



Write your name here:

37th Asilomar Conference on Mass Spectrometry

SINGLE-CELL MASS SPECTROMETRY

Friday, October 7 - Tuesday, October 11, 2022
Asilomar Conference Center, Pacific Grove, CA

Organizers

Theodore Alexandrov, *EMBL*

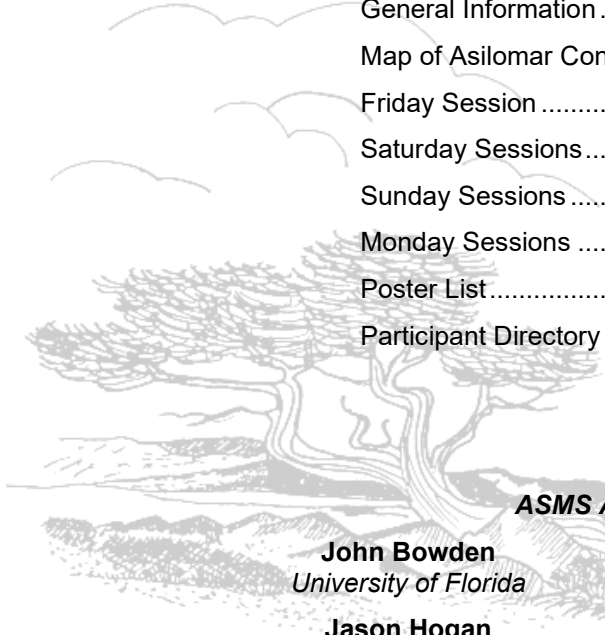
Yu-Ju Chen, *Institute of Chemistry, Academia Sinica*

Ryan Kelly, *Brigham Young University*

Zhibo Yang, *University of Oklahoma*

Table of Contents

General Information	1
Map of Asilomar Conference Grounds	2
Friday Session	4
Saturday Sessions	5
Sunday Sessions	8
Monday Sessions	10
Poster List	12
Participant Directory	14



ASMS Asilomar Committee

John Bowden
University of Florida

Jason Hogan
Bristol Myers Squibb

Laura Sanchez
University of California, Santa Cruz

Susan Richardson, ASMS Board Representative
University of South Carolina

GENERAL INFORMATION

INTERNET ACCESS

There is complimentary wi-fi access in the session room (Merrill Hall), guest rooms and the Social Hall (main building).

To use the wi-fi in Merrill Hall (session room), please follow these instructions:

- Connect to the Asilomar Conference Network
- Passphrase is the word “conference” (lowercase)

MEALS AT ASILOMAR

For attendees lodging at Asilomar you will receive meal tickets for all meals beginning with dinner on Friday and ending with lunch on Tuesday. A vegetarian option is always available upon request at the meal line. *For Tuesday a box lunch has been requested for you, please use your remaining lunch ticket to pick up your box lunch on Tuesday morning, 7:45-9:00 am in Crocker Dining Hall.*

For attendees staying offsite you will have (3) lunch tickets. If for some reason you did not pay the offsite fee, there will be no tickets for you at registration. If you also purchased any dinner tickets they will also be available to you at registration.

For everyone, to-go lunches are available all days during lunch service hour. Simply go to the regular lunch window and request a “To-Go Lunch”. You can take your “To-Go Lunch” to the beach or find a nice perch on the campus.

EVENING RECEPTIONS

Friday, Saturday, and Sunday evenings an informal reception in Merrill Hall immediately following the evening session. These evening mixers are an opportunity to continue lively discussion and interact with fellow attendees.

SUNDAY AFTERNOON

There is a free afternoon. Attendees are encouraged to join others for outings. Suggest your own activity or sign up to join others. Sign-up sheets in Merrill Hall (session room).

MONDAY EVENING

Weather permitting, we will have a bonfire with s'mores at the firepit outside of Crocker Dining Hall following the final session. If you do not know what a s'more is, we will show you!

POSTER AWARDS

Five student and postdoc awards of \$100 each will be provided by the *Journal of Proteome Research*. Posters presented by students and postdocs are noted in the listing. Announcement of the five winners will be Monday evening.

PRESENTER GUIDELINES

Invited Speakers and Short Talk Speakers. Please arrive in the Merrill Hall 15-20 minutes prior to the start of the session to set up your device or load your presentation onto the conference computer (PC). Remember to have your own adapters handy to connect to HDMI if using your own device.

