

Programme

Microbial Secondary Metabolites in Microbiomes 2024

9 June 2024

13:00 - 13:45 **Workshop and conference registration**

Poster set up opportunity

14:00 - 17:00 **Integration of metabolomics and genomics data**

14.00-14.15 **Introduction**

Scott Alexander Jarmusch, Postdoc, CeMiSt, DTU, Lyngby, Denmark

Metabolomics and Data Integration

14.15-15.00 **Pre-processing in MZMine, FERMO** (Hands-on work),

Mitja Zdouc, Postdoc, Wageningen University, The Netherlands

15.00-15.30 **The chemical underground: metabolomic approaches for connecting metabolites, plants, and microbes in soils** (Lecture/discussion),

Trent Russell Northen, Senior Scientist , Lawrence Berkeley National Laboratory, Berkeley, US

15.30-15.45 Coffee break

Genomics and Data Integration

15.45-16.30 **Integrating microbiome omics, Anvi'o** (Hands-on work)

Jacob Agerbo Rasmussen, Postdoc, GLOBE Institute, UCPH, Copenhagen, Denmark

16.30-17.00 **Mind the gap: challenges and opportunities in paired 'omics** (Lecture/discussion)

Serina Robinson, Group leader, tenure-track, Swiss Federal Institute of Aquatic Science and Technology, Dübendorf, Switzerland

17:00 - 18:00 **Conference registration and check in**

18:00 - 19:00 **Opening lecture**

Garden-Variety Thoughts on Microbial Secondary Metabolites

Roberto Kolter, professor emeritus, Harvard Medical School, US

19:00 - 21:00 **Welcome reception and dinner buffet**

07:00 - 09:00 **Breakfast**

08:15 - 08:45 **Conference registration**

09:00 - 09:15 **Welcome**

Welcome by **Lone Gram**, CeMiSt Center leader, and **Bjarke Bak Christensen**, Head of DTU Bioengineering

09:15 - 11:45 **Session 1: Synthesis and production of secondary metabolites in microbiomes**

Chairs: CharLotte Held Gotfredsen, Christoffer Hæg Skoven

9.15- 9.45 **Computational metabolomics in discovery of bioactive natural products from cultivable marine mycobiomes**
Deniz Tasdemir, GEOMAR Helmholtz Centre for Ocean Research Kiel, Germany

9.45-10.15 **Deep Ocean Biodiscovery - diving into the abyss**
Katherine Duncan, University of Newcastle, Newcastle upon Tyne, UK

10.15-10.45 **Coffee break**

10.45-11.05 **Exploring biosynthetic potential & microbial biodiversity in Southern California's deep ocean**
Johanna Gutleben, Scripps Institution of Oceanography, UC San Diego, US

11.05-11.25 **Biosynthetic potential of deep-sea sponge microbiomes**
Maria Dell, Eidgenössische Technische Hochschule (ETH) Zurich, Zürich, Switzerland

11.25-11.45 **Leveraging scale to accelerate natural product discovery**
Nigel Mouncey, Joint Genome Institute(JGI), Berkeley, CA, US

11:45 - 13:00 **Lunch**

13:00 - 16:00 **Session 2: Molecular mechanisms and regulation of microbial secondary metabolites in microbiomes.**

Chairs: Shengda Zhang, Lauge Alfatsen

13.00-13.30 **Biosynthesis and molecular monitoring of harmful algal bloom toxins**
Bradley S Moore, UC San Diego & Scripps Institution of Oceanography, University of California San Diego, La Jolla, US

13.30-14.00 **Metabolic interactions in the soil microbiome**
Elizabeth Shank, University of Massachusetts, Worcester, US

14.00-14.30 **Coffee break**

14.30-14.50 **Coupling of secondary metabolite production in *Bacillus subtilis***
Caja Dinesen, DTU & Leiden University, Lyngby, Denmark

14.50-15.10 **A metabolomics approach to uncover natural products from human-derived streptomycetes**
Nicola U. Thome, Leiden University, Leiden, The Netherlands

15.10-15.30 **A bottom-up approach to unravel the role of quorum sensing in particle-associated marine microbial communities**
Rachel Gregor, Massachusetts Institute of Technology (MIT), Cambridge, MA, US

15.30-16.00 **Coffee break**

16:00 - 18:00 **Poster session**

19:00 - 21:00 **Dinner**

07:00 - 09:30 **Breakfast**
Check out opportunity

09:30 - 12:00 **Session 3: Biotransformation and interactions of/between microbial secondary metabolites in microbiomes**

Chairs: Lars Jelsbak, Peter Bing Svendsen

9.30- 10.00 Impact of antibiotic-degrading resistance on microbial community structure
Alex Hall, Eidgenössische Technische Hochschule (ETH) Zurich, Zürich, Switzerland

10.00-10.30 Visualizing specialized metabolite production in microbes
Laura Sanchez, University of California Santa Cruz, Santa Cruz, US

10.30-11.00 Coffee break

11.00-11.20 Cyclic-lipopeptides produced by *Pseudomonas* spp. are degraded by bacterial competitors
Carlos N. Lozano-Andrade, CeMiSt, DTU, Lyngby, Denmark

11.20-11.40 Discovery of novel metabolites and biotransformations in cellulose-based fungi–bacteria co-cultures
Jethro Hemmann, Leibniz-HKI, Jena, Germany

11.40-12.00 Identification of specialized root exudates associated with microbiome assembly of wild and domesticated tomato
Jie Hu, Netherland Institute of Ecology, Wageningen, Netherlands

12:00 - 13:00 **Lunch**

13:00 - 15:30 **Session 4: Secondary metabolite mediated interactions in microbiomes and microbiome-host-systems**

Chairs: Ling Ding, Kristoffer Ioannis Tang Kordatos

13.00-13.30 Back to the Roots
Jos Raaijmakers, Netherland Institute of Ecology, Leiden University, Leiden, the Netherlands

13.30-14.00 Specialized metabolites play functional and defensive roles in stingless bees' microbiomes
Mônica Tallarico Pupo, Universidade de São Paulo, Ribeirão Preto, Brazil

14.00-14.30 Coffee break

14.30-14.50 Co-culture of algal microbiome members *Sulfitobacter* sp. and *Halomonas* sp. inhibits fish pathogen *Vibrio anguillarum*
Dóra Smahajcsik, DTU Bioengineering, Lyngby, Denmark

14.50-15.10 gutMAGIC: gutMicrobiome analysis for metaGenomic identification of bioactive microbial compounds
Jacob Rasmussen, University of Copenhagen, Copenhagen, Denmark

15.10-15.30 Deciphering the antifungal activity of two ant-associated bacterial isolates: *Pseudomonas* sp. I3 and *Bacillus velenzensis* 11c.
Seven Nazipi Bushi, Aarhus University, Aarhus, Denmark

15:30 - 15:45 **Closing remarks**

15:45 - 17:00 **Networking and farewell**
