

33rd Annual ISIMS Conference in Miami

Conference Schedule at a Glance



The schedule may be subject to changes. Please check regularly prior to the conference. The venues are listed in brackets after the items on the conference program.

Saturday, July 20th

- 09:00 - 09:30 | Short Course Registration (Offsite: FIU AHC4101)
- 09:30 - 17:00 | Short Course Day 1 (Offsite: FIU AHC4101)

Sunday, July 21st

- 09:30 - 16:00 | Short Course Day 2 (Offsite: FIU AHC4101)
- 18:00 - 19:00 | Conference Registration (Lobby)
- 19:00 - 21:00 | Welcome Reception (Celebration)

Monday, July 22nd

- 08:00 - 09:00 | Breakfast (Celebration)
- 09:00 - 09:30 | Conference Registration (Fantasy Foyer)
- 09:30 - 09:40 | Housekeeping, Welcome (Fantasy Ballroom)
- 09:40 - 09:45 | Introduction to Plenary Lecture
- 09:45 - 10:35 | Plenary Lecture: David H. Russell
- 10:35 - 10:50 | Break
- 10:50 - 12:00 | Session A: Applications of IMS and IMS-MS in Food Safety
- 12:00 - 12:10 | ISIMS Business: Information about Nomination
- 12:10 - 13:30 | Lunch (Celebration)
Lunchtime Discussion Topic: "ISIMS - Want to Become a ISIMS Member-At-Large?" By Andreas Walte
- 13:30 - 14:40 | Session B: Applications of IMS-MS and IMS-MSI in Proteomics I
- 14:40 - 15:00 | Break
- 15:00 - 16:40 | Session C: Applications of IMS-MS and IMS-MSI in Proteomics II
- 17:00 - 19:00 | Evening mixer (Fantasy Foyer)
- 17:00 - 19:00 | ISIMS Board Meeting (Fantasy Ballroom, for members of the ISIMS Board and Advisory Panel only)

Tuesday, July 23rd

- 08:00 - 09:00 | Breakfast (Celebration)
- 09:00 - 09:05 | Announcement (Fantasy Ballroom)
- 09:05 - 09:10 | Introduction to Plenary Lecture
- 09:10 - 10:00 | Plenary Lecture: Helen J. Cooper
- 10:00 - 10:50 | Session D: Enhancing Instrumental Performance of Stand Alone and Hyphenated Systems
- 10:50 - 11:10 | Break
- 11:10 - 12:00 | Session D: Enhancing Instrumental Performance of Stand Alone and Hyphenated Systems (continued)
- 12:00 - 12:10 | Conference Photo
- 12:10 - 13:30 | Lunch (Celebration)
Lunchtime Discussion Topic: "Science Communication - Dos and Donts"
- 13:30 - 14:40 | Session E: Harnessing the Powers of Ion Chemistry
- 14:40 - 15:00 | Break
- 15:00 - 16:00 | Session E: Harnessing the Powers of Ion Chemistry

16:45 - 20:00 | Depart for 3D printing workshop
17:00 - 19:00 | Evening mixer (Fantasy Foyer)
17:00 - 19:00 | FeMS+ Career development workshop (Fantasy Ballroom)

Wednesday, July 24th

08:00 - 09:00 | Breakfast (Celebration)
09:00 - 09:05 | Announcement (Fantasy Ballroom)
09:05 - 09:10 | Introduction to Plenary Lecture
09:10 - 10:00 | Plenary Lecture: Gary A. Eiceman
10:00 - 10:40 | Session F: Alternatives to Radioactivity - Plasma Ionization Sources in IMS
10:40 - 11:00 | Break
11:00 - 11:40 | Session F: Alternatives to Radioactivity - Plasma Ionization Sources in IMS
(continued)
11:40 - 12:30 | Session G: IMS-MS in Bio-applications
12:30 - 13:30 | Lunch (Celebration)
Lunchtime Discussion Topic: "Your own Start-Up - Where to begin?" by Peter
Fowler (Co-Founder of GP Ionics) and Ansgar Kirk (CEO of ACKISION)
13:30 - 16:30 | Poster Session and Vendor Exhibition
18:00 - 21:00 | Conference Banquet (Garden Pool Grounds)