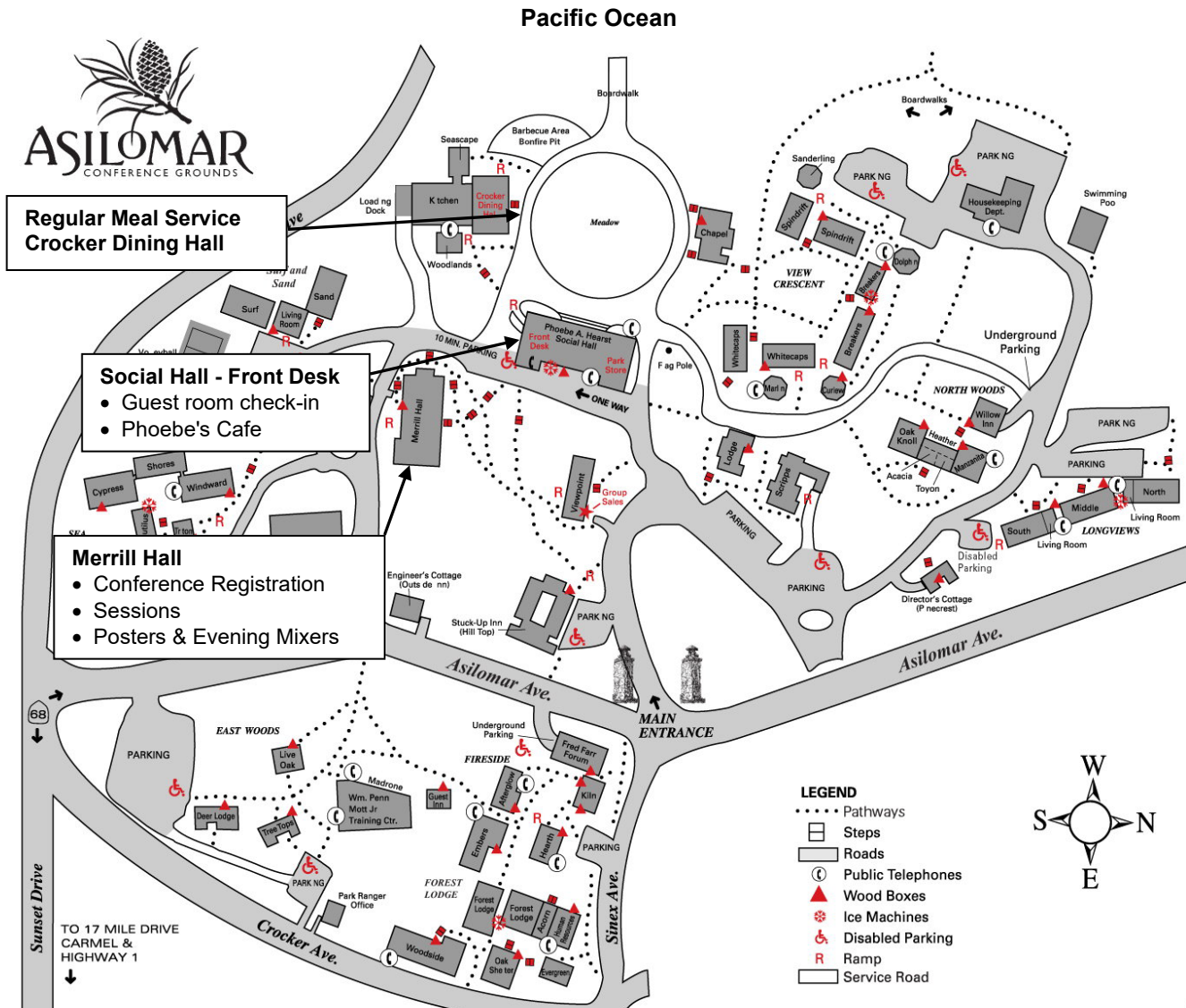
Poster Presenters. Mount posters by 6 pm Fri (or as soon as you arrive). Remove after Monday evening closing session (or just before plenary talk).

Poster Highlight Talks. Follow instructions you received by email. Please send slides for your 90-sec max talk to jennifer@asms.org by 1:00 pm on Saturday, October 9.

PROGRAM OVERVIEW

Friday	4:00 - 6:00 pm	.....	Badge Pickup
	6:00 - 7:00 pm	.....	Asilomar Dinner
	7:05 - 8:10 pm	.....	Session
	8:10 - 9:30 pm	.....	Reception & Posters
Saturday	7:30 - 9:00 am	.....	Asilomar Breakfast
	9:00 - 11:55 am	.....	Session
	12:00 - 1:00 pm	.....	Asilomar Lunch
	1:15 - 3:45 pm	.....	Session
	3:45 - 4:00 pm	.....	Group Photo
	4:00 - 6:00 pm	.....	Free Time
	6:00 - 7:00 pm	.....	Asilomar Dinner
	7:15 - 7:55 pm	.....	Session
	7:55 - 9:30 pm	.....	Reception & Posters
Sunday	7:30 - 9:00 am	.....	Asilomar Breakfast
	9:00 am - 12 pm	.....	Session
	12:00 - 1:00 pm	.....	Asilomar Lunch
	1:00 - 6:00 pm	.....	Free Afternoon
	6:00 - 7:00 pm	.....	Asilomar Dinner
	7:15 - 7:55 pm	.....	Session
	7:55 - 9:30 pm	.....	Reception & Posters
Monday	7:30 - 9:00 am	.....	Asilomar Breakfast
	9:00 am - 12 pm	.....	Session
	12:00 - 1:00 pm	.....	Asilomar Lunch
	1:15 - 2:40 pm	.....	Session
	2:40 - 6:00 pm	.....	Free Time
	6:00 - 7:00 pm	.....	Asilomar Dinner
	7:15 - 8:10 pm	.....	Session
	8:25 - 10:00 pm	.....	Bonfire & S'Mores!
Tuesday	7:30 - 9:00 am	.....	Asilomar Breakfast
	7:45 - 9:00 am	.....	Box lunch pick-up inside Crocker Dining Hall (Asilomar guests only)

ASILOMAR GROUNDS MAP



MONTEREY BAY AREA ATTRACTIONS

Sunday afternoon is scheduled free time. You are encouraged to relax on your own or with your fellow attendees. **Look for sign-up sheets in the session room** for those interested in group activities. Do you have a car and wish to visit the aquarium? Do you want to rent bikes with others and tour around the area? How about kayaking around Monterey Bay admiring sea otters and the renowned kelp forest as you paddle? Do you want to rent some clubs and play golf? **Be an instigator and list your activity on a sign-up sheet for others to join you.**

Some Ideas...

