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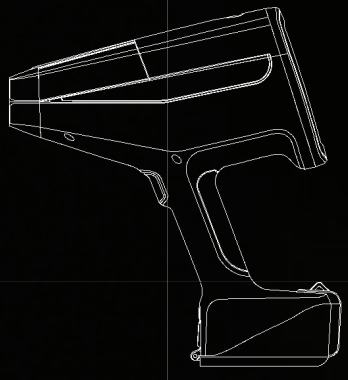

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PITTCON 2014 GENERAL INFORMATION

APPLE/SOUVENIR BOOTHS

Complimentary apples and your 2014 complimentary souvenir bag are available on the exposition floor at the Apple/Souvenir Booths #544 or #4840.

BUSINESS CENTER

The Business Center is located on Level 2.

CHILDREN ON THE EXPOSITION FLOOR

The nature and amount of equipment on display makes the exposition floor potentially dangerous for children. We encourage you to utilize the services of Camp Pittcon. If you feel that you must have your child on the exposition floor with you, please follow these guidelines:

1. All children under the age of 16 must register in the Registration Office, receive and display a badge and be accompanied on the exposition floor by a registered adult. No one under the age of 16 is permitted on the exposition floor during set-up and tear-down.
2. No strollers, backpacks, carriages, or similar devices for transporting children are permitted on the exposition floor.
3. Show Management or Security will remove any child from the exposition floor who exhibits disruptive or dangerous behavior. The child's adult companion will also be asked to leave.

COAT AND BAGGAGE CHECK

Coat and Baggage checks are located in the Main Entrance to the South Hall near the Hyatt McCormick entrance, South Hall Level 1 near the Bus entrance, North Hall level 1 by Gates 26, 27 and the fountain.

EXHIBITOR-DISTRIBUTOR NETWORKING

Exhibitor/Distributor Facilitation is a networking service which provides an efficient and easy way for exhibitors and distributors to connect at Pittcon 2014. A database of helpful contact information facilitates connections for exhibitors seeking distributors and for distributors searching for products to license, sell and/or distribute. The Exhibitor/Distributor Networking office is located behind the Attendee Services Area on the exposition floor.

Hours of Operation

Monday - Wednesday ..... 9:00 a.m. to 5:00 p.m.
Thursday..... 9:00 a.m. to 3:00 p.m.

EXPOSITION HOURS

Pittcon 2014 Exposition Hours:
Monday, March 3..... 9:00 a.m. to 5:00 p.m.
Tuesday, March 4..... 9:00 a.m. to 5:00 p.m.
Wednesday, March 5..... 9:00 a.m. to 5:00 p.m.
Thursday, March 6 ..... 9:00 a.m. to 3:00 p.m.

EMERGENCY INFORMATION

General Emergency 911

FIRST AID STATION

South Hall on the 2.5 level near the Business Center

INFORMATION BOOTHS

There are information booths at the following locations:

Information – South
South Building, Level 1 Lobby,
near Gate 3 next to escalator to West Hall

Information – Grand Concourse
South Building, Grand Concourse Level 3 next to Fountain

Information – Level 2.5 (South Hall)
South Building, Level 2.5, Lobby near window side next to P-P Locator booth

Information – West
West Hall, Level 1 between escalator and "Parking A" entrance

Information – West – Concierge
West Hall level 3 in front of bridge to South Hall

Information – North
North Hall midway Gate 20-21 Level 1

INTERNATIONAL VISITOR SERVICE

The International Visitor Service Center is located on the exposition floor in the Attendee Services area near Registration. Multilingual interpreters and Pittcon staff are available to assist international attendees with many aspects of their attendance.

Hours of Operation

Sunday ..... 1:00 p.m. to 5:00 p.m.
Monday - Wednesday..... 9:00 a.m. to 5:00 p.m.
Thursday..... 9:00 a.m. to 3:00 p.m.

EMAIL AND INTERNET ACCESS

Complimentary wireless internet access is available throughout all public areas of McCormick Place. This service is intended for all conferees and exhibitors to have internet connectivity for email and web access from their portable PC or web enabled device. Two Internet Cafés, located in booths 256 and 4819, are provided on the exhibit floor. Computers with internet connectivity will be available for email and web access for all registered conferees and exhibitors with a 10 minute time limit per use. The Internet Cafés will be available during published show hours only.

Internet Cafes sponsored by:

Chemplex - Booth #1627

PITTCON 2014 RELAXATION STATION

Sponsored by Shimadzu – Booth #1942

Visit Shimadzu booth # 1942 to pick up your coupon for a FREE stress relieving, upper body massage at the Relaxation Station located in the South Building, Level 2.5, by the escalators accessing level between the Food Court and Business Center.

MOBILE APPLICATION

Sponsored by Filmetrics, booth #1249

The Pittcon 2014 Mobile App serves as your all-in-one event guide by putting everything you need to know together in one place on your mobile device!

Build your personal daily schedule, receive reminders and updates, search and take notes on sessions and communicate with other attendees. The Pittcon 2014 Mobile App is currently available for free download in your App Store or Google Play for iOS and Android devices.

PITTCON 2014 GENERAL INFORMATION

MOBILITY ACCOMMODATIONS

Scootaround mobility scooters can be reserved by calling 888-441-7575. The pickup/return is located at the Coat Check in the Main Entrance to the South Hall near the Hyatt McCormick entrance.

PHOTOGRAPHIC EQUIPMENT

The use of cameras and other recording devices are not permitted during program sessions. Cameras are permitted on the exposition floor, however, permission from the exhibitors involved must be obtained before photographs can be taken.

PITTCON BOOTH

Stop by the Pittcon Booth #4468 to get your personalized luggage tag and your souvenir photo. Information is also available on Pittcon 2015 and New Orleans.

PITTCON PHONE NUMBERS

During conference hours, the following Pittcon 2014 offices can be reached by phone.

Area code (312)

Short Courses	808-2001
Pubilicity	791-6742
Employment	791-6717
Science Week	791-6736
Expo	791-6700
Registration	791-6746
Security	791-6730
Camp Pittcon	949-8700
Activities	791-6708
Housing/Transportation	791-6744
Exhibitor/Distributor	791-6732
Travel Planners	791-6721
International Services	791-6724
Pittcon Booth	791-6725
Program	791-6735

PRESS ROOM/MEDIA CENTER

The Press Room is located in Room 104AB at McCormick Place. Complimentary registration is available for all members of the press. Upon your arrival at the convention center, please check in at the Press Room to pick up your press badge and Media Kit. The following are considered proper press credentials and are necessary with photo identification to receive your badge:

- a current National Association of ScienceWriters (NASW) membership card
- a business card showing affiliation and position

FOLLOW US

PRODUCT AND PROGRAM LOCATOR/ AGENDA BUILDER

Computer terminals are available in Millennium Park & opposite Room S401 to access the locator and agenda builder applications. The Agenda Builder application allows conferees to search for products, program presentations, exhibitors and short courses. During the process, you can also build your own personal agenda to use during Pittcon. Remember to create a username and password if you wish to save your agendas.

If you have access to the Pittcon website – www.Pittcon.org, you can find Agenda Builder under the Technical Program or Conferee Area drop-down menus.

PROGRAM

The following pages present the program as of January 2014. For updated information, please visit www.pittcon.org or the mobile app, and take advantage of the search and agenda builder functions to design a personalized conference week schedule.

The Program Office will be in Room S403b of McCormick Place, Chicago, Illinois.

Hours of Operation

Sunday, March 2, 2014 ..... 10:00 a.m. to 5:00 p.m.

Monday, March 3 through
Thursday March 6, 2014 ..... 7:30 a.m. to 5:00 p.m.

The Speaker Ready Room will be in Room S403a. Hours of operation are the same as those of the Program Office. Speakers may practice using the audio-visual equipment (LCD projectors); an AV technician will be available.

Questions or suggestions on any aspect of the Technical Program may be addressed to:

The Pittsburgh Conference
Program Department
300 Penn Center Blvd., Suite 332
Pittsburgh, PA 15235-5503 USA
(412) 825-3220, ext. 219
program@pittcon.org

SECURITY/ LOST & FOUND

Building Security 312-791-6060

Pittcon Security
and Lost and Found ..... 312-791-6755, Room S106a

SOUVENIRS

All registered conferees may pick up a complimentary souvenir (while supplies last) at Booths 4840 or 544.

CHILD CARE ON SITE AT CAMP PITTCON

High quality, convenient child care will be available within McCormick Place during Pittcon 2014. Pittcon will provide a subsidized child care program that will utilize the expertise of a nationally known child care organization.

Each member of the Camp Pittcon staff is a child care professional trained to supervise and entertain your child. We are committed to making your Pittcon 2014 experience family-friendly.

HOURS OF OPERATION

Sunday, March 2, 2014
1:00 p.m. to 5:30 p.m.

Monday, March 3 - Thursday, March 6, 2014
7:30 a.m. to 5:30 p.m.

Registration Costs

(Visa and MasterCard accepted)
Advance Registration by February 1, 2014 (Minimum 3 hours)
6 months to 35 months $10.00 per hour
3 years and older $ 9.00 per hour

After February 1, 2014 (Minimum 3 hours)
Price increases by $1.00 per hour

Parents of participants must be registered Pittcon 2014 conferees or exhibitors.