Thursday, July 25th

08:00 - 09:00 | Breakfast (Celebration)
09:00 - 09:05 | Announcement (Fantasy Ballroom)
09:05 - 09:10 | Introduction to Plenary Lecture
09:10 - 10:00 | Plenary Lecture: Herbert H. Hill, Jr.
10:00 - 10:50 | Session H: New Developments in Ion Behavior and Ion Mobility Theory
10:50 - 11:10 | Break
11:10 - 11:50 | Session H: New Developments in Ion Behavior and Ion Mobility Theory
(continued)
11:50 - 12:10 | ISIMS Business: Nominee Presentation and Voting
12:10 - 13:30 | Lunch (Celebration)
Lunchtime Discussion Topic: "Identity and Representation in Science" by Fanny
Caroline Liu and Chris Pruefert
13:30 - 15:00 | Session I: Keep the World Safe with IMS and IMS-MS
15:00 - 15:20 | Break
15:20 - 16:20 | ISIMS Business: Election results, Travel and Poster Awards, ISIMS 2025 and
closing remarks

Friday, July 26th

Networking event: City Bus Tour & Boat Tour.

Monday, July 22nd

08:00 - 09:00	Breakfast (Celebration)		
09:00 - 09:30	Conference Registration (Fantasy Foyer)		
09:30 - 09:40	Housekeeping, Welcome (Fantasy Ballroom)		
09:40 - 09:45	Francisco Fernandez-Lima	Introduction to Plenary Lecture	
09:45 - 10:35	L1	David H. Russell	A journey from simple to next-generation IM-MS instruments for studies of biomolecule interactions facilitated by water
10:35 - 10:50	Break		

Applications of IMS and IMS-MS in Food Safety

10:50 - 11:00	A0	Introduction Session A	
11:00 - 11:20	A1	Annika Fechner	Development of a non-radioactive IMS device for the detection of food germ in slaughterhouses
11:20 - 11:40	A2	Kyle Lira	Characterizing the Molecular Composition of Polysorbates Using Both Conventional (DTIMS-MS) and High-Resolution Ion Mobility-Mass Spectrometry (TWSLIM-MS)
11:40 - 12:00	A3	Wolfgang Vautz	Rapid Identification of Bacteria for Health and Food Safety
12:00 - 12:10	ISIMS Business: Information about Nomination		
12:10 - 13:30	Lunch (Celebration)		

Lunchtime Discussion Topic: "ISIMS - Want to Become a Member-At-Large?" By Andreas Walte

Applications of IMS-MS and IMS-MSI in Proteomics I

13:30 - 13:40	B0	Introduction Session B	
13:40 - 14:00	B1	David L. Williamson	Determination of Sialic Acid Positioning in Ganglioside Isomers with Cyclic Ion Mobility Spectrometry and Tandem Mass Spectrometry
14:00 - 14:20	B2	Feifei Li	Comprehensive study of Alzheimer's disease mouse brain regional metabolite and lipid patterns based on desorption electrospray ionization with ion mobility mass spectrometry imaging
14:20 - 14:40	B3	Anna Anders	Unraveling RNA Unfolding: A Comparative Study of RNA Unfolding by Collision Induced Unfolding and Solution-Phase Unfolding
14:40 - 15:00	Break		

Applications of IMS-MS and IMS-MSI in Proteomics II

15:00 - 15:10	C0	Introduction Session C	
15:10 - 15:20	C1	Addison E. Bergman	Interpreting the Structural Polymorphism of Fc-Fusion Proteins using Ion Mobility-Collision Induced Unfolding (IM-CIU)