Accessible by foot, bus, bike (there are bikes for rent at Asilomar) or by rental car:

- In Monterey - Monterey Bay Aquarium, Fisherman's Wharf, Cannery Row, kayaking on the bay.
- Pebble Beach attractions include the 17-Mile Drive which is accessible free-of-charge on foot or enter by car for a fee.

Accessible by car:

- Carmel Valley is home to many wineries, farms, ranches and the historic Carmel Mission. Hiking in Big Sur or Point Lobos.

At Asilomar:

- Walking trails and self-guided tours throughout the Asilomar campus. Inquire at front desk for details.



Welcome to the conference!

The ongoing single-cell revolution and the rise of single-cell -omics approaches, in particular, single-cell RNA-sequencing highlighted by Science as the Breakthrough of the Year in 2018, have revealed to us the hidden world of cellular heterogeneity, novel cell types, and cell population dynamics. The discoveries enabled by these technologies are transforming our understanding of biology and medicine by decoupling functions, phenotype, and types of individual cells. Most of these single-cell approaches are based on sequencing, flow cytometry, and microscopy, which have a common limitation in that they cannot capture, track, or elucidate the molecular makeup of cells with respect to their proteome, lipidome or metabolome. Single-cell mass spectrometry is emerging as a necessary, valuable, and long-demanded technology to bridge this critical gap.

Until very recently, single-cell mass spectrometry was out of reach due to limitations in sample preparation, separations, and MS instrumentation. However, in the past years, several key technological breakthroughs opened the field of single-cell mass spectrometry for much wider development and use. For example, sensitivity improvements in MS instrumentation through gains in ion transmission and utilization efficiency have resulted in zeptomole detection limits that are compatible with in-depth, untargeted single-cell biochemical analysis. In addition, imaging mass spectrometry approaches have reached single-cell resolution, enabling in situ detection of metabolites, lipids, and drugs in single cultured cells as well as single-cell regions in tissue sections.

Presently, there is an exponential growth of single-cell approaches in mass spectrometry. Numerous studies have demonstrated the metabolome, lipidome or proteome to be characteristic for the cell type, and how it is changed upon perturbation. Overall, by now there is a growing and enthusiastic community of single-cell mass spectrometry method developers and those who are driven by applications of single-cell mass spectrometry biology and medicine.

Our aim for this conference is to bring together scientists interested in all aspects of single-cell mass spectrometry, from academia and industry including mass spectrometry vendors, big pharma, and small and medium enterprises developing instrumentation, software, services and applications.

We have included ample time for Q&A and interactions between all attendees. We hope you to take the opportunity to engage, learn, and have enjoy your time at Asilomar, “the refuge by the sea”.

Theodore Alexandrov, Yu-Ju Chen, Ryan Kelly, and Zhibo Yang

Go Beyond

High throughput single cell proteomics

Uncover the full complexity of cellular diversity with single cell proteomics

By collaborating with the scientific community, we've developed innovations that enable single cell proteomics analysis. The Thermo Scientific™ Orbitrap Eclipse™ Tribrid™ and Thermo Scientific™ Orbitrap Exploris™ 480 MS delivers more proteins per single cell, with multiplexing hundreds of cells per day from different cell types and states. Generating maximum insights that assess cell heterogeneity and rare cells, so you can go beyond faster to biological discoveries.



Orbitrap Eclipse Tribrid Mass Spectrometer



Orbitrap Exploris 480
Mass Spectrometer



Learn more at thermofisher.com/singlecellproteomics

Unbiased, quantitative single cell 4D-Proteomics (SCP) research



Expanding the horizons of single cell research

Mass spectrometry-based proteomics has become an important tool for modern research in understanding biological function and disease mechanisms. Healthy or diseased tissues that seem homogenous are composed of cells with a variety of different proteomes. Deciphering the proteome of each single cell is key to fully understanding its function and has traditionally presented a major challenge.

