



NIH Common Fund Annual Program Meeting: Metabolomics
September 27-29, 2016
Natcher Conference Center
National Institutes of Health
Bethesda, MD

Day 1: Tuesday, September 27, 2016

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| 12:00 pm | Registration Ongoing |
| 1:00-1:15 pm | Welcome and Logistics <i>Phil Smith, Deputy Director, Division of Diabetes, Endocrinology, & Metabolic Diseases, NIDDK</i> <i>Dinah Singer, Acting Deputy Director, NCI and Director, Division of Cancer Biology, NCI</i> <i>Keren Witkin, Program Director, Division of Cancer Biology, NCI</i> |
| 1:15-2:15 pm | Keynote Address: MYC and Metabolic Vulnerabilities of Cancer <i>Chi Van Dang, Director, Abramson Cancer Center, University of Pennsylvania</i> |
| 2:15-2:35 pm | Break |
| 2:35-2:50 pm | Remarks from the NIH Director <i>Francis Collins, Director, NIH</i> |
| 2:50-3:10 pm | Overview of the CF Metabolomics Program <i>Keren Witkin, Program Director, Division of Cancer Biology, NCI</i> |

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| 3:10-5:10 pm | Session 1: Basic and Clinical Applications of Metabolomics <i>Moderator: Charles Burant, Michigan Regional Comprehensive Metabolomics Resource Core</i> |
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| 3:10-3:40 pm | Basic and Clinical Applications of Metabolomics <i>Charles Burant, Michigan Regional Comprehensive Metabolomics Resource Core</i> |
| 3:40-3:55 pm | Rational Design of Microbiota-Mediated Secondary Bile Acids in the Gut to Restore Colonization Resistance Against Clostridium Difficile <i>Casey Theriot, North Carolina State</i> |
| 3:55-4:10 pm | The Specialized Metabolomics Response of Pseudomonas Aeruginosa to Antibiotics <i>Vanessa Phelan, University of Colorado Denver</i> |

- 4:10-4:25 pm **Mayo Clinic Metabolomics Core**
K. Sreekumaran Nair, Metabolomics Core at Mayo Clinic
- 4:25-4:40 pm **FoxO Transcription Factors Determine Hepatic Lipid Versus Glucose Production**
Rebecca Haeusler, Columbia University Medical Center
- 4:40-4:55 pm **Utilizing Metabolomics to Identify Patients with High Risk Smoldering Myeloma**
Wilson Gonsalves, Mayo Clinic
- 4:55-5:10 pm **Discussion**
Moderator: Charles Burant, Michigan Regional Comprehensive Metabolomics Resource Core

Day 2: Wednesday, September 28, 2016

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| 8:30-10:15 am | Session 2: Metabolomics Technology Development <i>Moderator: Richard Yost, Southeast Center for Integrated Metabolomics</i> |
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- 8:30-9:00 am **Metabolomics Technology Development - Overview**
Richard Yost, Southeast Center for Integrated Metabolomics
- 9:00-9:15 am **Integrated Chemoselective and Informatic Platform for Large-Scale Metabolomics**
Teresa Fan, Resource Center for Stable Isotope-Resolved Metabolomics
- 9:15-9:30 am **Sub-Minute Comprehensive Metabolomic Analyses of Biofluid and Environmental Samples Using SPE-IMS-MS**
Erin Baker, Pacific Northwest National Laboratory
- 9:30-9:45 am **High Throughput Lipidomic Analysis by the CTS Method**
Robert Murphy, University of Colorado Denver
- 9:45-10:00 am **Elucidating Metabolic Reprogramming in Cancers Directly from Human Subjects via Ex Vivo Stable Isotope Resolved Metabolomics (SIRM)**
Richard Higashi, Resource Center for Stable Isotope-Resolved Metabolomics
- 10:00-10:15 am **Discussion**
Moderator: Richard Yost, Southeast Center for Integrated Metabolomics

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| 9:00-10:00 am | Concurrent Session: Breakout Session for Early Career Researchers (Room H) <i>Moderator: Richard Okita, National Institute for General Medical Science</i> |
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- 9:00-9:15 am **NIH Funding Process and Opportunities in Metabolomics**
Barbara Gerratana, National Institute for General Medical Sciences

9:15-9:30 am **An Introduction to NIH Peer Review**
Kee Pyon, Center for Scientific Review

9:30-10:00 am **Discussion**
Moderator: Richard Okita, National Institute for General Medical Sciences

10:15-10:35 am **Break**

10:35 am-12:20 pm **Session 3: Data Analysis, Processing, and Integration**
Moderator: Oliver Fiehn, NIH West Coast Metabolomics Center at UC Davis

