chair: Dominik Schwudke University Regensburg, Grand Lecture Hall (Audimax)
<b>19:00 - 21:00</b>	<b>Welcome Mixer</b>

<b>Date: Wednesday, 06/Oct/2021</b>	
University Regensburg, Grand Lecture Hall (Audimax)	
<b>Session 1: Lipid Metabolism</b>	
Session Chairs: Emanuela Camera, Ralph Burkhardt	
9:00 - 9:30	<b>Keynote: Beyond "good cholesterol": Lipidomic analysis of high-density lipoprotein (HDL)</b> Anatol Kontush, INSERM, Sorbonne University and Pitié-Salpêtrière Hospital, Paris, France
9:30 - 9:50	<b>Early Career Females in Lipidomics Category</b> <b>Ontogeny of plasma lipid metabolism in pregnancy and early childhood: a longitudinal population study</b> Satvika Burugupalli, Metabolomics Laboratory, Baker Heart and Diabetes Institute, Australia
9:50 - 10:10	<b>Intra-tumoral heterogeneity of lipid metabolism in glioblastoma</b> Sweta Parik, VIB-KU Leuven Center for Cancer Biology, VIB, Leuven, Belgium.; VIB Center for Inflammation Research, Brussels, Belgium; Department of Oncology, KU Leuven and Leuven Cancer Institute (LKI), Leuven, Belgium.; Vrije Universiteit Brussel, Brussels, Belgium
10:10 - 10:30	<b>What is the lowest common denominator of the mammalian lung lipidome? A cross-species study.</b> Daniel Krause, Division of Bioanalytical Chemistry, Research Center Borstel, Borstel, Germany
10:30 - 11:00	Break
<b>Session 2: Clinical Lipidomics – Technologies</b>	
Session Chairs: Cristina Coman, Christer Ejsing	
11:00 - 11:30	<b>Keynote: Lipid class separation - mass spectrometry workflows in high-throughput lipidomic quantitation</b> Michal Holčápek, University of Pardubice, Pardubice, Czech Republic
11:30 - 11:50	<b>Using reference materials to generate biological reference ranges in lipidomics</b> Federico Torta, NUS, Singapore
11:50 - 12:10	<b>Early Career Females in Lipidomics Category</b> <b>A novel lipid droplet specific LC-MSn workflow for investigating therapy-resistance mechanisms in human colon cancer</b> Katharina Hohenwallner, Institute of Analytical Chemistry, Faculty of Chemistry, University of Vienna, Vienna, Austria
12:10 - 12:30	<b>Accumulation of dihydrosphingolipids and neutral lipids are related to steatosis and fibrosis damage both in human and animal models of NAFLD</b> OSCAR PASTOR, UCA-CCM, Servicio de Bioquímica Clínica. Hospital Universitario Ramón y Cajal-IRYCIS. Madrid; Grupo de Lípidos. Servicio de Bioquímica Investigación. Ramón y Cajal-IRYCIS. Madrid, Spain
12:30 - 14:00	Lunch
13:30 - 14:00	<b>Lunch Workshop</b> <b>Innovative tools for rigorous profiling and confident annotation of the lipidome</b> Anas Kamleh, Thermo Fisher Scientific
	

### Session 3: Shotgun Lipidomics

Session Chairs: Marcus Höring, Ilya Levental

14:00 - 14:30	<b>Keynote: Update on multi-dimensional mass spectrometry-based shotgun lipidomics and its biological/biomedical applications</b> Xianlin Han, Barshop Institute, UT Health, San Antonio, TX, USA
14:30 - 14:50	<b>Flexibility of a mammalian lipidome — Insights from mouse lipidomics</b> Christian Klose, Lipotype GmbH, Germany
14:50 - 15:10	<b>Lipidomic signatures of NAFLD progression</b> Olga Vvedenskaya, Max Planck Institute of Molecular Cell Biology and Genetics, Dresden, Germany; Spectroswiss, Lausanne, Switzerland
15:10 - 15:30	<b>Computational stratification and subtyping on NAFLD liver lipidomics</b> Tim Daniel Rose, LipiTUM, Chair of Experimental Bioinformatics, Technical University of Munich, Germany
15:30 - 16:00	Break
<b>Session 4: Clinical Lipidomics – Current Applications</b> Session Chairs: Irina Alecu, Kim Ekroos	
16:00 - 16:30	<b>Keynote: Plasma ceramides as biomarkers of cerebrovascular disease and dementia</b> Michelle Mielke, Mayo Clinic, Rochester, Minnesota, USA
16:30 - 16:50	<b>Comprehensive lipidomic profiling along the clinical patient journey by laser assisted rapid evaporative ionisation mass spectrometry - from cancer screening to MS-guided surgery</b> Zoltan Takats, Imperial College London, United Kingdom
16:50 - 17:10	<b>Altered Plasma, Urine, and Tissue Profiles of Sulfatides and Sphingomyelins in Renal Cell Carcinoma Patients</b> Robert Jirásko, Department of Analytical Chemistry, Faculty of Chemical Technology, University of Pardubice, Pardubice, Czech Republic
17:10 - 17:30	<b>Fingerprints and footprints of sebum associated with profiles of abundance of epidermal lipids in the stratum corneum: relevance in skin physiology and in atopic dermatitis.</b> Emanuela Camera, San Gallicano Dermatological Institute - IRCCS, Rome, Italy
17:30	<b>Presentation of remote posters</b>
18:00 - 21:00	<b>Poster Session &amp; Beer</b>