- **4D-Proteomics™** - Unbiased single cell, immunopeptidomics and CCS-enabled PTM analysis (4D-Epiproteomics)
- **PASEF®, dia-PASEF and prm-PASEF acquisition** - PASEF enables acquisition at >100 Hz with ion focusing and removal of chemical noise for clean MS and MS/MS
- **Single Cell Sensitivity** - New ion source concept coupled to the PASEF principle
- **PaSER** - Real-time and quantitative processing for data dependent (DDA) and data independent acquisition (DIA). Run & Done

For more information please visit www.bruker.com

TIMS-QTOF MS

FRIDAY, OCTOBER 7, 2022

- 4:00 - 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 organizers: Theodore Alexandrov, Yu-Ju Chen, Ryan Kelly, and Zhibo Yang
- 7:15 - 7:45 pm Jonathan Sweedler, presiding
Opening Plenary: Single Cell Proteomics; **John Yates III**, *The Scripps Research Institute, La Jolla*
Followed by 10 minutes Q&A
- 7:55 - 8:05 pm About the ASMS Asilomar Conference, **Jason Hogan**, *ASMS Asilomar Committee*
- 8:05 - 8:10 pm Welcome to the reception presentation; **Daniel Lopez Ferrer**, *Thermo Fisher Scientific*

8:10 - 9:30 PM, Merrill Hall EVENING RECEPTION sponsored by Thermo Fisher Scientific & POSTERS

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

Last call for bar is 9:15 pm.

All posters will be displayed for the entire conference. See poster list pages 12-13.

ThermoFisher
S C I E N T I F I C

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.

Akos Vertes, presiding

- | | |
|------------------|---|
| 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; Jens Soltwisch , <i>University of Münster</i> |
| 9:30 - 9:50 am | From Tissues to Single Cells: Spatially Resolved Omics Integrating MALDI-MS Imaging with Chemical Derivatization; Lingjun Li , <i>University of Wisconsin Madison</i> |
| 10:00 - 10:20 am | High-Resolution Imaging of Biological Tissues using Nanospray Desorption Electrospray Ionization (nano-DESI) Mass Spectrometry; Julia Laskin , <i>Purdue University</i> |
| 10:30 - 11:00 am | Coffee Break |
| 11:00 - 11:20 am | Multimomics Spatial Cellular/ Subcellular Biology Using Frontier Mass Spectrometry GCIB-SIMS; Hua Tian , <i>Pennsylvania State University</i> |

11:30 - 11:55 AM, Merrill Hall

SHORT TALKS

Each short talk will be 10 minutes followed by a 2-minute gap for Q&A.

Yu-Ju Chen, presiding

- | | |
|------------------|--|
| 11:30 - 11:40 pm | Adventures in Highly Heterogenous Single-Cell Proteomics – A Case Study on Dissociated Mouse Aorta; Sarah J. Parker , <i>Cedars-Sinai Medical Center, Los Angeles, CA</i> |
| 11:42 – 11:52 pm | Would Improving ESI Sample Input Efficiency By 4 Orders of Magnitude Aid “Single” Cell MS? ESI Without a Cone-Jet; Drew Sauter , <i>Nanoliter, LLC, Henderson, NV</i> |

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

See next page for Saturday afternoon program.

SATURDAY, OCTOBER 8, 2022 - *continued*

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.

Chris Anderton, presiding

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

2:15 - 3:45 PM, Merrill Hall SINGLE-CELL PROTEOMICS I

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

Ying Zhu, presiding

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

3:45 - 4:00 pm GROUP PHOTO

4:00 - 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.

See next page for Saturday evening program.

SATURDAY, OCTOBER 8, 2022 - *continued*

7:15 – 7:55 PM, Merrill Hall SHORT TALKS (7:15 - 7:40 pm)

Each short talk will be 10 minutes followed by a 2-minute gap for Q&A.

Zhibo Yang, presiding

- 7:15-7:25 pm Morphology-Guided Deep Learning Facilitates Mass Spectrometry Imaging of Single GABAergic Neurons in the Brain; **Per Andren**, *Uppsala University, Uppsala, Sweden*
- 7:27 - 7:37 pm Single Cell Proteomics (SCP) in Autism Syndrome Disorders (ASD): A Concept for Neurodevelopmental Pathologies Approach; **Aline M.A. Martins**, *The Scripps Research Institute, La Jolla, CA*

ROUND I: POSTER HIGHLIGHT TALKS (7:40 - 7:49 pm) *Six 90-second lightning-style talks featuring poster presenters.*

Theodore Alexandrov, presiding

Jens Soltwisch (Institute of Hygiene, University of Muenster, Muenster, Germany)
t-MALDI-2-MS Imaging of Single Cells with 1 to 4 μm^2 Pixel Size – A First Glimpse at Intracellular Lipid Distribution
Visit Jens' poster #11.

Holly-May Lewis (University of Surrey, Guildford, UK)
Single Cell Lipidomics and Drug Measurement Using Nanocapillary Sampling Coupled to Liquid Chromatography Mass Spectrometry
Visit Holly-May's poster #17.

Mario Garcia Rodriguez (The Scripps Research Institute, La Jolla, CA)
Single-Step Encapsulation of Single Cells in Peptide Retaining UV-Curable Resin Via Submerged Electrospray
Visit Mario's poster #12.

Bini Ramachandran (The Medical Research Council Toxicology Unit, University of Cambridge, UK)
Single Cell Proteomics Analysis in a Core Facility – A Utopian or Achievable Dream??
Visit Bini's poster #20.

Yen-Chen Liao (Environmental Molecular Sciences Lab, Pacific Northwest National Laboratory, Richland, WA)
A Miniaturized Spin-Tip Workflow for Activity-based Protein Profiling of Low Microgram Samples
Visit Yen-Chen's poster #16.