15:20 - 15:40	C2	Fanny Caroline Liu	Elucidating Structures of Protein Complexes by Collision-Induced Dissociation at Elevated Gas Pressures
15:40 - 16:00	C3	Juliane Gottwald	Identifying spatial differences and disease-related mechanisms in cardiac amyloidosis: MALDI TIMS imaging and histochemistry guide sampling for LC-MS/MS analysis
16:00 - 16:20	C4	Ian Webb	IMS/MS Combined with Chemical Crosslinking for Protein Structural Determination
16:20 - 16:40	S1	Erica Forsberg	Single Cell Lipidomics Using Trapped Ion Mobility Mass Spectrometry
17:00 - 19:00	Evening mixer (Fantasy Foyer)		
17:00 - 19:00	ISIMS Board Meeting (Fantasy Ballroom, for members of the ISIMS Board and Advisory Panel only)		

Tuesday, July 23rd

08:00 - 09:00	Breakfast (Celebration)		
09:00 - 09:05	Announcement (Fantasy Ballroom)		
09:05 - 09:10	Francisco Fernandez-Lima	Introduction to Plenary Lecture	
09:10 - 10:00	L2	Helen J. Cooper	FAIMS and proteins: From post-translational modifications to protein imaging in tissue

Enhancing Instrumental Performance of Stand Alone and Hyphenated Systems

10:00 - 10:10	D0	Introduction Session D	
10:10 - 10:30	D1	Marc-Aurèle Boillat	Electrospray Ionization Drift Tube Ion Mobility Spectrometer with Ultra-High Resolving Power: Design and Optimization
10:30 - 10:50	D2	Ansgar T. Kirk	Achieving low noise in ion mobility spectrometry without buying an expensive transimpedance amplifier (even though you totally should)
10:50 - 11:10	Break		
11:10 - 11:20	D3	Dylan Koch	Characterization of an open-source composite based differential mobility spectrometer
11:20 - 11:40	D4	Brian H. Clowers	Exploring Ion Dynamics through Gas-phase HDX: New Horizons for TW-SLIM
11:40 - 12:00	D5	Wenjian Sun	Recent Development and Applications in U-shaped Mobility Analyzer-Mass Spectrometry
12:00 - 12:10	Conference Photo		
12:10 - 13:30			

Lunch (Celebration)

Lunchtime Discussion Topic: "Science Communication - Dos and Donts"

Harnessing the Powers of Ion Chemistry

13:30 - 13:40	E0	Introduction Session E	
13:40 - 14:00	E1	Robert Ewing	Ion manipulation at ambient pressure
14:00 - 14:20	E2	Alexander Haack	On the Arrival Time Distribution of Reacting Systems in Drift-Tube Ion Mobility Spectrometry
14:20 - 14:40	E3	Hassan Umar	Gas Ion Distillation in Negative Ion Polarity
14:40 - 15:00	Break		
15:00 - 15:20	E4	Oliver Hecht	Studies on atmospheric pressure chemical ionization (APCI) on binary mixtures with IMS and MS
15:20 - 15:40	E5	Simon Höving	Setting the separation factor α for ketone monomers and dimers by the use of different drift gases
15:40 - 16:00	E6	Bert Ungethüm	Exploring different chemical ionization modes in a low-pressure IMS (HIKE or HiP-MS)
16:45 - 20:00	Depart for 3D printing workshop		
17:00 - 19:00	Evening mixer (Fantasy Foyer)		
17:00 - 19:00	FeMS+ Career development workshop (Fantasy Ballroom)		

Wednesday, July 24th

08:00 - 09:00	Breakfast (Celebration)		
09:00 - 09:05	Announcement (Fantasy Ballroom)		
09:05 - 09:10	Francisco Fernandez-Lima	Introduction to Plenary Lecture	
09:10 - 10:00	L3	Gary A. Eiceman	Occasional developments and surprises in ion mobility spectrometry: 1980-2024