ACTIVITIES

PITTCON STORE
Gifts and Souvenirs

The Pittcon Store is located on the exposition floor to the left of the main entrance on Level 3. The store is ideal for purchasing souvenirs and fun items to remind you of Pittcon 2014 all year long! There is a new 2014 mascot, apparel, gifts, and business items available at affordable prices. Stop by to see what we have to offer!

MIXERS

Sunday Mixer after the Wallace H. Coulter Plenary Lecture

Enjoy complimentary refreshments and snacks while you view informative posters and meet your colleagues. This event is an annual tradition where many conferees meet year after year. It takes place immediately following the Wallace H. Coulter Plenary Lecture in the S100A Ball Room.

Exposition Mixers

There are complimentary mixers on the exposition floor in booths 559, 614, 4268, 4814, and Millennium Park on Tuesday, from 2:00 p.m. to 4:00 p.m., and Thursday, from 1:00 p.m. to 3:00 p.m. Take a break from your busy day to enjoy snacks and refreshments. It's a great chance to network, too!

PHILATELIC CACHET AND CANCELLATION

A specially designed philatelic souvenir envelope has been prepared for the 65th Pittcon Conference and Exposition. This is the 38th in a series honoring a famous scientist or scientific event. The cachet and insert for 2014 honors Samuel Langley, a largely self taught spectroscopist who invented unique instruments that innovated infrared measurement. He also was an astronomer who taught astronomy and physics at the Naval Academy and the University of Pittsburgh. He also served for 20 years as the Director of the Allegheny Observatory. Langley's work in astrophysics and infrared spectrometry was in the mainstream of those branches of physics.

The envelope is available at the Philatelic Booth during Pittcon 2014. Interested collectors who are unable to attend Pittcon 2014 may obtain one to three envelopes at no charge by sending a request with a self-addressed,stamped no. 10 envelope (SASE) to:

Philatelic Cachet
c/o The Pittsburgh Conference
300 Penn Center Boulevard
Suite 332
Pittsburgh, PA 15235

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TRANSPORTATION INFORMATION

2014 DAILY SHUTTLE TIMES:

Sunday, March 2, 2013

9:00 AM – 12:00 PM ..... Bus departs every 20 minutes
12:00 PM – 4:00 PM..... Bus departs every 15 minutes
4:00 PM – 8:00 PM ..... Bus departs every 20 – 25 minutes

Monday, March 3, 2013

6:30 AM – 9:30 AM ..... Bus departs every 15 minutes
9:30 AM – 3:30 PM ..... Bus departs every 20 – 25 minutes
3:30 PM – 6:00 PM..... Bus departs every 15 minutes

Tuesday, March 4, 2013

7:00 AM – 10:00 AM ..... Bus departs every 15 minutes
10:00 AM – 3:30 PM..... Bus departs every 20 – 25 minutes
3:30 PM – 6:00 PM..... Bus departs every 15 minutes

Wednesday, March 5, 2013

7:00 AM – 10:00 AM ..... Bus departs every 15 minutes
10:00 AM – 3:30 PM..... Bus departs every 20 – 25 minutes
3:30 PM – 6:00 PM..... Bus departs every 15 minutes

Thursday, March 6, 2013

7:00 AM – 10:00 AM ..... Bus departs every 15 minutes
10:00 AM – 3:30 PM..... Bus departs every 20 – 25 minutes
3:30 PM – 7:00 PM..... Bus departs every 15 minutes

SHUTTLE ROUTES:

Due to the large number of bus routes, gates in both the NORTH and SOUTH halls of McCormick Place are being used. In the list below please note which hall your particular route is using.

ROUTE S1 (RED) BOARD AT SOUTH HALL GATE 3 ..... Hotel Boarding Location

Palmer House Hilton ..... Curbside on Wabash Ave
Hotel Burnham..... Board at the Palmer House
Silversmith Hotel and Suites ..... Board at the Palmer House
Hilton Chicago..... 8th Street Entrance
Renaissance Blackstone Chicago Hotel..... Board at the Hilton

ROUTE S2 (GREEN) BOARD AT SOUTH HALL GATE 3 ..... Hotel Boarding Location

Amalfi Hotel..... Corner of Dearborne & Kinze - Harry Caray's
Westin Chicago River North..... Corner of Dearborne & Kinze - Harry Caray's
Hotel Sax ..... Corner of Dearborne & Kinze - Harry Caray's
Residence Inn River North ..... Corner of Dearborne & E. Hubbard
Springhill Suites Downtown River North ..... Corner of Dearborne & E. Hubbard
Courtyard by Marriott Downtown River North ..... Board at the Hampton Inn
Hampton Inn and Suites Dowtown ..... Outside Main Lobby

ROUTE S3 (YELLOW) BOARD AT SOUTH HALL GATE 2 ..... Hotel Boarding Location

Renaissance Chicago Hotel ..... Outside Main Lobby, Curbside on Wacker
Hotel Monaco Chicago, a Kimpton Hotel .. Corner of S. Water & Wabash on S. Water (by Monaco)
Trump International Chicago Hotel ..... Corner of S. Water & Wabash on S. Water (by Monaco)

ROUTE S4 (PURPLE) BOARD AT SOUTH HALL GATE 2 ..... Hotel Boarding Location

Embassy Suites Chicago Lakefront ..... Curbside on Columbus
Doubletree Chicago Magnificent Mile ..... Corner of E. Ohio & Fairbanks, across Fairbanks
W Chicago Lakeshore ..... Outside Main Lobby - curbside to right
Fairfield Inn and Suites Downtown..... Outside Main Lobby
Courtyard Magnificent Mile Downtown..... Corner of E. Ontario & N. St. Clair
Inn of Chicago Magnificent Mile ..... Corner of E. Ontario & N. St. Clair

ROUTE S5 (BLACK) BOARD AT SOUTH HALL GATE 2 ..... Hotel Boarding Location

Homewood Suites by Hilton..... Outside Main Lobby
Conrad Chicago..... Board at the Homewood Suites
Hilton Garden Inn Magnificent Mile ..... Outside Main Lobby
Embassy Suites Chicago Downtown ..... Board at Hilton Garden
Hotel Palomar Chicago, a Kimpton Hotel..... Board at Hilton Garden
Chicago Marriott Downtown Magn. Mile ..... Corner of E. Ohio & N. Rush

ROUTE S6 (PINK) BOARD AT SOUTH HALL GATE 1 ..... Hotel Boarding Location

Holiday Inn Chicago Mart Plaza..... Across Orleans Street
Hotel Allegro Chicago, a Kimpton Hotel..... Curbside on LaSalle @ Randolph
W Chicago City Center ..... Curbside on LaSalle @ W. Adams

ROUTE S7 (ORANGE) BOARD AT SOUTH HALL GATE 1 ..... Hotel Boarding Location

The Tremont Hotel Chicago at Mag. Mile..... Corner of Rush & E. Chestnut on Rush
Westin Michigan Avenue Chicago..... Outside Main Lobby across Delaware St.
Drake Hotel..... Board at the Westin Michigan Ave
Millennium Knickerbocker Hotel..... Board at the Westin Michigan Ave
Residence Inn Magnificent Mile ..... Board at the Westin Michigan Ave

ROUTE N8 (WHITE) BOARD AT NORTH HALL GATE 20 ..... Hotel Boarding Location

Sheraton Chicago Hotel and Towers ..... Curbside on Columbus
Intercontinental Chicago Magnificent Mile ..... Curbside on E. Illinois

ROUTE N9 (BLUE) BOARD AT NORTH HALL GATE 21..... Hotel Boarding Location

Hyatt Regency Chicago ..... Curbside on Wacker
Fairmont Chicago ..... Board at the Hyatt
Radisson Blu Aqua Hotel Chicago..... Board at the Hyatt
Swissotel Chicago..... Board at the Hyatt

ROUTE N10 (SILVER) BOARD AT NORTH HALL GATE 21 ..... Hotel Boarding Location

Omni Hotel Chicago ..... Corner of N. Clarke & E. Huron
Hotel Felix..... Corner of Rush & E. Huron
(Hotel Cass)Holiday Inn Express Hotel ..... Outside Main Lobby

ROUTE N11 (PUBLIC) BOARD AT NORTH HALL GATE 22..... Hotel Boarding Location

PUBLIC Chicago ..... Outside Main Lobby

Please call 1 hour in advance for special assistance or shuttle questions.
(800) 795-9907