**Date: Thursday, 07/Oct/2021**

University Regensburg, Grand Lecture Hall (Audimax)

### Session 5: Structural Lipidomics

Session Chairs: Kai Schuhmann, Michal Holcapek

9:00 - 9:30	<b>Keynote: Integrating Hydrophilic Interaction Chromatography, Trapped Ion Mobility, and Isomer Resolving MS/MS Enables Fast and In-Depth Lipidomic Profiling</b> Yu Xia, Department of Chemistry, Tsinghua University, Beijing, China
9:30 - 9:50	<b>Mapping of alkyl and alkenyl ether lipids in RP-LC-MS experiments</b> Jakob Koch, Institute of Human Genetics, Medical University of Innsbruck, Austria
9:50 - 10:10	<b>HILIC meets MS imaging: CCS values obtained by chromatographic separation coupled to trapped ion mobility-MS for unequivocal assignment of phospholipids in MALDI-MS-imaging</b> Ansgar Korf, Bruker Daltonics GmbH & Co. KG, Bremen, Germany
10:10 - 10:30	<b>Identification and quantitation of glycolipidic rhamnolipids by supercritical fluid chromatography-mass spectrometry and charged aerosol detection</b> Anna Lipphardt, Institute of Inorganic and Analytical Chemistry, University of Münster, Münster, Germany
10:30 - 11:00	Break

### Session 6: Sphingolipids Signaling/Health and Disease

Session Chairs: Stefanie Rubenzucker, Gerhard Liebisch

11:00 - 11:30	<b>Keynote: Ceramides and the two phases of lipotoxicity?</b> Scott Summers, University of Utah, Salt Lake City, Utah, USA
11:30 - 11:50	<b>A REFERENCE MAP OF SPHINGOLIPIDS IN MURINE TISSUES</b> Sneha Muralidharan, Singapore Lipidomics Incubator, Life Sciences Institute, National University of Singapore, Singapore
11:50 - 12:10	<b>Probing the platelet lipidome and identifying key lipids critical for platelet activation by comprehensive lipidomics</b> Robert Ahrends Department of Analytical Chemistry, University of Vienna, Vienna, Austria
12:10 - 12:30	<b>Gangliosides Characterization and Isomer Separation using SLIM-based High Resolution Ion Mobility (HRIM)-Mass Spectrometry (MS)</b> Komal Kedia, MSD, West Point, PA 19486 USA
12:30 - 14:00	Lunch
13:30 - 14:00	<b>Lunch Workshop</b> <b>Lipid Characterization with EAD using the ZenoTOF 7600 system</b> Christian Baumann, Accurate Mass Workflows, SCIEX