Chris Adams (Bruker Daltonics, San Jose, CA)
Single Cell in Multiple Cell Types Using a CellenOne and dia-PASEF Combined with PaSER Identifies Thousands of Proteins at Scale
Visit Chris' poster #21

WELCOME TO THE RECEPTION (7:50 - 7:55 pm) Welcome to the reception presentation; **Chris Adams**, *Bruker*.

7:55 - 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.

All posters will be displayed for the entire conference. See poster list pages 12-13.



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.

Nikolai Slavov, presiding

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

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.

See next page for Sunday evening program.

SUNDAY, OCTOBER 9, 2022 - *continued*

7:15 – 7:55 PM, Merrill Hall SHORT TALKS (7:15 - 7:40 pm)

Each short talk will be 10 minutes followed by a 2-minute gap for Q&A.

Claudia Ctortecka, presiding

- 7:15-7:25 pm Spatially-Resolved Single Cell Drug and Lipidomics Measurement Using Nano Capillary Sampling and Liquid Chromatography Mass Spectrometry; **Melanie Bailey**, *University of Surrey, Guildford, UK*
- 7:27 - 7:37 pm Boosting the Sensitivity of Quantitative Single-Cell Proteomics with Photoactivation; **Trenton Peters-Clarke**, *University of Wisconsin-Madison, Madison, WI*

ROUND II: POSTER HIGHLIGHT TALKS (7:40 - 7:48 pm) Five 90-second lightning-style talks featuring poster presenters.

Peter Nemes, presiding

Jan Schwenzfeier (University of Münster, Institute of Hygiene, Münster, Germany)
Semi-Automated MALDI-2 MSI Workflow Allows for Rapid Acquisition of Single-Cell MS Data with Low Degree of Fragmentation
Visit Jan's poster #13.

Marion Pang (California Institute of Technology, Pasadena, CA)
Increasing Proteome Coverage by Reducing Peptide Complexity in Single-Cell Proteomics
Visit Marion's poster #15.

Kavi Vaidya (Oregon State University, Corvallis, OR)
Qualitative Assessment of Automated and Manual Single Cell Cloning Methods by Single Cell Proteomic Profiling
Check out Kavi's poster #14.

Cory Matsumoto (University of Illinois at Chicago, Chicago, IL)
Automated Container-less Cell Processing Method for Single-cell Proteomics
Visit Cory's poster #18.

Stanislau Stanisheuski (Oregon State University, Corvallis, OR)
Targeted Monitoring of Amino Acid Sequence Differences in Highly Homologous Engineered Proteins in Single Mammalian Cells
Visit Stanislau's poster #19.

Ramesh Katam (Florida A&M University, Tallahassee, FL)
Proteome Changes in Lung Cancer Cell Lines Treated with Grape Extracts: A Potential Study for Biomarkers
Visit Ramesh's poster #6.

WELCOME TO THE RECEPTION (7:50 - 7:55 pm) Welcome to the reception presentation; **Barbara McIntosh**, *Cellenion*.

7:55 - 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.

All posters will be displayed for the entire conference. See poster list on pages 12-13.



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.

Lingjun Li, presiding

- | | |
|------------------|--|
| 9:00 - 9:20 am | <i>In-situ</i> Single Cell Metabolomics to Explore Cellular Heterogeneity and Hidden Phenotypes; Akos Vertes , <i>George Washington University</i> |
| 9:30-9:50 am | Single Cell Metabolomics in Plants Using the Laser Ablation Electrospray Ionization Mass Spectrometry-based 'Molecular Microscope'; Chris Anderton , <i>Pacific Northwest National Laboratory</i> |
| 10:00 - 10:20 am | Scalable Subcellular CE-HRS for Assessing Cell Heterogeneity in Space-Time; Peter Nemes , <i>University of Maryland, College Park</i> |
| 10:30 – 11:00 am | Coffee Break |
| 11:00 - 11:20 am | Using Single Cell Metabolomics to Determine Cell Heterogeneity; Zhibo Yang , <i>University of Oklahoma</i> |
| 11:30 - 11:50 am | Sphingolipids Control Dermal Fibroblast Heterogeneity; Giovanni D'Angelo , <i>EPFL</i> |

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.

Amanda Guise, presiding

- | | |
|----------------|--|
| 1:15-1:35 pm | Cardiomyocyte Heterogeneity: Altered Protein Isoform and Subproteome Distribution; Jennifer Van Eyk , <i>Cedars Sinai Medical Center</i> |
| 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 , <i>Novartis Institutes for Biomedical Research</i> |

2:15 – 2:40 PM, Merrill Hall

SHORT TALKS

Each short talk will be 10 minutes followed by a 2-minute gap for Q&A.

Melanie Bailey, presiding

- | | |
|----------------|---|
| 2:15-2:25 pm | Optimizing Single Cell Proteomics on a Trapped Ion Mobility Mass Spectrometer for Label-Free Experiments; Dong-Gi Mun , <i>Mayo Clinic, Rochester, MN</i> |
| 2:27 - 2:37 pm | Integration of MALDI-MSI with Multiplexed Tissue Immunofluorescence on Serial Sections Enables Integrated Analysis of the Glioblastoma Microenvironment; Gerard Baquer , <i>Department of Neurosurgery, Brigham and Women's Hospital, Harvard Medical School, Boston, MA</i> |

MONDAY, OCTOBER 10, 2022 - *continued*

2:40 - 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 - 8:10 PM, Merrill Hall CLOSING SESSION

Ryan Kelly, presiding

7:15 – 7:20 pm Presentation of Student & Postdoc Poster Awards sponsored by *Journal of Proteome Research*, John Yates III

7:20 - 7:50 pm Closing Plenary: **Jonathan Sweedler**, *University of Illinois at Urbana-Champaign*

7:50 - 8:00 pm Q & A

8:00 - 8:10 pm Closing Remarks from conference organizers

8:10 - 8:15 pm Welcome to the reception presentation; **Katherine Tran**, *SCIEX*

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!