PITTCON 2014 OFFICIAL HOTELS AND RATES

PITTCON 2014 OFFICIAL HOTELS AND RATES

	Hotel Name	Single Rate	Internet	Breakfast
1	Almalfi Hotel	$164	Free	Continental
2	Chicago Marriott Downtown Magnif. Mile	$189	$1	n/a
3	Conrad Chicago	$199	Free	n/a
4	Courtyard by Marriott Downtown River North	$170	Free	n/a
5	Courtyard Magnificent Mile Downtown	$169	Free	n/a
6	Doubletree Chicago Magnificent Mile	$145	Free	n/a
7	Drake Hotel	$171	$	n/a
8	Embassy Suites Chicago Downtown	$189	$	Full
9	Embassy Suites Chicago Lakefront	$185	Free	Full
10	Fairfield Inn and Suites Downtown	$139	Free	Dlx Continental
11	Fairmont Chicago	$169	Free for Fairmont Club members	n/a
12	Hampton Inn and Suites Downtown	$139	Free	Dlx Continental
13	Hilton Chicago	$178	$	n/a
14	Hilton Garden Inn Magnificent Mile	$149	Free	n/a
15	Holiday Inn Chicago Mart Plaza	$139	Free	n/a
16	Homewood Suites by Hilton	$149	Free	Full Buffet
17	Hotel Allegro Chicago, a Kimpton Hotel	$159	Free	n/a
18	Hotel Burnham	$169	Free	n/a
19	Hotel Cass - A Holiday Inn Express Hotel	$139	Free	Full Breakfast
20	Hotel Felix	$149	Free	n/a
21	Hotel Monaco Chicago, a Kimpton Hotel	$169	Free	n/a
22	Hotel Palomar Chicago, a Kimpton Hotel	$179	Free	n/a
23	Hotel Sax	$159	Free	n/a
24	Hyatt Regency Chicago	$189	Free	n/a
25	*Hyatt Regency McCormick Place	$205	$	n/a
26	Inn of Chicago Magnificent Mile	$129	Free	n/a
27	Intercontinental Chicago Magnificent Mile	$159/$179	Free	n/a
28	Millennium Knickerbocker Hotel	$145	Free	n/a
29	Omni Hotel Chicago	$169 Suite	Free for Omni Select Guests	n/a
30	Palmer House Hilton	$159	$	n/a
31	PUBLIC Chicago	$139	Free	n/a
32	Radisson Blu Aqua Hotel Chicago	$179	Free	n/a
33	Renaissance Blackstone Chicago Hotel	$159	Free	n/a
34	Renaissance Chicago Hotel	$189	$1	n/a
35	Residence Inn Magnificent Mile	$169	Free	Full Breakfast
36	Residence Inn River North	$179	Free	Full Breakfast
37	Sheraton Chicago Hotel and Towers	$179	Free	n/a
38	Silversmith Hotel and Suites	$139	Free	n/a
39	Springhill Suites River North	$169	Free	Full Breakfast
40	Swissotel Chicago	$169	$	n/a
41	The Tremont Hotel Chicago at Mag. Mile	$129	Free	n/a
42	Trump International Chicago Hotel	$219	Free	n/a
43	W Chicago City Center	$199	Free	n/a
44	W Chicago Lakeshore	$179	Free	n/a
45	Westin Chicago River North	$179	Free	n/a
46	Westin Michigan Avenue Chicago	$169	Free	n/a

*Hyatt Regency McCormick Place is adjacent to the Convention Center. All other hotels are 3-7 miles away on Pittcon shuttle routes.

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PITTCON 2014 CONFEREE NETWORKING

Free unique networking opportunities for registered conferees. Meet, resolve, and discuss similar interests, techniques, and problems on various topics. No preregistration required. Check our website for more information and descriptions.

Sunday, March 2, 2014
1:30 PM - 3:30 PM, McCormick Place Convention Center

Room N427d	Analytical Advances in Geoscience and Petroleum Chemistry
Room N426b	Fast Gas Chromatography
Room N427bc	ICP-MS and Chromatography for Metals Speciation
Room N426c	Regulatory Meets Finance
Room N427a	CANCELLED - Safety in the Laboratory and Field Work

Monday, March 3, 2014
8:30 AM - 10:30 AM, McCormick Place Convention Center

Room N427a	Capillary Electrophoresis Mass Spectrometry: A Robust, Sensitive, and Powerful Technology for Your Next Analytical Challenge
Room N426b	High Throughput Liquid-Liquid Microextraction
Room N427bc	Is Your Organization Competent to Perform Environmental Data Operations?
Room N426c	New Perspectives and Lessons Learned in the Identification of Impurities in Drug Development
Room N427d	Reducing Project Scope Creep

Monday, March 3, 2014
1:30 PM - 3:30, McCormick Place Convention Center

Room N427d	Controlling Instruments Using Non-manufacturer Software Packages
Room N427a	Establishing a Symbiotic Relationship Between Core Research Facility Mangers and Equipment Suppliers
Room N426c	New Directions and Paths in Developing Sample Preparation Technologies
Room N427bc	Non-invasive Biomedical Analysis: Detection of Bacterial Infections by Volatile Fingerprints
Room N426b	The Quest for Killer Applications of "Low Cost" and "Small Size" Spectrometers

Tuesday, March 4, 2014
8:30 AM - 10:30 AM, McCormick Place Convention Center

Room N427bc	Is Chemistry Still a Man's World?
Room N427a	Air Canisters Working Together to Improve Your Analysis
Room N427d	Does Your Enterprise Resource Planning (ERP) Replace LIMS?
Room N426b	Using Social Media Applications in Science
Room N426c	UV LEDs in Molecular Spectroscopy and Microscopy

Tuesday, March 4, 2014
1:30 PM - 3:30 PM, McCormick Place Convention Center

Room N427a	Laboratory Information Management and Laboratory Automation through Unique Identification of Individual Labware and Sample Vials
Room N427bc	Recent Advances in Protein Analysis - Electrophoresis Proteins in Different Tissues and Samples
Room N426b	Solid-Phase Extraction Users
Room N426c	Trace Analysis: Conventional vs. Miniature
Room N427d	Biomarkers of Protein-Lipid Complex Disorder: New Approaches and Technologies

Wednesday, March 5, 2014
8:30 AM - 10:30 AM, McCormick Place Convention Center

Room N426c	Managing a Successful Graduate School Experience
Room N427a	Marketing Your Lab Services Effectively
Room N426bc	Progress Toward Creating an Intelligent and Automated Analytical Laboratory
Room N427d	Analytical Technologies at the Nano-Bio Interface

Wednesday, March 5, 2014
1:30 PM - 3:30 PM, McCormick Place Convention Center

Room N426c	Labs and Apps - Transforming Gadgets into Lab Utilities
Room N427a	CANCELLED - Single-cell Analysis

13th EDITION

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The Analitica Latin America Congress is the suitable environment to join the academic community and the industrial sector. In addition to lectures, symposia and roundtables, the Congress also features a poster exhibition area targeted on the research done at universities, research centers and industries as a way to disseminate information and improve the academic-industrial interaction.

The Brazilian symposium, "Science without Borders: Analytical Chemistry Opportunities in Brazil," will present the Scientific Mobility Program, a government sponsored initiative with the goal of promoting, consolidating and expanding science, technology and innovation in Brazil. The speakers are:

Clésia Cristina Nascentes - Federal University of Minas Gerais

Lúcio Angnes - University of São Paulo

Maria Luiza Bragança Tristão - PETROBRAS / CENPES - R & D Center

Cristina Maria Schuch - Rhodia Solvay Group

Natacha Carvalho Ferreira Santos - National Council for Scientific and Technological Development (CNPq)

PITTCON CONFERENCE & EXPO 2014

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PITTCON 2014 WALLACE H. COULTER PLENARY LECTURE

Pittcon is pleased to announce that Director of Proteomics at the Broad Institute of MIT and Harvard, Steven A. Carr will be the Wallace H. Coulter Plenary Lecture speaker for Pittcon 2014.

WALLACE H. COULTER FOUNDATION

For the second year, the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy (Pittcon) and the Wallace H. Coulter Foundation have signed an agreement under which the Conference has received an endowment to undertake educational training and development in laboratory sciences with special emphasis in resource limited countries worldwide. We have renamed our plenary lecture in honor of Wallace H. Coulter.

The Wallace H. Coulter Lectureship Award recognizes an outstanding individual who has demonstrated a lifetime commitment to, and made important contributions that have had a significant impact on education, practice and/or research in laboratory science.

WALLACE H. COULTER PLENARY LECTURE

Dr. Steven A. Carr

Director of Proteomics at the Broad Institute of MIT and Harvard

"Quantitative Proteomics in Biology, Chemistry and Medicine"

Date: Sunday, March 2, 2014
Time: 4:30 PM
Location: McCormick Place, Chicago, Illinois
(Mixer to immediately follow the lecture.)

Dr. Steven A. Carr is Director of Proteomics at the Broad Institute of MIT and Harvard. He is internationally recognized as a leader in the development of novel proteomics methods and in their application in biology and medicine. Dr. Carr and his group collaborate with scientists throughout the greater Broad community (Broad Institute, Harvard, Harvard Medical School, and the 17 Harvard affiliated hospitals) to apply state-of-the art proteomics technology to address compelling questions in biology, chemistry and clinical medicine. Steve has over 200 publications on development and use of proteomics and biological mass spectrometry.

Quantitative Proteomics in Biology, Chemistry and Medicine

A new era of quantitative biology enabled by mass spectrometry based proteomic technologies has arrived. We can now define the content, relative abundance, modification states and interaction partners of proteins in a dynamic and temporal manner on a near-global basis in organelles, whole cells and clinical samples, providing information of unprecedented detail. At the Broad Institute we are employing these technologies in a wide array of studies including delineating the genetic underpinnings of mitochondrial disorders, connecting cancer genotype to molecular phenotype, unraveling the basis of the innate-immune response, identifying the mechanism of action of drug-like molecules and to discover and verify protein biomarkers of disease. A representative set of project vignettes will be presented to convey a sense of the breadth and depth of application of modern proteomics to biology and medicine. ”

PITTCON 2014 PARTICIPATING SPONSORS

We thank the following exhibitors who are participating at Sponsorship Level for Pittcon 2014. Their participation contributes to our mission to fund science education activities at all academic levels.

Please visit their booths to learn more about the products and services they offer.

