



37<sup>th</sup> Asilomar Conference on Mass Spectrometry  
October 7 - 11, 2022

**SINGLE-CELL MASS SPECTROMETRY**

**ORGANIZERS**

**Theodore Alexandrov** (EMBL)

**Yu-Ju Chen** (Institute of Chemistry, Academia Sinica)

**Ryan Kelly** (Brigham Young University)

**Zhibo Yang** (University of Oklahoma)

**PRELIMINARY PROGRAM**

*Subject to change.*

**FRIDAY, OCTOBER 7, 2022**

- 4:15 - 6:00 pm Name badge pick-up in Merrill Hall  
*Please have your proof of negative Covid test and proof of vaccination ready to share when you pick-up your badge.*
- 6:00 - 7:00 pm Asilomar Dinner, Crocker Dining Hall, for Asilomar lodgers.  
*If you are staying offsite and wish to have dinner with the group, purchase separate dinner tickets with your conference registration.*

**7:05 - 8:10 PM, Merrill Hall**

**OPENING SESSION**

- 7:05 - 7:15 pm Opening Remarks from conference organizers
- 7:15 - 7:45 pm Opening Plenary: Single Cell Proteomics; **John Yates III**, *The Scripps Research Institute, La Jolla*
- 7:45 - 7:55 pm Q & A
- 7:55 - 8:05 pm About the ASMS Asilomar Conference, Laura Sanchez or Jason Hogan, *ASMS Asilomar Committee*
- 8:05 - 8:10 pm Welcome to the reception presentation from this evening's sponsor

**8:10 - 9:30 PM, Merrill Hall**

**EVENING RECEPTION & POSTERS**

Snacks and drinks are provided at the reception thanks to this evening's reception sponsor. Last call for bar is 9:15 pm.

Posters are selected from submitted abstracts. We hope to have space to display all posters throughout the conference.

## SATURDAY, OCTOBER 8, 2022

7:30 - 9:00 am Asilomar Breakfast, Crocker Dining Hall, *for Asilomar lodgers only.*

### 9:00 - 11:30 AM, Merrill Hall

#### IMAGING MASS SPECTROMETRY OF SINGLE CELLS

There is a ten-minute gap after each talk for Q&A.

- 9:00 - 9:20 am Benefits and Recent Advances of MALDI-2 and t-MALDI-2 Mass Spectrometry for Imaging of Single Cells in Cultures and Tissues; **Klaus Dreiserwerd**, *University of Münster*
- 9:30 - 9:50 am From Tissues to Single Cells: Spatially Resolved Omics Integrating MALDI-MS Imaging with Chemical Derivatization; **Lingjun Li**, *University of Wisconsin Madison*
- 10:00 - 10:20 am High-Resolution Imaging of Biological Tissues using Nanospray Desorption Electrospray Ionization (nano-DESI) Mass Spectrometry; **Julia Laskin**, *Purdue University*
- 10:30 - 11:00 am Coffee Break
- 11:00 - 11:20 am Multiomics Spatial Cellular/ Subcellular Biology Using Frontier Mass Spectrometry GCIB-SIMS; **Hua Tian**, *Pennsylvania State University*

### 11:30 AM - 12 PM, Merrill Hall

#### SHORT TALKS

Series of short talks selected from submitted abstracts.

12:00 - 1:00 pm Asilomar Lunch, Crocker Dining Hall, *for Asilomar lodgers and attendees who pay the offsite fee during online registration.*

### 1:15 - 2:15 PM, Merrill Hall

#### SINGLE-CELL DATA ANALYSIS AND BIOINFORMATICS

There is a ten-minute gap after each talk for Q&A.

- 1:15 - 1:35 pm Revealing Metabolic Cell States with High-throughput Spatial Single-cell Metabolomics; **Theodore Alexandrov**, *EMBL Heidelberg*
- 1:45 - 2:05 pm Improving Computational Analysis of Single Cell Proteomics Data; **Sam Payne**, *Brigham Young University*

### 2:15 - 3:45 PM, Merrill Hall

#### SINGLE-CELL PROTEOMICS I

There is a ten-minute gap after each talk for Q&A.

- 2:15 - 2:35 pm Increasing the Throughput of Sensitive Proteomics by plexDIA; **Nikolai Slavov**, *Northeastern University*
- 2:45 - 3:05 pm A Versatile Platform for High Throughput Single Cell Proteomics - Understanding Proteome Heterogeneity in Diverse Tissues; **Claudia Ctordecka**, *Broad Institute of MIT and Harvard*
- 3:15 - 3:35 pm High-Throughput Platform for Automatic Single Cell Proteomics Sample Preparation; **Yu Gao**, *University of Illinois, Chicago*

3:45 – 4:00 pm      GROUP PHOTO

**SATURDAY, OCTOBER 8, 2022 - Continued**

3:45 - 6:00 pm      FREE TIME

6:00 - 7:00 pm      Asilomar Dinner, Crocker Dining Hall, *for Asilomar lodgers.*  
*If you are staying offsite and wish to have dinner with the group, purchase separate dinner tickets with your conference registration.*

**7:15 – 7:50 PM, Merrill Hall**

**ROUND I: POSTER HIGHLIGHT TALKS**

These are lightning-style talks featuring interested poster presenters.

Welcome to the reception presentation (5-min) from Bruker, sponsor of tonight's reception.

**7:50 - 9:30 PM, Merrill Hall**

**EVENING RECEPTION sponsored by Bruker & POSTERS**

Snacks and drinks are provided at the reception thanks to this evening's reception sponsor, Bruker.  
Last call for bar is 9:15 pm.

Posters are selected from submitted abstracts. We hope to have space to display all posters throughout the conference.