Snacks and drinks are provided at the reception thanks to this evening's reception sponsor, Cellenion.
Last call for bar is 9:30 pm.



TUESDAY, OCTOBER 11, 2022

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

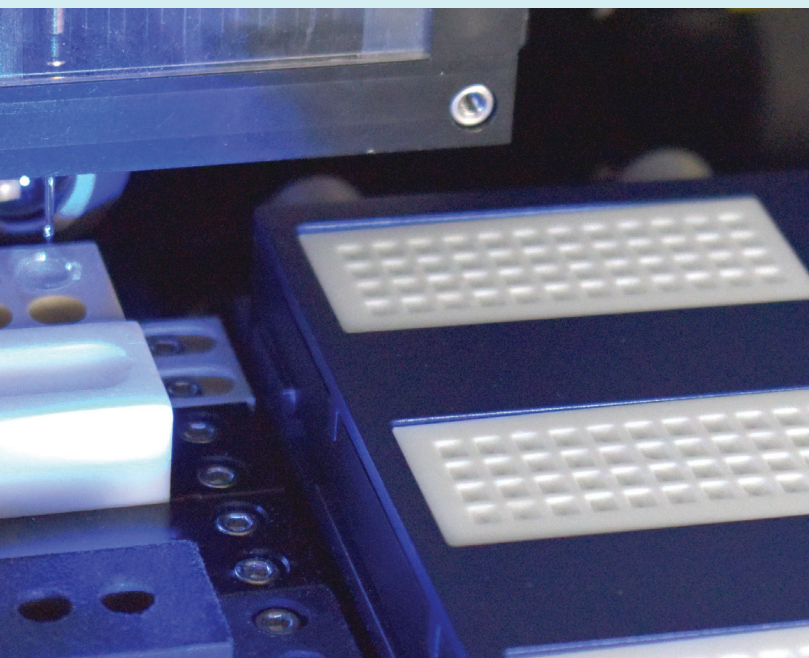
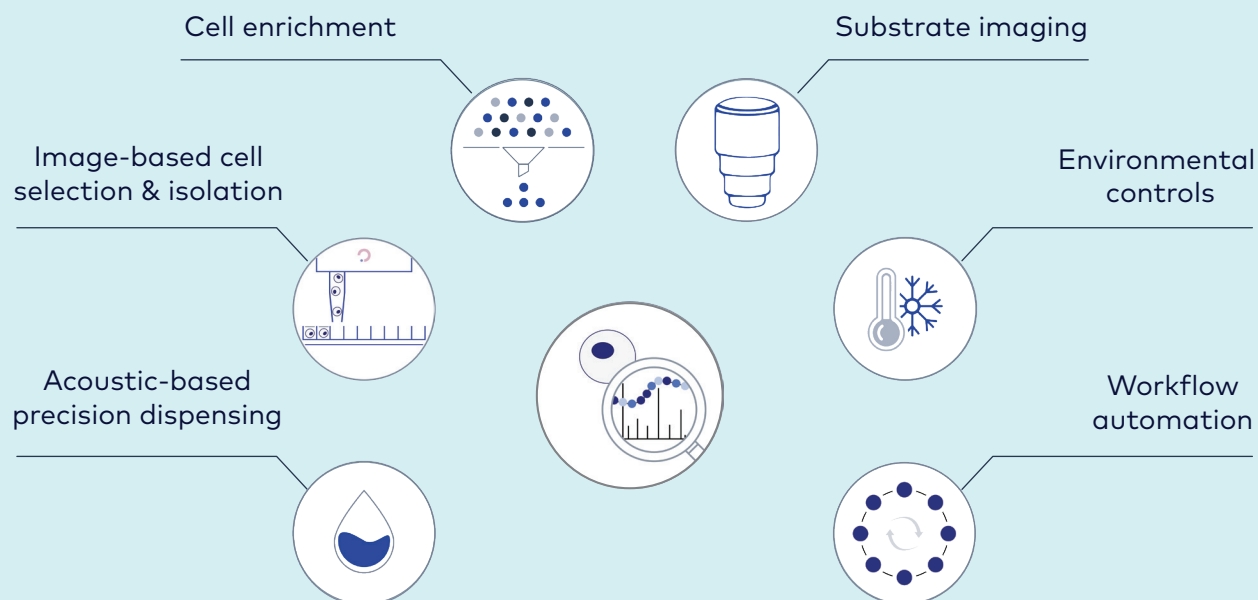
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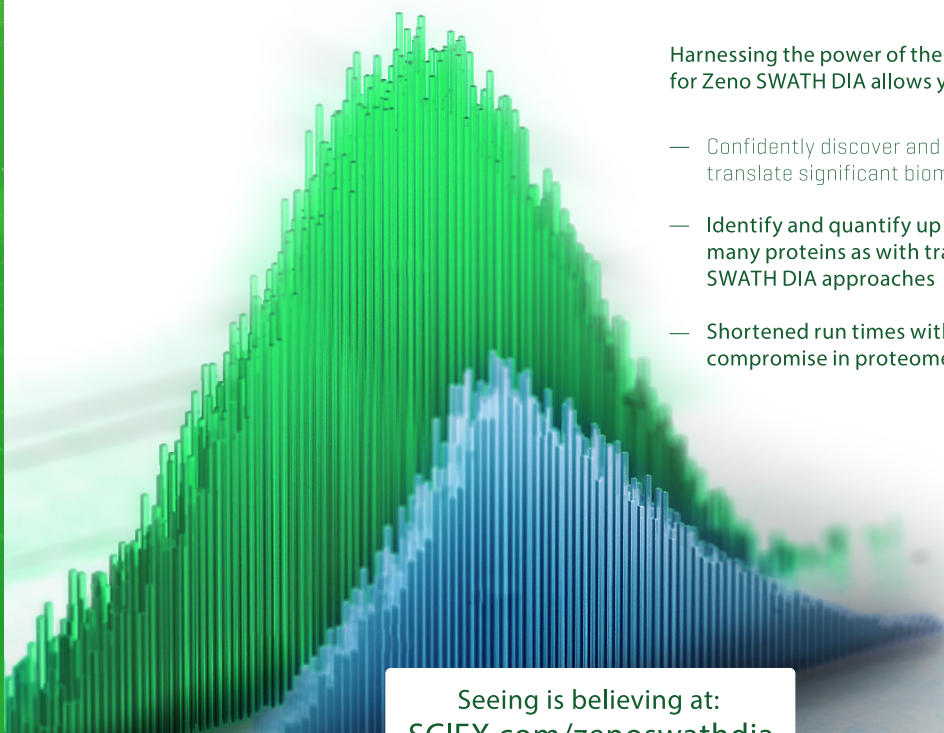
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- Identify and quantify up to twice as many proteins as with traditional SWATH DIA approaches
- Shortened run times with minimal compromise in proteome coverage