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ACS Division of Analytical Chemistry
Pittcon 2014 in Chicago, Illinois, March 2-6, 2014

The ACS Division of Analytical Chemistry is pleased to announce that we are again programming at Pittcon in 2014. Find below a summary of our award session and the 6 invited symposia. We will also have a poster session on Monday afternoon, March 3, 2014.

Invited Symposia

ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science

Wednesday Morning, March 5, 2014, Room: S401a
Organizer: Brian Bidlingmeyer, Agilent Technologies
Award Winner: Michael Roper, Florida State University
Speakers: Michael Roper, Florida State University
Alan Marshall, Florida State University
Stephen Weber, University of Pittsburgh
Susan Lunte, University of Kansas
Norman Dovichi, Notre Dame University

The Analytical Chemistry Award for Young Investigators in Separation Science was instituted by the Subdivision of Chromatography and Separation Science, a subdivision of the Analytical Division of the American Chemical Society. It was established to recognize and encourage outstanding contributions to the field of separation science by a young chemist or chemical engineer who has earned his or her highest degree within ten years of January 1 of the year of the award.

Michael Roper obtained his B.S. in chemistry from the University of Texas at Austin in 1998. He then received his Ph.D. from the University of Florida in 2003 under the supervision of Robert T. Kennedy. His research interests include the development of separation and detection methods for measuring multiple peptides released from islets of Langerhans, with a focus in understanding the dynamic nature of these cells.

ACS DAC: Analytical Advances in Clinical Diagnostics

Sunday Afternoon, March 2, 2014, Room: S401a
Organizer: Barbara Bojko, University of Waterloo
Speakers: Marcin Wasowicz, Toronto General Hospital
Jonas Bergquist, Uppsala University
Liang Li, University of Alberta
Barbara Bojko, University of Waterloo

This symposium will cover current needs of clinical diagnostics and how modern analytical approaches meet these requirements. Novel methods used for 'omics investigations and determination of biomarkers with particular focus on neurological disorders and diseases will be discussed. Finally, the perspectives of rapid on-site diagnosis will be reviewed.

ACS DAC: Advances in Our Understanding of Complex Aerosols at the Individual Particle Level

Tuesday Morning, March 4, 2014, Room: S401a
Organizers: Kimberly Prather, University of California, San Diego and
Vicki Grassian, University of Iowa
Speakers: Kimberly Prather, University of California, San Diego
Vicki Grassian, University of Iowa
Allan Bertram, University of British Columbia
Alexi Tivanski, University of Iowa
Timothy Bertram, University of California, San Diego

This symposium focuses on recent advances in the measurement and understanding of the chemical composition of atmospheric aerosols using single particle techniques including microscopy, spectroscopy, and mass spectrometry. Single particle methods provide information on composition, phase, and morphology which can now be used to better understand their environmental and climate impacts.

ACS DAC: Chemometrics for Modeling and Analyzing Chemical Systems

Wednesday Morning, March 5, 2014, Room: S401bc
Organizer: Frank Vogt, University of Tennessee
Speakers: Johan Trygg, Umea University
Paul Gemperline, East Carolina University
Renee Jiju, University of Missouri-Columbia
Facundo Fernandez, Georgia Institute of Technology

Mathematical modeling of a system's interrelated chemical or physical parameters not only enables quantitative predictions of a processes outcomes or qualitative sample characterizations but also enhances the fundamental understanding of the underlying chemistry. In this symposium, innovations in chemometric methodologies and their applications to investigations of chemical systems will be presented.

ACS DAC: Nanofabrication and Nanoconstructs for Chemical Separations

Wednesday Morning, March 5, 2014, Room: S401d
Organizer: Lisa Holland, West Virginia University
Speakers: Susan Olesik, The Ohio State University
Luis Colon, University at Buffalo - SUNY
Linda McGown, Rensselaer Polytechnic Institute
Charles Lucy, University of Alberta
Lisa Holland, West Virginia University

This symposium presents advanced analytical separations based on nanomaterials derived from polymers, carbon, and self-assembled biological substrates. These new materials are used to separate a wide variety of samples. Applications include bioanalysis, environmental analysis, and sensing. The performance and fundamental properties of these media will be discussed.

ACS DAC: Lifelong Teaching and Learning in Separation Science

Wednesday Afternoon, March 5, 2014, Room: S401d
Organizer: Charles Lucy, University of Alberta
Speakers: Dwight Stoll, Gustavus Adolphus
Chris Harrison, San Diego State University
Charles Lucy, University of Alberta
Kevin Schug, University of Texas at Arlington
Harold McNair, Virginia Tech

This symposium brings together individuals involved with teaching analytical chemistry and separation science both in traditional academic roles with those that are active in non-traditional roles.

ACS DAC: Interferometry in Chemistry, Biology and Medicine

Thursday Morning, March 6, 2014, Room: S401a
Organizer: Darryl Bornhop, Vanderbilt University
Speakers: Darryl Bornhop, Vanderbilt University
Robert Flowers, Lehigh University
Denise O'Hara, Pfizer
Pierre Massion, Vanderbilt University School of Medicine
MG Finn, Georgia Institute of Technology

Backscattering Interferometry (BSI) is a label-free, free-solution technique with utility for a wide array of chemical and biochemical sensing applications. This symposium will highlight the unique characteristics of BSI which make it an enabling technology: femtomolar sensitivity; nanoliter sample volume; and compatibility with complex matrices such as tissue and serum.

A SPECIAL THANK YOU TO OUR 2014 PUBLISHER PARTNERS FOR THEIR SUPPORT

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Advantage Business Media
- BioscienceTechnology.com
- Drug Discovery & Development
- Laboratory Equipment
- Research & Development

American Chemical Society
- Chemical & Engineering News
- Agricultural & Food Chemistry
- Journal of Proteome Research
- Biochemistry
- Environmental Science & Technology

AMERICAN LAB/LAB COMPARE
- American Laboratory
- American Pharmaceutical Review

AOCS
- Inform

Bentham Science Publisher

Chemistry Today

DDNews

Food Safety Magazine

Gases & Instrumentation

Genetic Engineering & Biotechnology News

Instrument.com

International Labmate
- International Environmental Technology
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IOP Publishing
- Physics World

Jesmar Communications
- BioBusiness
- LabBusiness

LabCiencia (High Tech Promotion)

LABX
- Lab Manager
- The Scientist

Laurin Publishing
- BioPhotonics
- Photonics Spectra

Life Science Connect
- Bioresearch Online
- Drug Discovery Online
- Food Online
- Laboratory Network
- Life Science Leader
- Pharmaceutical Online
- Plastics Net
- Pollution Online
- Water Online

Optics.org

Oxford University Press
- Journal of Analytical Toxicology
- Journal of Chromatographic Science

PanGlobal Media
- Biotech International
- Lab International

Putman Media
- Pharmaceutical Manufacturing

Rimbach Publishing
- Pollution Equipment News

RSC (Royal Society of Chemistry)
- Chemistry World
- JAAS (Journal of Analytical Atomic Spectrometry)
- The Analyst
- Analytical Methods Journal

Separation Science
- Separation Science Europe
- Separation Science North America

SpringerLink
- Analytical & Bioanalytical Chemistry
- Chromatographia
- Microchimica Acta

Synthesis Media
- LabFace.com
- LaboratroyTalk.com

Technology Networks

Texere Publishing
- The Analytical Scientist

Wiley
- Food Quality
- G.I.T. Verlag
- Pharmaceutical Formulation & Quality
- SeparationsNow.com
- Spectroscopy Europe
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CONFERENCE REGISTRATION INFORMATION

All pre-registered Pittcon 2014 attendees (conferees, exhibitors, corporate guests, invited speakers, and students) must visit the Registration area in the McCormick Place Convention Center at the main entrance to the exhibit floor to pick up an official registration badge. **A valid photo ID is required to retrieve a badge.**

Attendees who present a scannable QR/bar code or registration confirmation number (on a confirmation email printout or mobile device) can quickly pick up a badge at a Pre-Registered Badge Pickup station in the Registration area. Media Representatives (preregistered or not) will register and pick up their badges in the Press Room (104AB).

Attendees who have not preregistered may visit the Pittcon 2014 website (www.pittcon.org) to register at any time up to and throughout the conference, and then come to the Registration area to pick up badges. Anyone can also come to the Registration area to complete a registration and pick up a badge.

The following forms of payment will be acceptable on site:

- Check or money order payable to The Pittsburgh Conference
- Credit Card (American Express, Discover, MasterCard, or VISA)
- Cash (US currency only)

Student registrants registrants will need to present a valid student ID in order to receive their badge.

One Day registrants registrants must register on site on the day that they will be at the Conference.

Media representatives representatives must register and pick up their badges in the Press Room (104AB) with proper media credentials (media badge, business card with photo ID or a letter of explanation from Editor-In-Chief).

Conferee Prices

Conferee	$300.00
Full-time Student	$ 50.00
One Day ONLY	$150.00
Thursday ONLY	FREE

Pittcon 2014 On-site Registration Hours

Friday, February 28	8:00 a.m. - 5:00 p.m. (Exhibitor Badge Pickup Only)
Saturday, March 1	7:30 a.m. - 4:00 p.m.
Sunday, March 2	7:30 a.m. - 5:00 p.m.
Monday, March 3	7:30 a.m. - 5:00 p.m.
Tuesday, March 4	7:30 a.m. - 5:00 p.m.
Wednesday, March 5	7:30 a.m. - 5:00 p.m.
Thursday, March 6	7:30 a.m. - 2:00 p.m.