Alternatives to Radioactivity - Plasma Ionization Sources in IMS

10:00 - 10:10	F0	Introduction Session F	
10:10 - 10:30	F1	Jiyao Wang	Effect of Ionic Wind on the sample distribution in corona discharge ion mobility spectrometer and application in lithium battery electrolyte leakage detection
10:30 - 10:40	F2	Caiyan Tian	Elucidation of discharge mechanism in He-, Ne-, Ar-, Kr-, Xe-Flexible μ Tube Plasmas
10:40 - 11:00	Break		
11:00 - 11:10	F3	Hao Song	Excitation and ionization of a diagnosis gas in front of the Flexible μ Tube Plasma and in a diagnosis tube
11:10 - 11:30	F4	Arthur Schiller	Innovative Plasma Ionization Source for Compact and Portable Ion Mobility Spectrometry Devices
11:30 - 11:40	F5	Luisa Speicher	New ionisation sources based on a Flexible μ -Tube Plasma

IMS-MS in Bio-applications

11:40 - 11:50	G0	Introduction Session G	
11:50 - 12:00	G1	Cassandra N. Fuller	Trapped Ion Mobility Spectrometry in tandem with Electron Capture Dissociation TOF MS/MS for bottom-up Histone Proteoform analysis
12:00 - 12:10	G2	Miguel Santos-Fernandez	Structural Characterization of Cyanodin Itopoisomers Using Hydrogen-Deuterium Exchange, Trapped Ion Mobility Spectrometry, and tandem Electron Capture Dissociation Mass Spectrometry
12:10 - 12:30	S2	Thomas Walker	New capabilities to enhance characterization of Higher Order Structure (HOS) of intact proteins/oligonucleotides, as well as isomers of lipids, metabolites, and polymeric compounds (e.g. PFAS) using a low field drift tube IM-MS design.
12:30 - 13:30	Lunch (Celebration)		
	Lunchtime Discussion Topic: "Your own Start-Up - Where to begin?" by Peter Fowler (Co-Founder of GP Ionics) and Ansgar Kirk (CEO of ACKISION)		
13:30 - 16:30	Poster Session and Vendor Exhibition		
18:00 - 21:00	Conference Banquet (Garden Pool Grounds)		

Thursday, July 25th

08:00 - 09:00	Breakfast (Celebration)		
09:00 - 09:05	Announcement (Fantasy Ballroom)		
09:05 - 09:10	Francisco Fernandez-Lima		
09:10 - 10:00	L4	Herbert H. Hill, Jr.	Development of Analytical Ion Mobility Spectrometry

New Developments in Ion Behavior and Ion Mobility Theory

10:00 - 10:10	H0	Introduction Session H	
10:10 - 10:30	H1	Francisco Fernandez-Lima	Trapped Somewhere in Ion Mobility Spectrometry
10:30 - 10:50	H2	Glenn E. Spangler	Application of Statistical Mechanics to Ion Mobility Spectrometry
10:50 - 11:10	Break		
11:10 - 11:30	H3	Gabe Nagy	Isolating the Contributions from Moments of Inertia in Mass Distribution-Based Isotopic Shifts with High-Resolution Cyclic Ion Mobility Separations
11:30 - 11:50	H4	Noah D. Roberts	Assessing the Additivity of Mass Distribution-Based Isotopic Shifts in High-Resolution Cyclic Ion Mobility Separations
11:50 - 12:10	ISIMS Business: Nominee Presentation and Voting		
12:10 - 13:30	Lunch (Celebration)		
	Lunchtime Discussion Topic: "Identity and Representation in Science" by Fanny Caroline Liu and Chris Pruefert		