Seeing is believing at:
[SCIEX.com/zenoswathdia](https://www.sciex.com/zenoswathdia)

POSTER LIST

All posters will be displayed for the entire conference. Poster presenters will present during the evening receptions Friday, Saturday, and Sunday.

Poster awards! Five student and postdoc awards of \$100 each will be provided by the *Journal of Proteome Research*. Posters presented by students and postdocs are noted in the listing.

Poster 01: **Stephen Barnes** (University of Alabama at Birmingham, Birmingham, AL)
The Regional Metabolome of the Kidney – Approaching the Problem

Poster 02: **Melanie Bailey** (University of Surrey, Guildford, United Kingdom)
Single Particle - Inductively Coupled Plasma - Mass Spectrometry for Cellular Analysis: Exploring the Effect of Fixation on Elemental Distributions

Poster 03: **Heeyoun Hwang** (Korea Basic Science Institute, Cheongju, South Korea)
Multiplexed Single Cell Proteome Analysis Using proteoCHIP Preparation with LC-MS/MS

Poster 04: **Jason Derks** (Northeastern University, Boston, MA)
Balancing Throughput, Coverage, and Quantitative Accuracy of Single Cell Proteomics by Data Independent Acquisition
Eligible for poster award (graduate student presenter).

Poster 05: **Blessing Egbejiogu** (Louisiana State University, Baton Rouge, LA)
Infrared Laser Ablation Microsampling for Small Volume Proteomics of Formalin Fixed Paraffin Embedded Tissue
Eligible for poster award (graduate student presenter).

Poster 06: **Ramesh Katam** (Florida A&M University, Tallahassee, FL)
Proteome Changes in Lung Cancer Cell Lines Treated with Grape Extracts: A Potential Study for Biomarkers
Featured as a poster highlight talk on Sunday evening.

Poster 07: **Kate Stumpo** (Bruker Daltonics, Billerica, MA)
Single cell MALDI-2 Imaging with microGRID Technology

Poster 08: **Alexander Solivaïs** (University of Wisconsin-Madison, Chemistry, Madison, WI)
Spectrum Similarity Improves the Accuracy of Match Between Runs in Quantitative Single Cell Proteomics Data
Eligible for poster award (graduate student presenter).

Poster 09: **Erica Squires** (HP Inc., Corvallis, OR)
Dispense Qualification of Single Cell Proteomics Reagents on a Novel Inkjet-Based Single Cell Dispenser

Poster 10: **Bindesh Shrestha** (Waters Corporation)
High Spatial Resolution Metabolite and Lipid Imaging using MALDI and DESI on Multi-reflecting-QToF

Poster 11: **Jens Soltwisch** (Institute of Hygiene, University of Muenster, Muenster, Germany)
t-MALDI-2-MS Imaging of Single Cells with 1 to 4 μm^2 Pixel Size – A First Glimpse at Intracellular Lipid Distribution
Featured as a poster highlight talk on Saturday evening.