PITTCON 2014 EMPLOYMENT SERVICES

PITTCON 2014 EMPLOYMENT BUREAU

A free Employment Bureau, located in the Vista Ballroom S406, is available. The bureau is an on-site workshop for candidates to review active job openings and for employers to review candidates' credentials and resumes. To qualify for this service, each participant must be registered either as a conferee or as an exhibitor for Pittcon 2014, and must also register as either a candidate or an employer in the Employment Bureau. Employers may schedule interviews with candidates in the private interview rooms. Although the general interview rooms are free, employers who want the same interview room each day must purchase a Reserved Interview Booth.

There are also a limited number of special, stand alone Deluxe Reserved Booths with electrical outlets and several chairs which are available for a fee. A detailed description of the Employer Bureau process and regulations can be found by visiting the Employment Bureau under the Conferee Area tab on the Pittcon website. Online registration for the Employment Bureau is open through Conference week.

All candidate searches for job positions and employer searches for applicants are performed electronically. Candidates and employers should bring their computers or other electronic devices for accesing the internet and e-mails. Candidates must bring printed and electronic resumes in SEARCHABLE PDF or MS format, preferably stored on a USB flash drive.

Employment Bureau Hours:

Sunday, March 2	1:00 p.m – 5:00 p.m.
Monday, March 3 through Wednesday, March 5	8:00 a.m. – 5:00 p.m.
Thursday, March 6	8:00 a.m. – 2:00 p.m.

SCIENCE WEEK 2014

The Pittcon 2014 Science Week programs offer a wide variety of educational activities during Conference Week for the benefit of students and teachers in elementary, middle, and high schools in Chicago and the surrounding area. These activities are provided as part of our mission to promote science awareness and science education. All of our programs are offered at no cost to the schools, teachers, or students.

Hands-on Workshops for Upper Elementary and Middle School Students

A set of six hands-on workshops will lead groups of Chicago area, upper elementary school students through the exciting process of experimentation and discovery on Monday. On Tuesday and Wednesday, middle school students will participate in similar hands-on workshops. These action-packed workshops will include experimentation with gases, acid/base reactions, polymers, electrochemistry, astronomy, health and chromatography.

Lecture Demonstration for High School Students

On Thursday, March 6, 2014 at 10:30 am, Lee Marek from the University of Illinois at Chicago will present a live lecture/demonstration entitled "Weird Science on Fuels and Energy" in McCormick Place for up to 1,000 high school students and their teachers.

WORKSHOPS FOR ELEMENTARY SCHOOL, MIDDLE SCHOOL, AND HIGH SCHOOL SCIENCE TEACHERS

The following workshops are being offered to teachers in the Chicago area. All workshops are half day unless otherwise noted. Attendees may receive materials to help them perform some of the workshop experiments in their own classrooms. The workshops are free and parking will be provided for all. Lunches for those attending both morning and afternoon workshops on the same day or either of the all-day workshops will also be provided.

Please visit http://pittcon.org/science-week/teacher-workshops/ for more information.

Saturday March 1, 2014

All Day: K - 12

1. Safety in the School Science Laboratory

Morning Elementary/Middle

2. Light, Color and Spectroscopy for Kids

Morning Middle/High

3. Lost in Lunar Translation: Fuel Cells and Mass Driver
4. Biotechnology Basics – Building Blocks to Creating a Cutting-edge Biotechnology Classroom

Morning High

5. Teaching Chemistry Using Inquiry

Afternoon Elementary/Middle

6. The S.T.E.M. Energy Challenge

Afternoon Middle/High

7. Chemical and Environmental Technology

Afternoon High

8. Beyond the Basics – Taking Your Biotechnology Classroom to the Next Level
9. Computer Workshop for High School Chemistry and Physics

Sunday March 2, 2014

All Day: Elementary

10. Teaching Science With Toys

Morning: Elementary/Middle

11. Hands on Science Program Integrating S.T.E.M. Education for All Learners!
12. Why Go Wi-Fi?

Morning: Middle/High

13. Teaching Astronomy During the Day and Beyond the Classroom
14. Electrons Don't Make the World Go 'Round, but They Do Just About Everything Else: An Introduction to Electrochemistry

Afternoon: K-12

15. Making Observations, Modeling and Applying the Scientific Method

Afternoon: Middle/High

16. Chemi-Paloosa and Hands-On Activities That will Really Get a Reaction
17. Scientist Toolkit

Afternoon: High

18. Create a Digital Wi-Fi Classroom!

Grants to Promote Science Education in the Chicago Area

Grants of up to $1,000 are available to every school with an enrollment of over 200 students that sends one or more teachers to a teacher workshop (limit one grant per school). These grants will enable teachers to purchase equipment demonstrated in the workshops or other science-related equipment of their choice. All equipment will be shipped directly to the teachers at their school address.

TECHNICAL COMMITTEE AND SOCIETY MEETINGS/RECEPTIONS

Room W190a

SAS membershp	3/3 Monday 12:30-2:00pm
SAS publications	3/4 Tuesday 12:00-2:30pm
SAS Exec Committee	3/5 Wednesday 9:00am-12:30pm

Room W190b

SAS 3/5	Wednesday 11:00am-2:00pm

Room W191

ACS-Graduate Student fellowship	3/2 Sunday 11:00am-2:00pm
ACS-DAC	3/3 Monday 4:00pm-7:00pm
ASTM-E15	3/4 Tuesday 9:00pm-3:00pm
FIACC	3/5 Wednesday 8:00am-1:00pm
PRAMA	3/6 Thursday Noon to 3/7 Friday Noon

Room W192a

PAI-NET	3/3 Monday 11:00am to 1:00pm

Room W196a

Food Labs	3/4 Tuesday 8:00am-5:00pm
Conference	3/5 Wednesday 8:00am-5:00pm

Room W196c

FACSS	3/2 Sunday 3:00pm-7:00pm 3/3 Monday 8:00am-5:00pm 3/4 Tuesday 8:00am-5:00pm

AWARD PRESENTATIONS AT PITTCON 2014

An important function of Pittcon is to recognize and honor scientists who have made outstanding contributions to analytical chemistry and applied spectroscopy.

CHROMATOGRAPHY FORUM OF THE DELAWARE VALLEY DAL NOGARE AWARD

Monday, March 3, 2014, 8:30 AM, Room S401a
Mary J. Wirth, Purdue University

Dr. Mary J. Wirth is the W. Brooks Fortune Distinguished Professor in the Department of Chemistry at Purdue University. Her research is on new materials for protein separations. Dr. Wirth received her B.S. from Northern Illinois University, and her Ph.D from Purdue University. She is a Fellow of the Society of Applied Spectroscopy and the American Association for the Advancement of Science.

PITTSBURGH CONFERENCE ACHIEVEMENT AWARD

Monday, March 3, 2014, 8:30 AM, S401bc
Benjamin Garcia, University of Pennsylvania School of Medicine

Dr. Benjamin Garcia is currently the Presidential Associate Professor of Biochemistry and Biophysics at the University of Pennsylvania School of Medicine where his group is interested in the development and application of mass spectrometry based proteomics for solving difficult problems in chromatin biology and epigenetics.

SEAC – YOUNG INVESTIGATORS AWARD

Monday, March 3, 2014, 3:40 PM, Room S402a
Stephen Maldonado, University of Michigan

Stephen is a recipient of a NSF Graduate Research Fellowship and a Donald D. Harrington Graduate Fellowship. He began his graduate research at the University of Texas at Austin in 2001 with Professor Keith J Stevenson. In 2008, Stephen joined the faculty in the chemistry department at the University of Michigan, Ann Arbor. His group works in the area of semiconductor electrochemistry and recently reported a new method for electrochemically growing semiconductor crystals at ultra-low temperatures.

SEAC – CHARLES N. REILLEY AWARD

Monday, March 3, 2014, 1:30 PM, Room S402a
Joseph Hupp, Northwestern University

Joseph Hupp is a native of rural western New York and graduate of Houghton College and Michigan State University. He is currently a Morrison Professor of Chemistry at Northwestern University. His research centers on energy- and defense-relevant materials chemistry, electrochemistry, and photochemistry.

PITTSBURGH ANALYTICAL CHEMISTRY AWARD

Tuesday, March 4, 2014, 8:30 AM, Room S401bc
Richard M. Crooks, University of Texas at Austin

Richard M. Crooks received B.S. and doctoral degrees in chemistry from the University of Illinois and The University of Texas at Austin. His independent career has been split between Texas A&M University and the University of Texas-Austin where he presently holds the Welch Chair in Materials Chemistry. His research program focuses on biosensing and electrocatalysis.

More information is available on our website at www.pittcon.org – Under the Technical Program Tab.

AWARD PRESENTATIONS AT PITTCON 2014

PITTSBURGH SPECTROSCOPY AWARD

Tuesday, March 4, 2014, 1:30 PM, Room S401bc
Geraldine L. Richmond, University of Oregon

Geraldine Richmond received her Ph.D at the University of California Berkeley with George Pimentel (1980). After five years on the faculty of Bryn Mawr College, she moved to the University of Oregon where she currently holds the Richard M. and Patricia H. Noyes Professorship. She is co-founder of COACh for the Advancement of Women Scientists.

ACS DIVISION OF ANALYTICAL CHEMISTRY AWARD FOR YOUNG INVESTIGATORS IN SEPARATION SCIENCES

Wednesday, March 5, 2014, 8:30 AM, Room S401a
Michael Roper, Florida State University

Michael Roper is an Associate Professor in the Department of Chemistry and Biochemistry at Florida State University and a member of the Molecular Biophysics program.