## Session 7: Bile Acids and Lipid Signaling

Session Chairs: Bing Peng, Justine Bertrand-Michel

14:00 - 14:30	<b>Keynote: Bile acid signaling and the regulation of metabolic control</b> <b>Christian Wolfrum</b> , Institute of Food Nutrition and Health, ETH Zürich, Zürich, Switzerland
14:30 - 14:50	<b>Short chain fatty acids and bile acids in human faeces are associated with the intestinal cholesterol conversion status</b> <b>Silke Matysik</b> , Institute of Clinical Chemistry and Laboratory Medicine, University Hospital Regensburg, Regensburg, Germany
14:50 - 15:10	<b>CRISPR/Cas-9-mediated inactivation of soluble epoxide hydrolase N-Tle domain, a lipid phosphate phosphatase, promotes thermogenesis through peroxisome proliferator activated receptor gamma.</b> <b>Thomas Dufлот</b> , Normandy University, UniRouen, Inserm UMR1096 EnVI, Rouen, France; Department of Pharmacology, Rouen University Hospital, Rouen, France; Laboratory of Pharmacokinetics, Toxicology and Pharmacogenetics, Rouen University Hospital, Rouen, France
15:10 - 15:30	<b>Assessing membrane fluidity of antibiotic-resistant Staphylococcus aureus using an RPLC-IM-MS method for isomeric phospholipid separations</b> <b>Kelly M. Hines</b> , Department of Chemistry, University of Georgia, Athens, GA, United States of America
15:30 - 16:00	Break

## Session 8: Lipid Biomarker

Session Chairs: Olga Vvedenskaya, Zoltan Takats

16:00 - 16:30	<b>Keynote: Lipidomic-Based Insights into Disease Mechanisms: A Targeted Lipidomics Discovery Pipeline for Network Analysis</b> <b>Irina Alecu</b> , University of Ottawa, Ottawa, Ontario, Canada
16:30 - 16:50	<b>Multiomics of synaptic junctions reveals altered lipid metabolism and signaling upon environmental enrichment</b> <b>Cristina Coman</b> , Department of Analytical Chemistry, University of Vienna, 1090 Wien, Austria
16:50 - 17:10	<b>Modified lipids and lipid-protein adducts as pro-inflammatory markers in obesity and related complications</b> <b>Patricia Prabutzki</b> , Leipzig University, Faculty of Medicine, Institute for Medical Physics and Biophysics, Leipzig, Germany
17:10 - 17:30	<b>Early Career Females in Lipidomics Category</b> <b>Chemical cartography of localized lipidomic alterations during infectious diseases</b> <b>Laura-Isobel McCall</b> , Department of Chemistry and Biochemistry, University of Oklahoma, USA
19:30 - 23:00	Conference Dinner

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**Date: Friday, 08/Oct/2021**

University Regensburg, Grand Lecture Hall (Audimax)


### Session 9: Standards and Tools for Lipid Data Processing & Analysis

Session Chairs: Tim Daniel Rose, Robert Ahrends

9:00 - 10:30	<b>Keynote: Lipid molecular timeline profiling reveals diurnal crosstalk between the liver and circulation</b> <b>Christer Ejsing</b> , University of Southern Denmark, Odense, Denmark & EMBL, Heidelberg, Germany
9:30 - 9:50	<b>LipidCreator workbench to probe the lipidomic landscape</b> <b>Dominik Kopczynski</b> , Department of Analytical Chemistry, University of Vienna, Austria
9:50 - 10:10	<b>Integration of lipid specific fragmentation rules into SIRIUS</b> <b>Kai Dührkop</b> , Department of Bioinformatics, Faculty of Mathematics and Computer Science, Friedrich Schiller University, Jena, Germany
10:10 - 10:30	<b>SmartPeak Automates Metabolomics, Fluxomic, and Lipidomic Data Processing</b> <b>Douglas McCloskey</b> , Technical University of Denmark, Denmark
10:30 - 11:00	Break

### Session 10: Data Integration

Session Chairs: Dominik Kopczynski, Dominik Schwudke

11:00 - 11:30	<b>Keynote: LION/web: a web-suite for lipidomics data analysis</b> <b>Martijn Molenaar</b> , Alexandrov Group, EMBL, Heidelberg, Germany
11:30 - 11:50	<b>Automation of Large-Scale Lipidomics Workflow Management, Data Processing, QA/QC and Reporting</b> <b>Bo Burla</b> , National University of Singapore, Singapore
11:50 - 12:10	<b>The LIFS tools and workflows for mass-spectrometry based lipidomics</b> <b>Nils Hoffmann</b> , Center for Biotechnology (CeBiTec), Bielefeld University, Germany
12:10 - 12:30	<b>Investigating Global Lipidome Alterations with the Lipid Network Explorer</b> <b>Nikolai Köhler</b> , LipiTUM, Chair of Experimental Bioinformatics, TUM School of Life Sciences, Technical University of Munich, Freising, Germany
12:30 - 12:45	Award Ceremony: Poster and Presentation Prizes 
12:45 - 13:00	<b>Presentation of ILS 2022</b> Session Chair: <b>Erin S. Baker</b>
13:00 - 14:00	Lunch and Departure