Poster 12: **Mario Garcia Rodriguez** (The Scripps Research Institute, La Jolla, CA)
Single-Step Encapsulation of Single Cells in Peptide Retaining UV-Curable Resin Via Submerged Electrospray
Featured as a poster highlight talk on Saturday evening.
Eligible for poster award (graduate student presenter).

Poster 13: **Jan Schwenzfeier** (University of Münster, Institute of Hygiene, Münster, Germany)
Semi-Automated MALDI-2 MSI Workflow Allows for Rapid Acquisition of Single-Cell MS Data with Low Degree of Fragmentation
Featured as a poster highlight talk on Sunday evening.
Eligible for poster award (graduate student presenter).

Poster list continues on the next page.

POSTER LIST

All posters will be displayed for the entire conference. Poster presenters will present during the evening receptions Friday, Saturday, and Sunday.

Poster awards! Five student and postdoc awards of \$100 each will be provided by the *Journal of Proteome Research*. Posters presented by students and postdocs are noted in the listing.

Poster 14: **Kavi Vaidya** (Oregon State University, Corvallis, OR)
Qualitative Assessment of Automated and Manual Single Cell Cloning Methods by Single Cell Proteomic Profiling
Featured as a poster highlight talk on Sunday evening.
Eligible for poster award (undergraduate student presenter).

Poster 15: **Marion Pang** (California Institute of Technology, Pasadena, CA)
Increasing Proteome Coverage by Reducing Peptide Complexity in Single-Cell Proteomics
Featured as a poster highlight talk on Sunday evening.
Eligible for poster award (graduate student presenter).

Poster 16: **Yen-Chen Liao** (Environmental Molecular Sciences Lab, Pacific Northwest National Laboratory, Richland, WA)
A Miniaturized Spin-Tip Workflow for Activity-based Protein Profiling of Low Microgram Samples
Featured as a poster highlight talk on Saturday evening.
Eligible for poster award (postdoc presenter).

Poster 17: **Holly-May Lewis** (University of Surrey, Guildford, UK)
Single Cell Lipidomics and Drug Measurement Using Nanocapillary Sampling Coupled to Liquid Chromatography Mass Spectrometry
Featured as a poster highlight talk on Saturday evening.
Eligible for poster award (postdoc presenter).

Poster 18: **Cory Matsumoto** (University of Illinois at Chicago, Chicago, IL)
Automated Container-less Cell Processing Method for Single-cell Proteomics
Featured as a poster highlight talk on Sunday evening.
Eligible for poster award (graduate student presenter).

Poster 19: **Stanislau Stanisheuski** (Oregon State University, Corvallis, OR)
Targeted Monitoring of Amino Acid Sequence Differences in Highly Homologous Engineered Proteins in Single Mammalian Cells
Featured as a poster highlight talk on Sunday evening.
Eligible for poster award (graduate student presenter).

Poster 20: **Bini Ramachandran** (The Medical Research Council Toxicology Unit, University of Cambridge, UK)
Single Cell Proteomics Analysis in a Core Facility – A Utopian or Achievable Dream??
Featured as a poster highlight talk on Saturday evening.

Poster 21: **Chris Adams** (Bruker Daltonics, San Jose, CA)
Single Cell in Multiple Cell Types Using a CellenOne and dia-PASEF Combined with PaSER Identifies Thousands of Proteins at Scale
Featured as a poster highlight talk on Saturday evening.

Poster 22: **Drew Sauter** (Nanoliter, LLC, Henderson, NV)
Would Improving ESI Sample Input Efficiency By 4 Orders of Magnitude Aid “Single” Cell MS? ESI Without A Cone-jet

Poster 23: **Gurmil Gendeh** (HP Inc., Palo Alto, CA)
Microfluidic Single-Cell Dispenser for Label-Free and TMT-Labeled Single-Cell Proteomics Sample Preparation



UPCOMING EVENTS

November 7 - 8, 2022

Fall Workshop

Data Independent Acquisition (DIA) and Getting to More Biology

Catamaran Resort & Hotel | San Diego, California

Organizers

Michael MacCoss (University of Washington) and Jennifer Van Eyk (Cedars Sinai Medical Center)

More information at <https://www.asms.org/conferences/fall-workshop>

January 5 – 6, 2022

Online Short Courses

Chemical Analysis of Cannabis and Cannabis-Derived Products

High Resolution Mass Spectrometry for Qualitative and Quantitative Analysis: An Introduction

Untargeted Metabolomics: From Basic Methods to Adv. Workflows and Isotope Labeling

More Information at <https://www.asms.org/conferences/online-short-courses>

January 19 - 22, 2023

33rd Sanibel Conference on Mass Spectrometry

Membrane Proteins and Their Complexes

Trade Winds Grand Island Resort | St. Pete Beach, Florida

Organizers

Michael T. Marty (University of Arizona), Wendy Sandoval (Genentech), and Julian Whitelegge (UCLA)

More information at <https://www.asms.org/conferences/sanibel-conference>

June 4 – 8, 2023

71st ASMS Conference on Mass Spectrometry and Allied Topics

George R. Brown Convention Center (GRB) | Houston, Texas

Abstract Deadline is February 3, 2023

More information at <https://www.asms.org/conferences/annual-conference>