RALPH N. ADAMS AWARD

Wednesday, March 5, 2014, 1:30 PM, Room S401a
Mark E. Meyerhoff, University of Michigan

Mark E. Meyerhoff is currently the Philip J. Elving Professor of Chemistry at the University of Michigan. His analytical chemistry research interests are in creating ion-, gas-, and bio-selective electrochemical sensors suitable for measurements of clinically important analytes. He and his collaborators have published more than 330 papers describing this research.

THE COBLENTZ SOCIETY – WILLIAMS-WRIGHT AWARD

Wednesday, March 5, 2014, 1:30 PM, Room S401bc
Walter M. (Mike) Doyle, Axiom Analytical, Inc

Walter M. Doyle (Mike) is the president of Axiom Analytical, Inc., a manufacturer of sample interfacing equipment and systems for molecular spectroscopy. He is also president of Symbion Systems, which provides standardized process analytical software. Before founding Axiom, he was the president of Laser Precision Corp. and the founder of its Analect Instruments Division, the first manufacturer of robust, process compatible, FTIR spectrometers.

PITTCON HERITAGE AWARD

Sunday, March 2, 2014, 4:30 PM, Grand Ballroom S100a
Lynwood Walter Swanson, FEI Company

Lynwood Swanson founded and led FEI Company, a producer of electron and ion beam instruments that in 2012 ranked among the top fifteen instrumentation companies in the world.

THE COBLENTZ SOCIETY/ABB – BOMEM-MICHELSON AWARD

Tuesday, March 4, 2014, 8:30 AM, S402a
Yukihiro Ozaki, Kwansei Gakuin University

Yukihiro Ozaki is a Chemistry Professor at Kwansei Gakuin University, Sanda, Japan. He works in a wide range of molecular spectroscopies, including IR, Raman, NIR and far-ultraviolet spectroscopy. He has received numerous awards including the Tomas Hirschfeld, Gerald Birth, SAS Fellow, and Science and Technology (Japan) Awards.

2015 PITTSBURGH CONFERENCE MEMORIAL NATIONAL COLLEGE GRANTS PROGRAM

The Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, Inc. (a Pennsylvania non-profit Corporation) and its co-sponsoring technical societies, The Society for Analytical Chemists of Pittsburgh (SACP) and The Spectroscopy Society of Pittsburgh (SSP), proudly announce the 2015 Pittsburgh Conference Memorial National College Grants (PCMNCG) Program.

Grants will be awarded to small college science departments for the purchase of scientific equipment, audio-visual or other teaching aids, and/or library materials for use in the teaching of science at the undergraduate level.

Based on anticipated funds, we expect that at least ten (10) colleges will be selected to receive grants. The amount requested in each proposal may not exceed $10,000.

To be eligible for an award, schools must meet the following criteria.

1. Enrollment must not exceed 5,000 full-time students.
2. No more than 25% of the operating budget, which does not include student financial aid, may come from national or state governments. Two-year community colleges sponsored by political subdivisions of a state are not bound by criteria one and two.
3. Requests for materials to be used only for research purposes will not be funded.
4. Awards may be used as part of "Matching Grant" programs; use of matching funds to increase the overall impact of the grant will be considered in the evaluation of proposals and is highly encouraged.
5. Schools are ineligible for the PCMNCG program for a three-year period following receipt of the PCMNCG grant (award recipients from 2012, 2013, and 2014 are not eligible for the 2015 program).

Faculty members are urged to participate in the 2015 Pittsburgh Conference Memorial National College Grants Program by obtaining an application form from our website at www.pittcon.org (select the College Grants link) and submitting an original proposal by **October 6, 2014** to:

Ron Bargiel, The Pittsburgh Conference- PCMNCG
300 Penn Center Boulevard, Suite 332
Pittsburgh, PA 15235-5503 USA

Award winners will be announced by February 16, 2015. Selected schools will join the list of over 200 institutions honored since the start of this program in 1974.

2014 Pittsburgh Conference Memorial National College Grants Program Awardees

Aiken Technical College .....Aiken, SC
Ashland University .....Ashland, OH
Coe College & Cornell College .....Cedar Rapids, IA
Gwynedd Mercy University .....Gwynedd Valley, PA
Hampshire College .....Amherst, MA
Keystone College .....La Pume, PA
Northcentral Technical College (NTC) .....Wausau, WI
Roanoke College .....Salem, VA
Saint Xavier University .....Chicago, IL
The College of Wooster .....Wooster, OH
University of the Sciences .....Philadelphia, PA
Valparaiso University .....Valparaiso, IN
Wilmington College of Ohio .....Wilmington, OH

AWARD WINNER HISTORY

SOCIETY FOR ANALYTICAL CHEMISTS OF PITTSBURGH

Applied Analytical Award

1976	Dr. Christopher S. Frings
1977	Dr. Hamish Small Dr. Timothy S. Stevens Dr. Wiliam C. Baum
1978	Dr. George M. Janini Dr. Kevin Johnston Dr. Walter Zielinski, Jr.
1979	Dr. Malvina Farcasiu

Pittsburgh Analytical Chemistry Award

1978	Prof. Howard V. Malmstadt
1980	Prof. Herbert Laitinen
1981	Prof. I.M. Kolthoff
1982	Dr. Leonard T. Skeggs
1983	Dr. Norman G. Anderson Dr. N. Leigh Anderson
1984	Dr. Lloyd S. Snyder
1985	Prof. Bruce R. Kowalski
1986	Prof. Gary M. Hieftje
1987	Prof. Fred M. McLafferty
1988	Prof. Henry Freiser
1989	Prof. Lockhart B. Rogers
1990	Prof. George H. Morrison
1991	Prof. James D. Winefordner
1992	Dr. J. Calvin Giddings
1993	Dr. Edward S. Yeung
1994	Dr. Charles L. Wilkins
1995	Prof. Velmer A. Fassel
1996	Prof. Johannes F. Coetzee
1997	Prof. R. Mark Wightman
1998	Dr. Janet G. Osteryoung
1999	Prof. Joel M. Harris
2000	Prof. Miles V. Novotny
2001	Prof. Allen J. Bard
2002	Prof. Royce W. Murray
2003	Prof. George M. Whitesides
2004	Prof. Peter W. Carr
2005	Prof. James W. Jorgenson
2006	Dr. J. Michael Ramsey
2007	Dr. Jonathan V. Sweedler
2008	Dr. Milton L. Lee
2009	Dr. Chad A. Mirkin
2010	Prof. Lloyd M. Smith
2011	Prof. Raoul Kopelman
2012	Prof. Alan G. Marshall
2013	David R. Walt
2014	Richard M. Crooks

SPECTROSCOPY SOCIETY OF PITTSBURGH

Pittsburgh Spectroscopy Award

1957	Prof. George R. Harrison
1958	Dr. Norman Wright
1959	Mr. Borden S. Scribner
1960	Prof. Alfred O. Nier
1961	Prof. Ralph A. Sawyer
1962	Dr. Gerhard Herzberg
1963	Dr. William F. Meggers
1964	Prof. Foil A. Miller, Dr. R.A. Freidel
1965	Mr. L.S. Birks
1966	Prof. R.C. Lord
1967	Dr. Maurice F. Hasler
1968	Dr. R. Norman Jones
1969	Prof. Velmer A. Fassel
1970	Prof. Ellis Lippincott
1971	Dr. Arthur J. Ahearn
1972	Dr. Paul C. Cross Prof. David S. McKinney
1973	Prof. James D. Winefordner
1974	Prof. George C. Pimentel
1975	Prof. Fred W. McLafferty
1976	Prof. William G. Fateley
1977	Prof. Bryce Crawford, Jr.
1978	Prof. E. Bright Wilson, Jr.
1979	Prof. John S. Waugh
1980	Dr. Harold J. Bernstein
1981	Prof. James R. Durig
1982	Prof. Kai Siegbahn
1983	Prof. Richard N. Zare
1984	Prof. Jack L. Koenig
1985	Prof. Peter R. Griffiths
1986	Dr. Tomas Hirschfeld
1987	Prof. Paul C. Lauterbur
1988	Prof. K. Narahari Rao
1989	Prof. Alexander Pines
1990	Prof. Charles B. Harris
1991	Prof. Richard Van Duyne
1992	Prof. Herbert S. Gutowsky
1993	Dr. Catherine Fenselau
1994	Dr. Bruce Chase
1995	Dr. John W. Johns
1996	Prof. David M. Hercules
1997	Prof. Ahmed Zewail
1998	Prof. M. Bonner Denton
1999	Prof. Richard J. Saykally
2000	Prof. R. Graham Cooks
2001	Prof. Gary M. Hieftje
2002	Prof. Alan G. Marshall
2003	Prof. Gary Horlick
2004	Prof. Paul W. Bohn
2005	Prof. John F. Rabolt
2006	Dr. Wolfgang Kiefer
2007	Dr. Robert M. Corn
2008	Dr. Sanford A. Asher
2009	Dr. Ira W. Levin
2010	Dr. Robin M. Hochstrasser
2011	Dr. Adriaan Bax
2012	W. E. (William Esco) Moerner
2013	Laurence A. Nafie
2014	Geraldine L. Richmond

