

# Program

26th of September

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| 13:00 – 14:00 | <b>Registration</b>   |
| 14:00 – 15:45 | <b>Satellite workshop organized by LIPID MAPS Consortium</b><br><i>Eoin Fahy, University of California, San Diego, USA</i> <ul style="list-style-type: none"><li>● Redesigned LIPID MAPS website</li><li>● Lipid classification system</li><li>● Online Databases:<ul style="list-style-type: none"><li>○ LIPID MAPS Structure database (LMSD)</li><li>○ LIPID MAPS gene/protein database (LMPD) of lipid-related genes</li></ul></li><li>● MS spectra of lipid standards</li><li>● Lipid structure drawing tools</li><li>● Lipidomic MS search tools</li><li>● LIPID MAPS REST service</li><li>● Experimental data</li><li>● Data analysis tools</li><li>● Tutorials and reference information on lipidomics</li></ul> |
| 15:45 – 16:15 | Coffee break  |
| 16:15 – 18:00 | <b>Satellite workshop organized by Lipidomics Standards Initiative</b><br><i>Kim Ekroos, Lipidomics Consulting Ltd, Finland</i><br><i>Gerhard Liebisch, University of Regensburg, Regensburg, Germany</i> <ul style="list-style-type: none"><li>● Introduction to LSI</li><li>● Guidelines on<ul style="list-style-type: none"><li>○ Sample treatment</li><li>○ Extraction</li><li>○ Mass spectrometry</li><li>○ Data</li><li>○ Reporting</li></ul></li><li>● Discussion</li></ul>  |

## 27th of September

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| 8:45 - 9:10  | <p><b>Welcome Address</b><br/> <i>Norbert Sträter, Dean of the Faculty of Chemistry and Mineralogy, Leipzig University</i><br/> <i>Jürgen Schiller, Medical Faculty, Leipzig University</i><br/> <i>Maria Fedorova, Faculty of Chemistry and Mineralogy, Leipzig University</i></p> |
| <p><b>Session 1: Analytical Methods Development for Lipidomics</b><br/> <b>Chairs:</b> <i>Ondrej Kuda, Institute of Physiology CAS, Czech Republic</i><br/> <i>Yulia Popkova, Leipzig University, Leipzig, Germany</i></p> |   |
| 9:10 – 9:40  | <p><b>K1:</b> <i>Andrej Shevchenko, MPI-CBG Dresden, Dresden, Germany</i><br/> <b>Ultra-high-resolution mass spectrometry and what it brings to shotgun lipidomics</b></p>  |
| 9:40 - 10:00   | <p><b>T1.1</b> <i>Giorgis Isaac, Waters, Milford, USA</i><br/> <b>LipidQuan: Comprehensive and high-throughput targeted quantification platform</b></p>   |
| 10:00 – 10:20  | <p><b>T1.2</b> <i>Sergey Tumanov, The Beatson Institute for Cancer Research, Glasgow, UK</i><br/> <b>Development of a comprehensive lipidomics platform</b></p>   |
| 10:20 – 10:40  | <p><b>T1.3</b> <i>Silke Matysik, University Hospital Regensburg, Regensburg, Germany</i><br/> <b>Determination of sterols in human faeces by LC-MS/MS and GC-MS/MS</b></p>  |
| 10:40 – 11:10  | Coffee break  |
| 11:10 – 11:30  | <p><b>T1.4</b> <i>Angela Criscuolo, Thermo Fisher Scientific, Bremen, Germany</i><br/> <b>Rational selection of reverse phase columns for high throughput LC-MS lipidomics</b></p>  |
| 11:30 – 11:50  | <p><b>T1.5</b> <i>Paul RS Baker, Avanti Polar Lipids Inc, Alabama, USA</i><br/> <b>The tools and insights needed for lipid analysis</b></p>   |
| 11:50 – 12:10  | <p><b>T1.6</b> <i>Christoph Thiele, University of Bonn, Bonn, Germany</i><br/> <b>Multiplexed lipid metabolic tracing with single-cell sensitivity</b></p>  |
| 12:10 – 12:30  | <p><b>T1.7</b> <i>Heiko Hayen, University of Münster, Münster, Germany</i><br/> <b>Benefits of liquid chromatography in lipid characterization</b></p>  |
| 12:30 – 12:50  | <p><b>T1.8</b> <i>Tommy Hofmann, University of Halle-Wittenberg, Halle, Germany</i><br/> <b>Absolute quantification of phospholipids using short acyl chain analogues</b></p>   |
| 12:50 – 13:10  | <p><b>T1.9</b> <i>Mike Lange, Leipzig University, Leipzig, Germany</i><br/> <b>Adipose tissue lipidomics atlas</b></p>  |
| 13:10 – 14:40  | Lunch   |
| 13:40 – 14:25  | <b>Waters Lunch seminar</b>   |
| <p><b>Session 2: Imaging MS in Lipidomics</b><br/> <b>Chairs:</b> <i>Heiko Hayen, University of Münster, Münster, Germany</i><br/> <i>Kathrin Engel, Leipzig University, Leipzig, Germany</i></p>                          |   |
| 14:40 – 15:10  | <p><b>K2:</b> <i>Klaus Dreisewerd, University of Münster, Münster, Germany</i><br/> <b>MALDI-2 mass spectrometry imaging of lipids and metabolites in bacterial cultures and for monitoring host cell-bacteria interaction</b></p>  |
| 15:10 – 15:30  | <p><b>T2.1</b> <i>William Griffiths, University of Swansea, Swansea, UK</i><br/> <b>Imaging oxysterols in brain using on-tissue derivatization and LC-MS</b></p>  |