10:35-11:05 am **Data Analysis, Processing, and Integration: From Raw Data to Biomedical Information**
Oliver Fiehn, NIH West Coast Metabolomics Center at UC Davis

11:05-11:20 am **Bioinformatics Tools for Network-Based Analysis and Visualization of Metabolomics Data**
Alla Karnovsky, Michigan Regional Comprehensive Metabolomics Resource Core

11:20-11:35 am **The Highs and Lows of Metabolomics: Implications for Clinical Diagnostics**
Gary Patti, Washington University in St. Louis

11:35-11:50 am **Structural Equation Modeling: Linking Exposure to Health Outcomes via the Metabotype**
Susan Sumner, NIH Eastern Regional Comprehensive Metabolomics Resource Core at RTI International

11:50 am-12:05 pm **Metabolomics Workbench: Online Data Processing, Integration, and Analysis Tools for the Metabolomics Research Community**
Eoin Fahy, University of California San Diego

12:05-12:20 pm **Discussion**
Moderator: Oliver Fiehn, NIH West Coast Metabolomics Center at UC Davis

12:20-1:20 pm **Lunch Break**

1:20-3:30 pm **Poster session, Natcher Atrium**

3:30-5:00 pm **Session 4: Best Practices in Metabolomics and Data Sharing**
Moderator: Shankar Subramaniam, University of California San Diego

3:30-4:00 pm **Best Practices in Metabolomics: The Ring Trial**
Shankar Subramaniam, University of California San Diego

4:00-4:15 pm **Best Practices in Metabolomics and Data Sharing: MassBank of North America**
Oliver Fiehn, NIH West Coast Metabolomics Center at UC Davis

- 4:15-4:30 pm **The Metabolomics Workbench: Overview and Recent Developments**
Eoin Fahy, University of California San Diego
- 4:30-4:45 pm **Data Sharing, Standards and Workflows in Metabolomics; Towards Data Analysis Reproducibility**
Reza Salek, The European Bioinformatics Institute (EMBL-EBI)
- 4:45-5:00 pm **Discussion**
Moderator: Shankar Subramaniam, University of California San Diego

Day 3: Thursday, September 29, 2016

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| 8:30-9:45 am | Session 5: Innovations in Metabolomics Training Moderator: Susan Sumner, NIH Eastern Regional Comprehensive Metabolomics Resource Core at RTI International |
| 8:30-9:00 am | Innovations in Metabolomics Training Susan Sumner, NIH Eastern Regional Comprehensive Metabolomics Resource Core RTI International |
| 9:00-9:15 am | Progress of Metabolomics Training: Workshop and Outreach Stephen Barnes, University of Alabama Birmingham |
| 9:15-9:30 am | Metabolomics in Medicine (MiM): Online Introduction of Clinicians and Researchers to Metabolomics Martin Kohlmeier, University of North Carolina |
| 9:30-9:45 am | Discussion Moderator: Susan Sumner, NIH Eastern Regional Comprehensive Metabolomics Resource Core at RTI International |
| 9:45-10:05 am | Break |
| 10:05-11:20 am | Session 6: Metabolomics Program Trainees Moderator: Barbara Spalholz, National Cancer Institute, NIH |
| 10:05-10:20 am | Isotopomer Spectral Analysis of Cholesterol Biosynthesis In-Vivo Reveals Multiple Tissue-Specific, Flux-Dependent Pathways Matthew Mitsche, University of Texas Southwestern Medical Center |
| 10:20-10:35 am | Deciphering the Biofilm-Macrophage Interactome Mary Cloud Ammons, Montana State University |

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| 10:35-10:50 am | Maternal Early Pregnancy Serum Metabolomics Profile and Abnormal Vaginal Bleeding as Predictors of Placental Abruption <i>Bizu Gelaye, Harvard University, Cambridge</i> |
| 10:50-11:05 am | Sex-Specific Metabolic and Epigenetic Changes in Patients with Alzheimer's Disease <i>Eugenia Trushina, Mayo Clinic</i> |
| 11:05-11:20 am | Discussion <i>Moderator: Barbara Spalholz, National Cancer Institute, NIH</i> |
| 11:20-11:30 am | Closing Remarks |
| 11:30 am | Meeting Adjournment |
| 11:45 am-2:00 pm | EC and ESP Meetings (Closed Meetings) |
| 11:45 am-1:00 pm | EC and ESP Combined Meeting (Working Lunch; Balcony B) |
| 1:00-2:00 pm | EC and ESP Meetings (EC in Balcony B; ESP in Room H) |