Pittcon Heritage Award

2002	Mr. David Nelson
2003	Ms. Kathryn Hach-Darrow
2004	Mr. Paul A. Wilks, Jr.
2005	Mr. Robert W. Allington
2006	Dr. Masao Horiba
2007	Mr. David Schwartz
2008	Dr. Leroy Hood
2009	Dr. Alfred Bader
2010	Dr. Walter Jennings
2011	Dr. George Hatsopoulos, Dr. John Hatsopoulos Arvin Smith
2012	Genzo Shimadzu, Sr., Genzo Shimadzu, Jr.
2013	Guenther Laukien
2014	Lynwood Walter Swanson

Pittsburgh Conference Achievement Award

2002	Prof. David E. Clemmer
2003	Prof. Owe Orwar
2004	Dr. Weihong Tan
2005	Dr. Boris Mazaikof
2006	Dr. Paul S. Cremer
2007	Dr. Shana Kelley
2008	Dr. Neil Kelleher
2009	Dr. Daniel T. Chiu
2010	Dr. Joshua J. Coon
2011	Dr. Lingjun Li
2012	Christy L. Haynes
2013	Sarah Trimpin
2014	Benjamin Garcia

Ralph N. Adams Award

2005	Prof. Edward S. Yeung
2006	Dr. R. Mark Wightman
2007	Dr. Norman J. Dovichi
2008	Dr. Milos V. Novotny
2009	Dr. Graham Cooks
2010	Dr. Catherine Fenselau
2011	Prof. James W. Jorgenson
2012	Jonathan V. Sweedler
2013	J. Michael Ramsey
2014	Mark E. Meyerhoff

Maurice F. Hasler Award

1970	Dr. Raymond Castaing
1971	Prof. Velmer A. Fassel
1972	Dr. Alan Walsh
1973	Prof. Foil A. Miller
1974	Dr. Heinrich Kaiser
1975	Prof. Kai Siegbahn
1977	Mr. Howard Cary
1979	Prof. John H. Beynon
1981	Prof. John Strong
1983	Mr. Richard F. Jarrell
1985	Prof. Paul C. Lauterbur
1987	Prof. George C. Pimentel
1989	Prof. Klaus Biemann
1991	Prof. Karl N. Norris
1993	Dr. R. S. Houk
1995	Prof. Howard V. Malmstadt
1997	Prof. Alan G. Marshall
1999	Dr. Norman B. Colthrup
2001	Prof. William G. Fateley
2003	Prof. Jack L. Koenig
2005	Prof. James Winefordner
2007	Dr. D. Bruce Chase
2009	Dr. Gary M. Hieftje

PITTCON 2015 CALL FOR NOMINATIONS

2015 Pittsburgh Spectroscopy Award

Call for Nominations

The Spectroscopy Society of Pittsburgh (SSP), a sponsor of the Pittsburgh Conference on Analytical Chemistry and Applied Spectroscopy, is the sponsor of the annual Pittsburgh Spectroscopy Award. This award is for recognition of outstanding contributions in the field of applied spectroscopy and is presented at Pittcon.

Nominations should include a letter of recommendation listing the candidate's accomplishments, a letter seconding the nomination from another person and, if convenient, a letter from a third person supporting the nomination.

Nominations should be sent to:

Fu-mei Lin
Pittsburgh Spectroscopy Award Chairman
c/o Spectroscopy Society of Pittsburgh
300 Penn Center Blvd., Suite 332
Pittsburgh, PA 15235-5503

Phone: (412) 825-3220 ext.212
www.ssp-pgh.org

NOMINATION DEADLINE IS MARCH 31, 2014

2015 Pittsburgh Conference Achievement Award

Call for Nominations

The Society for Analytical Chemists of Pittsburgh (SACP) solicits nominations for the 2015 Pittsburgh Conference Achievement Award. The Award is presented annually at Pittcon to recognize individuals for outstanding achievements in the fields of analytical chemistry and/or applied spectroscopy within 10 years after completion of their Ph. D. work. The award recipient will be invited to Pittcon and will be included as a speaker in the Pittsburgh Conference Achievement Award Symposium. The award recipient will be invited to the SACP/SSP Awards Reception and Dinner during the Conference and his/her photo and bio-sketch will be included in the conference program. The award recipient will be presented with a scroll and a cash award in an amount to be determined by the SACP chairman. To be eligible for the 2015 award, nominees must have completed their Ph. D. no earlier than March 1, 2004. A letter of nomination, curriculum vitae and at least one seconding letter should be emailed to: **sacpinfo@pittcon.org** with "2015 Pittsburgh Conference Achievement Award Nomination" in the subject line.

NOMINATION DEADLINE IS APRIL 11, 2014

2015 Pittsburgh Analytical Chemistry Award

Call for Nominations

The Society for Analytical Chemists of Pittsburgh is accepting nominations for the 37th Annual Pittsburgh Analytical Chemistry Award, which will be presented at Pittcon 2015. The award is established in recognition of an individual's significant contributions to the field of analytical chemistry including:

- introduction of a significant technique, theory or instrument
- providing exceptional training or a fertile environment for progress in analytical chemistry

The winner will receive a cash award and travel costs to Pittcon 2015 in New Orleans, Louisiana and will be included as a speaker in Pittsburgh Analytical Chemistry Award Symposium in his/her honor.

To nominate a candidate for the 2015 Pittsburgh Analytical Chemistry Award, please email a nominating letter and the candidate's CV to **sacpinfo@pittcon.org** with "2015 Pittsburgh Analytical Chemistry Award Nomination" in the subject line, and the following information:

- a full list of publications,
- a list of all graduate and postdoctoral students advised
- courses taught for the last 10 years.

Supporting letters of nomination will also be accepted, but should be limited to one page. Nominations must include at least two seconding letters.

NOMINATION DEADLINE IS APRIL 25, 2014

2015 Ralph N. Adams Award in Bioanalytical Chemistry

Call for Nominations

The Ralph N. Adams Award in Bioanalytical Chemistry will be presented at Pittcon 2015, and includes a cash award and travel expenses. The award recognizes significant contributions to the field of bioanalytical chemistry, broadly defined. The recipient will have introduced a significant technique, theory, instrument or application important to the life sciences, and provided an exceptional environment to educate bioanalytical chemists. Ralph N. Adams (1924 - 2002) exemplified these characteristics as a distinguished professor of chemistry at the University of Kansas.

Previous nominations will be considered for a total period of three years. Nominations should include a nomination letter, four to five supporting letters and an abbreviated biosketch of the candidate.

Completed nominations in one packet should be submitted by post or email (as PDF files) to:

Ralph N. Adams Award Committee
The Pittsburgh Conference
300 Penn Center Boulevard, Suite 332
Pittsburgh, PA 15235-5503
sspinfo@pittcon.org

NOMINATION DEADLINE IS MAY 2, 2014

2015 Coblentz Society Call for Nominations

The Coblentz Society, founded in 1954 to foster understanding and application of vibrational spectroscopy, annually recognizes outstanding scientists who have made an impact on the field of vibrational spectroscopy. Nominations for the following awards are currently being accepted:

The Bomem-Michelson Award, awarded to a scientist aged 37 or greater who has advanced the technique(s) of vibrational, molecular, Raman, or electronic spectroscopy

The Coblentz Award, presented to an outstanding young molecular spectroscopist under the age of 40

The Williams-Wright Award, presented to an industrial spectroscopist who has made significant contributions to vibrational spectroscopy while working in industry

The Lippincott Award, presented annually to an outstanding vibrational spectroscopist

Nominations for the **Craver Award**, awarded to an outstanding analytical vibrational spectroscopist under the age of 45, open annually on March 30.

Further details on these and the Society's student awards can be found at www.coblentz.org

THE TWENTY-FIFTH JAMES L. WATERS ANNUAL SYMPOSIUM: MALDI-TOF

When:
Monday afternoon, March 3, 2014
1:30 PM

Where:
Room S401bc

The James L. Waters Annual Symposium is a unique component of the Pittcon Technical Program. In 1989, Mr. Waters, founder of Waters Associates, Inc. and president of Waters Business Systems, Inc., proposed that the Society for Analytical Chemists of Pittsburgh (SACP) offer an annual symposium exploring the origin, development, implementation, and commercialization of scientific instrumentation of established and major significance. The objective of the symposium is to recognize workers and the development and application of instrumentation by preserving the early, and in some cases, more mature history of the important contributions, as well as the cooperation between inventors, scientists, engineers, entrepreneurs and marketing organizations. All expenses associated with the symposium are generously funded by Mr. Waters. Administration of the symposium, including selections of the topics and speakers, is the responsibility of the SACP.

The Twenty-Fifth Annual Waters Symposium recognizes the commercialization of MALDI-TOF. The speakers chosen for this symposium are pioneers in the development and commercialization of MALDI-TOF and are uniquely qualified to discuss the development of MALDI-TOF and its commercialization. The speakers will also discuss the current state of the technique and its future.

The SACP is extremely pleased to welcome the following innovators to Pittcon 2014.

Speakers:
Peter Roepstorff, University of Southern Denmark
Franz Hillenkamp, University of Muenster
Marvin Vestal, Virgin Instrument Corporation
Richard M. Caprioli, Vanderbilt University School of Medicine
Randall Nelson, Arizona State University

Peter Roepstorff is Professor of Protein Chemistry at the University of Southern Denmark and founder of the Protein Research Group. He is one of the pioneers in protein mass spectrometry with research focus on methods development for protein mass spectrometry and proteomics and especially search for post translational protein modifications.