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| 15:30 – 15:50 | <b>T2.2</b> <i>Dhaka Ram Bhandari, University of Giessen, Giessen, Germany</i><br><b>Localization of metabolites and lipids associated with the wheat susceptibility to Fusarium head blight using high-resolution AP-MALDI MSI</b>                   |
| 15:50 – 16:10 | <b>T2.3</b> <i>Dolma Michellod, MPI for Marine Microbiology, Bremen, Germany</i><br><b>Exploring lipid diversity in the deep sea</b>  |
| 16:10 – 16:30 | Coffee break  |
| 16:30 – 16:50 | <b>T2.4</b> <i>Antonin Bednarik, University of Münster, Münster, Germany</i><br><b>On-tissue Paterno-Büchi derivatization with benzaldehyde enables MALDI-MS imaging of carbon-carbon double bond positional isomers of phosphor- and glycolipids</b> |
| 16:50 – 17:10 | <b>T2.5</b> <i>Sara Torterella, Molecular Horizon, Italy</i><br><b>Untargeted and high-throughput skin lipids mapping by imaging mass spectrometry</b>  |
| 17:10 – 17:40 | <b>K3:</b> <i>Carsten Hopf, Mannheim University of Applied Sciences, Mannheim, Germany</i><br><b>Mass spectrometry imaging of lipids in drug discovery and clinical studies</b>   |
| 17:40 – 19:00 | <b>Poster Session with drinks (supported by Wolfener Analytik GmbH)</b><br><b>Presentation of posters with odd numbers</b>  |
| 19:00 – 21:00 | <b>Welcome reception and get together at the venue</b>  |

## 28th of September

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| <b>Session 3: Bioinformatics solution for Lipidomics</b><br><b>Chairs:</b> <i>Jorge Alvarez-Jarreta, Cardiff University, Cardiff, UK</i><br><i>Zhixu Ni, Leipzig University, Leipzig, Germany</i>                                 |   |
| 8:30 - 9:00   | <b>K4:</b> <i>Robert Ahrends, Leibniz Institute for Analytical Sciences – ISAS, Dortmund, Germany</i><br><b>LIFS: Lipidomics informatics for life-science</b>                                     |
| 9:00 – 9:20   | <b>T3.1</b> <i>Harald Köfeler, University of Graz, Graz, Austria</i><br><b>Lipid Data Analyzer: the power of decision rule sets</b>   |
| 9:20 – 9:40   | <b>T3.2</b> <i>Laura Goracci, University of Perugia, Perugia, Italy</i><br><b>Analysis of bioactive lipids with Lipostar applications in sphingolipidomics</b>                                    |
| 9:40 – 10:00  | <b>T3.3</b> <i>Ansgar Korf, University of Münster, Münster, Germany</i><br><b>Mining of liquid chromatography-high resolution mass spectrometry data by three-dimensional Kendrick mass plots</b> |
| 10:00 – 10:20   | <b>T3.4</b> <i>Robbin Bouwmeester, VIB-University of Gent, Gent, Belgium</i><br><b>Accurate LC retention time prediction for metabolites with a generalized calibration approach</b>              |
| 10:20 – 10:50   | Coffee break  |
| <b>Session 4: Oxidized Lipids in Health and Disease</b><br><b>Chairs:</b> <i>Beate Fuchs, Leibniz Institute for Farm Animal Biology – FBN, Dummerstorf, Germany</i><br><i>Jenny Leopold, Leipzig University, Leipzig, Germany</i> |   |