## SUNDAY, OCTOBER 9, 2022

7:30 - 9:00 am Asilomar Breakfast, Crocker Dining Hall, *for Asilomar lodgers only.*

### 9:00 AM - 12:00 PM, Merrill Hall

#### SINGLE-CELL PROTEOMICS II

There is a ten-minute gap after each talk for Q&A.

- 9:00 - 9:20 am Exploring Broadband DDA for Fast and In-depth Single-Cell Proteomics; **Ryan Kelly**, *Brigham Young University*
- 9:30 - 9:50 am Intelligent Data Acquisition Strategies for Single Cell Proteomics; **Christopher M. Rose**, *Genentech*
- 10:00 - 10:20 am Application of Single Cell Proteomics (nanoPOTS) to Investigate Human Nervous Tissue Samples; **Amanda Guise**, *Biogen*
- 10:30 - 11:00 am Coffee Break
- 11:00 - 11:20 am Three-dimensional Feature Matching Improves Sensitivity and Throughput of Single-Cell Proteomics; **Ying Zhu**, *Pacific Northwest National Laboratory*
- 11:30 - 11:50 am Highly Streamlined Microfluidics-based Strategy for Single Cell Proteomics; **Yu-Ju Chen**, *Academia Sinica, Institute of Chemistry*

12:00 - 1:00 pm Asilomar Lunch, Crocker Dining Hall, *for Asilomar lodgers and attendees who pay the offsite fee during online registration.*

1:00 - 6:00 pm FREE AFTERNOON

6:00 - 7:00 pm Asilomar Dinner, Crocker Dining Hall, *for Asilomar lodgers.*  
*If you are staying offsite and wish to have dinner with the group, purchase separate dinner tickets with your conference registration.*

### 7:15 – 7:50 PM, Merrill Hall

#### ROUND II: POSTER HIGHLIGHT TALKS

These are lightning-style talks featuring interested poster presenters.

Welcome to the reception presentation (5-min) from Cellenion, sponsor of tonight's reception.

### 7:50 - 9:30 PM, Merrill Hall

#### EVENING RECEPTION & POSTERS

Snacks and drinks are provided at the reception thanks to this evening's reception sponsor, Cellenion.

Last call for bar is 9:15 pm.

Posters are selected from submitted abstracts. We hope to have space to display all posters throughout the conference.

**CELLENION**   
A BICO COMPANY

## MONDAY, OCTOBER 10, 2022

7:30 - 9:00 am Asilomar Breakfast, Crocker Dining Hall, *for Asilomar lodgers only.*

### 9:00 AM - 12:00 PM, Merrill Hall

#### SINGLE-CELL METABOLOMICS

There is a ten-minute gap after each talk for Q&A.

9:00 - 9:20 am *In-situ* Single Cell Metabolomics to Explore Cellular Heterogeneity and Hidden Phenotypes; **Akos Vertes**, *George Washington University*

9:30-9:50 am Single Cell Metabolomics in Plants Using the Laser Ablation Electrospray Ionization Mass Spectrometry-based 'Molecular Microscope'; **Chris Anderton**, *Pacific Northwest National Laboratory*

10:00 - 10:20 am Scalable Subcellular CE-HRS for Assessing Cell Heterogeneity in Space-Time; **Peter Nemes**, *University of Maryland, College Park*

10:30 – 11:00 am Coffee Break

11:00 - 11:20 am Using Single Cell Metabolomics to Determine Cell Heterogeneity; **Zhibo Yang**, *University of Oklahoma*

11:30 - 11:50 am Sphingolipids Control Dermal Fibroblast Heterogeneity; **Giovanni D'Angelo**, *EPFL*

12:00 - 1:00 pm Asilomar Lunch, Crocker Dining Hall, *for Asilomar lodgers and attendees who pay the offsite fee during online registration.*

### 1:15 - 2:15 PM, Merrill Hall

#### APPLICATIONS IN MEDICINE AND PHARMACOLOGY

There is a ten-minute gap after each talk for Q&A.

1:15-1:35 pm Cardiomyocyte Heterogeneity: Altered Protein Isoform and Subproteome Distribution; **Jennifer Van Eyk**, *Cedars Sinai Medical Center*

1:45 - 2:05 pm Analysis of Single Liver Cells to Study Drug Uptake, Metabolism, and Drug-induced Phospholipidosis at the Single Cell Level; **Liliana Pedro**, *Novartis Institutes for Biomedical Research*

### 2:15 - 3:30 PM, Merrill Hall

#### SHORT TALKS

Series of short talks selected from submitted abstracts.

3:30 - 6:00 pm FREE TIME

6:00 - 7:00 pm Asilomar Dinner, Crocker Dining Hall, *for Asilomar lodgers.*  
*If you are staying offsite and wish to have dinner with the group, purchase separate dinner tickets with your conference registration.*

**MONDAY, OCTOBER 10, 2022 - *Continued***

**7:15 - 8:10 PM, Merrill Hall**

**CLOSING SESSION**

7:15 - 7:45 pm	Closing Plenary: <b>Jonathan Sweedler</b> , <i>University of Illinois at Urbana-Champaign</i>
7:45 - 7:55 pm	Q & A
7:55 - 8:05 pm	Closing Remarks from conference organizers
8:05 - 8:10 pm	Welcome to the reception presentation from this evening's sponsor

**8:25 - 10:00 PM, Fire Pit below Crocker Dining Hall**

**BONFIRE & S'MORES**

If you are not familiar with a 'S'more' (graham crackers, chocolate bar, and toasted marshmallow) you will learn!  
It's sticky and delicious!

**TUESDAY, OCTOBER 11, 2022**

7:30 - 9:00 am Asilomar Breakfast, Crocker Dining Hall, *for Asilomar lodgers only.*