Keep the World Safe with IMS and IMS-MS

13:30 - 13:40	I0	Introduction Session I	
13:40 - 14:00	I1	Andreas Walte	IMS Based Detectors to Protect Personnel on Multipurpose Vessels Used to Support Dangerous Situations in Maritime Environment
14:00 - 14:20	I2	Christopher D. Chouinard	Combating the Drug Crisis with High-Resolution Ion Mobility and Tandem Mass Spectrometry
14:20 - 14:40	I3	Samuel A. Miller	High-Throughput Screening of Fentanyl Analogues using TIMS-MS/MS.
14:40 - 15:00	S3	Hossein Shokri	An IMS-Based Explosives Trace Detector to Detect Threats in Aviation Security and Correctional Facilities
15:00 - 15:20	Break		
15:20 - 16:20	ISIMS Business: Election results, Travel and Poster Awards, ISIMS 2025 and closing remarks		

Poster Session

Posters will be displayed on poster boards, from Monday July 23 to Thursday July 25, 2024. The board dimensions are 36" by 48" (91.4 cm by 121.9 cm), landscape. Poster session will take place in the afternoon of Wednesday July 24, during which poster presenters are expected to attend their posters.

Chair	Simon Höving	
P1	Heidi Sabatini	Separation and Characterization of Isomeric Explosives using Structures for Lossless Ion Manipulations (SLIM) High-Resolution Ion Mobility (HRIM)-Mass Spectrometry
P2	Cassandra N. Fuller	Trapped Ion Mobility Spectrometry in tandem with Electron Capture Dissociation TOF MS/MS for bottom-up Histone Proteoform analysis.
P3	Kevin Jeanne Dit Fouque	Investigation of the Underlying Mechanism of Lasso Peptide Thermal Unthreading using LC-TIMS-q-ECD ToF MS/MS
P4	Olutobi D. Ogunbiyi	Application of LC-Orbitrap-HRMS and LC-TIMS-qTOF as a complementary approach for non-targeted screening of novel Per-and polyfluoroalkyl substances (PFAS) in recreational fisheries
P5	Lilian Valadares Tose	Stable Isotope Labelling to follow de novo lipids by LC-TIMS-TOF MS
P6	Felix Duesberg	Novel Photoionization Source with Carbon Fluorescence
P7	Miguel Santos-Fernandez	Structural characterization of Syanodin I topoisomers using Hydrogen-Deuterium Exchange, Trapped Ion Mobility Spectrometry, and tandem Electron Capture Dissociation Mass Spectrometry
P8	Andrew Forero	Analysis of Dissolved Organic Matter Using Tandem Mobility and FT-ICR Mass Spectrometry
P9	Oliveira Pablo	Chemical Formula Assignment Using High Resolution Ion Mobility-FT ICRMS for Complex Mixtures
P10	Sapna Yadav	Volatile Organic Compound in Headspace over Wine
P11	Veronika Ruzsanyi	Detection of microbial volatile organic compounds produced by genetically modified mycoparasitic fungi
P12	Tim Kobelt	Differentiation of Anaerobic Bacterial Strains Using Pyrolysis-Gas Chromatography-Ion Mobility Spectrometry
P13	Jonas Winkelholz	Heated Dual Polarity Ion Mobility Spectrometer for the Detection of Low-Volatile Chemical Warfare Agent Aerosols
P14	Anjita Gharti Chhetri	Field Induced Fragmentation of Ions from Volatile Organic Compounds Using Tandem Ion Mobility Spectrometry
P15	Max Mörtel	Detection of Chemical Warfare Agents using High Kinetic Energy Ion Mobility Spectrometry (HiKE-IMS)
P16	Simon Höving	Low-Cost 2.5 MHz plasma ionization for ion mobility spectrometry
P17	Ansgar T. Kirk	Achieving even lower noise in ion mobility spectrometry through better transimpedance amplifiers

P18	Osmo Anttalainen	Determination of Biogas Siloxane Filtration Efficiency of Biochar by Differential Mobility Spectrometry
P19	Addison E. Bergman	Interpreting the Structural Polymorphism of Fc-Fusion Proteins using Ion Mobility-Collision Induced Unfolding (IM-CIU)
P20	Peter Fowler	Next Generation of Chemical Detection Systems