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| 10:50 – 11:20  | <b>K5:</b> <i>Valerian Kagan, University of Pittsburgh, USA; IM Sechenov Moscow Medical University, Russia</i><br><b>Redox lipidomics deciphers the lipid signals of programmed cell death</b>   |
| 11:20 – 11:50  | <b>K6:</b> <i>Rosario Domingues, University of Aveiro, Aveiro, Portugal</i><br><b>Deciphering phospholipid oxidation in health and disease using mass spectrometry-based approaches</b>  |
| 11:50 – 12:10  | <b>T4.1</b> <i>Oleg Shadyro, Belarusian State University, Minsk, Belarus</i><br><b>Novel ROS-induced lipid transformations</b>   |
| 12:10 – 12:30  | <b>T4.2</b> <i>Andrew Pitt, Aston University, Birmingham, UK</i><br><b>Oxidized lipids and lipoxidation: separation and detection strategies and target analysis</b>   |
| 12:30 – 12:50  | <b>T4.3</b> <i>Giovanni Miotto, University of Padova, Padova, Italy</i><br><b>Polyoxy, non-fragmented, species represents the major products of Fe<sup>2+</sup> action on peroxides of poly-unsaturated phospholipids. A new hint on GPx4 physiological role</b> |
| 12:50 – 13:10  | <b>T4.4</b> <i>Joanna Godzien, University of San Pablo CEU, Madrid, Spain</i><br><b>Oxidized phosphatidylcholines in diabetes through non-targeted metabolomics: their annotation and biological meaning</b>   |
| 13:10 – 14:40  | Lunch  |
| 13:30 – 14:30  | <b>Lipidomics Software demo</b>  |
| <b>Session 5: Clinical Lipidomics</b><br><i>Chairs: Harald Köfeler, University of Graz, Graz, Austria</i><br><i>Mike Lange, Leipzig University, Leipzig, Germany</i> |  |
| 14:40 – 15:10  | <b>K7:</b> <i>Markus Wenk, National University of Singapore, Singapore</i><br><b>Natural variation of blood plasma lipids in healthy individuals</b>   |
| 15:10 – 15:40  | <b>K8:</b> <i>Dominik Schwudke, Research Center Borstel, Borstel, Germany</i><br><b>Tissue lipidomics: about the challenge to correlate clinical data and histological phenotypes with lipid metabolic snapshots</b>   |
| 15:40 – 16:00  | <b>T5.1</b> <i>Mark Haid, Helmholtz Zentrum München, München, Germany</i><br><b>The Lipidizer™ platform reveals lipidomics signatures of T2D patients with Roux-En-Y gastric bypass surgery: an IMI DIRECT study</b>   |
| 16:00 – 16:20  | <b>T5.2</b> <i>Manuel Pazos, Institute of Marine Research CSIC, Vigo, Spain</i><br><b>Lipidomics of the early stages of diet-induced obesity and hyperglycemia</b>   |
| 16:20 – 16:40  | Coffee break   |
| 16:40 – 17:00  | <b>T5.3</b> <i>Kenji Nakayama, University of Kyoto, Kyoto, Japan</i><br><b>Urinary lipidomics for the molecular diagnosis of prostate cancer</b>   |
| 17:00 – 17:20  | <b>T5.4</b> <i>Laura Niederstaetter, University of Vienna, Austria</i><br><b>Cold induced eicosanoid signature differs between BAT positive and BAT negative subjects</b>  |
| 17:20 – 17:40  | <b>T5.5</b> <i>Anne Bendt, Singapore Lipidomics Incubator, Singapore</i><br><b>The Singapore Lipidomics Incubator: a model for engagement and translation towards clinical assays</b>  |
| 17:40 – 18:50  | <b>Poster Session with drinks (supported by Wolfener Analytik GmbH)</b><br><b>Presentation of posters with even numbers</b>  |
| 19:30 – 23:00  | <b>Conference Dinner at Ratskeller</b>   |

## 29th of September

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| 9:00 - 9:30  | <b>K9:</b> <i>Valerie O`Donnell, Cardiff University, Cardiff, UK</i><br><b>Immune lipidomics of blood coagulation</b>   |
| <b>Session 6: Integration of Lipidomics into Systems Medicine Research</b><br><b>Chairs:</b> <i>Valerian Kagan, University of Pittsburgh, USA;</i><br><i>IM Sechenov Moscow Medical University, Russia</i><br><i>Georgia Angelidou, Leipzig University, Leipzig, Germany</i> |   |
| 9:30 – 10:00   | <b>K10:</b> <i>Xianlin Han, Barshop Institute, San Antonio, USA</i><br><b>Novel enhanced strategies and applications of shotgun lipidomics for metabolism and precision medicine</b>      |
| 10:00 – 10:20  | <b>K11:</b> <i>Christian Klose, Lipotype GmbH, Germany</i><br><b>Predicting obesity by machine learning based on human plasma lipidomics data</b>   |
| 10:20 – 10:40  | <b>T6.1</b> <i>Philipp Khaitovich, Skolkovo Institute of Science and Technology, Moscow, Russia</i><br><b>Lipids of the human brain: evolution and function</b>                           |
| 10:40 – 11:10  | Coffee break  |
| 11:10 – 11:30  | <b>T6.2</b> <i>Gerhard Liebisch, University of Regensburg, Regensburg, Germany</i><br><b>Guidelines for lipidomics analysis and reporting – the Lipidomics Standards Initiative (LSI)</b> |
| 11:30 – 11:50  | <b>T6.3</b> <i>Michael Witting, Helmholtz Zentrum München, München, Germany</i><br><b>A lipid-atlas of the model organism <i>Caenorhabditis elegans</i></b>                               |
| 11:50 – 12:10  | <b>T6.4</b> <i>Olga Vvedenskaya, MPI-CBG Dresden, Dresden, Germany</i><br><b>From NAFLD to liver cancer: characterization of liver lipidome in human samples by shotgun lipidomics</b>    |
| 12:10 – 12:30  | <b>Poster Award Ceremony and Closing Remarks</b>  |
| 12:30 – 13:30  | Lunch and Departure   |