Franz Hillenkamp is professor emeritus and past director of the Institute of Medical Physics and Biophysics of the University of Muenster, Germany. He received his higher education at the Technical University of Munich where he obtained the degrees of Dipl.-Ing. in electrical engineering (1962) and a Ph.D in physics in 1966. He also holds a degree of master of science in communications from Purdue University, West Lafayette, IN. USA (1961). Together with Professor Michael Karas, he is best known for his invention and development of (MALDI-MS). He is also known for his work in the field of clinical laser applications.

Dr. Marvin Vestal received BS and MS degrees in engineering sciences in 1958 and 1960, respectively, and his Ph.D in chemical physics from the University of Utah in 1975. He was Professor of Physical Chemistry at University of Houston from 1976-1984. Dr. Vestal founded Vestec Corp in 1983, where he developed and commercialized the Thermospray LC-MS interface. Since 1989, his work has focused on MALDI-TOF and has included the first commercial instrument based on the design of Beavis and Chait, the Voyager series of instruments, the first practical delayed extraction instrument, and the MALDI-TOF-TOF. More than one-half of the MALDI-TOF instruments in use are based on his designs.

Richard M. Caprioli is the Stanford Moore Professor of Biochemistry and director of the Mass Spectrometry Research Center at Vanderbilt University School of Medicine. He is principal investigator of the National Institutes of Health Imaging Mass Spectrometry National Resource. He is also currently Professor in the Departments of Chemistry, Medicine and Pharmacology at Vanderbilt University. Dr. Caprioli received his B.S. in 1965 from Columbia University in New York, N.Y. and his Ph.D. (1969) in biochemistry, also at Columbia University with Professor David Rittenberg.

Dr. Randall Nelson directs the Molecular Biomarkers Laboratory at the Biodesign Institute at Arizona State University and also holds the positions of Research Professor in Biodesign and Affiliate Professor in the Department of Chemistry and Biochemistry. Dr. Nelson's research team strives to improve human health and contributes to the vision of personalized medicine by understanding protein differences involved in healthy versus ill individuals. It does this using novel proteomics and mass spectrometric technology and methods. Dr. Nelson's research is currently focused on cancer, cardiovascular disease and diabetes.

PITTCON 2015 CALL FOR PROPOSALS
JAMES L. WATERS ANNUAL SYMPOSIUM

Proposals are solicited for the 2015 James L. Waters Symposia to recognize the collaborative work of those who pioneered the invention, development, implementation, and commercialization of analytical instrumentation of established and exceptional importance. Proposals should include a brief discussion of the topic and a list of potential symposium participants who can speak authoritatively on that topic.

Please submit proposals by April 30, 2014 to:
Waters Symposium Committee Chairman, Society for Analytical Chemists of Pittsburgh, 300 Penn Center Boulevard, Suite 332, Pittsburgh, PA 15235-5503, USA.

Chart of previous people
James L. Waters, Entrepreneur, Sponsor of the Waters Symposium at Pittcon

2014 MALDI-TOF
Peter Roepstorff
Franz Hillenkamp
Marvin Vestal
Richard Caprioli
Randall Nelson

2013 Chemical Imaging Spectroscopy
E. Neil Lewis
Patrick J. Treado
Richard Crocombe
Joachim Koenen

2012 The Development and Application Portable Handheld X-Ray Fluorescence Spectrometers
Lee Grodzins
Andrew T. Ellis
Stanislaw Piorek
Alan Huber
Charles Jensen

2011 The Development and Application of Instrumentation in Electron and Ion Microscopy
David C. Bell
David C. Martin
Joseph R. Michael
David Joy

2010 Early Instrumentation for LC-MS
Jack Henion
William H. McFadden
Thomas R. Covey
Marvin L. Vestal

2009 Near Infrared Spectroscopy INIRS
Peter Flinn
Karl Norris
Franklin Barton
Phil Williams
Robert A. Lodder

2008 DNA Sequencing
Leroy Hood
Richard K. Wilson
Lloyd M. Smith
Robert H. Waterston
George M. Church

2007 Scanning Probe Microscopies STM, AFM, SNFUH
Cyrus Moody
Christoph Gerber
Craig Prater
Jan H. Hoh
Vinayak P. Dravid

2006 Inductively Coupled Plasma Mass Spectrometry (ICP-MS)
R. Samuel Houk
Gary Horlick
Norbert Jakubowski
Charles Douthitt
Don Potter
Gary M. Hieftje

2005 Electrochemistry
Allen J. Bard
Wayne D. Matson
Jud B. Flato
Peter T. Kissinger
Hardy Trolander

2004 Gel Permeation Chromatography
James L. Waters
Robert Limpert
Theodore Provder
Clay Enos

2003 Raman Spectroscopy
Fran Adar
Harry Owen
M. Bonner Denton
Bruce Chase

2002 Electron Spectroscopy for Chemical Analysis
Hans Siegbahn
Michael A. Kelly
Cedric J. Powell
David M. Hercules

2001 Ion Chromatography
Barton Evans
Paul R. Haddad
Christopher A. Pohl
Hamish Small

2000 X-ray Diffraction of Powders and Thin Films
Herbert Goebel
Jimpei Harada
Ronald Jenkins
Thomas Ryan

1999 Atomic Emission
Stanley M. Greenfield
Spectroscopy Gary M. Hieftje
R. Samuel Houk
Richard F. Jarrell

1998 Immunoassay
Roger P. Ekins
Eugene W. Straus
Edwin F. Ullman
Anders Weber
Rosalyn S. Yalow

1997 Lasers in Chemistry
Nicolaas Bloembergen
Bernard J. Couillaud
Robin M. Hochstrasser
Gérard A. Mourou

1996 Ion Selective Electrodes
Martin S. Frant
Truman S. Light
Jaromir Ruzicka
C. C. Young

1995 High Performance Chromatography
Josef F. K. Huber
Liquid Barry L. Karger
Lloyd R. Snyder
James L. Waters

1994 Mass Spectrometry
Robert E. Finnigan
Fred McLafferty
Seymour Meyerson
Alfred O. C. Nier
A. G. Sharkey, Jr.

1993 Nuclear Magnetic Resonance Spectroscopy
Ray Freeman
Paul Lauterbur
James Shoolery
John Waugh

1992 Infrared Spectroscopy
Bryce Crawford
Peter Griffiths
Foil Miller
Norman Sheppard
Paul Wilks

JAMES L. WATERS, ENTREPRENEUR, SPONSOR OF THE WATERS SYMPOSIUM AT PITTCON

James L. Waters has been a unique contributor to the Pittcon Technical Program since 1990 through his funding of the James L. Waters Annual Symposium to recognize pioneers in the conception, development, implementation, and commercialization of scientific instrumentation of major and established significance.

Mr. Waters has been an entrepreneur since his graduation from Columbia University in 1946. At age 22, he established J. L. Waters, Inc. manufacturing IR gas analyzers, sold that company in 1955, and established Waters Associates in 1958. He developed an airborne hydrometer, flame photometer detectors, and refractometers for various applications. He further developed the refractometer into a sensor for the then little-known liquid chromatograph (LC), and eventually a small-volume sensor for gel-permeation chromatograph (GPC).

WatersAssociates' first GPC, introduced at the 1964 Pittcon, was a great commercial success. In 1968, Mr. Waters refocused his efforts on chromatographic sensors and introduced their first LC system in 1969. Waters Associates trademarked the tagline, "The Liquid Chromatography People", after they helped purify positional isomers of a precursor to vitamin B12 for Nobel Laureate Robert Woodward of Harvard University. In 1992 Waters introduced software for chromatography, and in 1994 HPLC columns for drug assays and a benchtop LC-MS. All of these actions fueled the growth of Waters Associates, which, under Mr. Waters' leadership from 1958 to 1980, grew from 5 to 1100 employees with an annual sales volume around $100 million, and to 4000 employees worldwide with an annual sales volume in excess of $1 billion.

Mr. Waters has been a private venture capitalist since 1980. He is currently President of Waters Business Systems and enjoys working with young entrepreneurs. Mr. Waters endowed the James L. Waters Chair in Analytical Chemistry at Northeastern University. The name "Waters" has become synonymous with "LC" in the scientific community.

Excerpted from the biography in the Walk of Fame in Pittcon 99, Orlando, Florida and LC/GC North America, 23 (8), August 2005.

PITTCON 2014 SHORT COURSES (BY DATE)

Pittcon 2014 features a broad variety of high quality Short Courses that provide continuing education and professional development opportunities at a reasonable cost. Listed below are the Short Courses that are offered. Please visit the Pittcon website, www.pittcon.org or the mobile app, where you will find the most up-to-date listing of courses by subject matter and detailed information on the content, instructor, time, date, and fee for each course in addition to available discounts. If you are not preregistered for a course, you can register to take a Short Course online, at the Registration booth, or in the Short Course office, room #N228.

2014 Short Course Prices

½ Day	$**375**
1 Day	$**710**
1 ½ Days	$**1050**
2 Days	$**1380**

Purchase of a textbook is recommended for some courses, where indicated.

Saturday, March 1 (8:30 am - 5:00 pm)

#114 **Wastewater Microbiology Program for Operators** (Toni Glymph-Martin, MWRD Chicago + Text $70.00)

#59 **Accessories and Techniques for FT-IR Sample Analysis** (Richard Larsen, Jasco, Inc.)

#70 **Advanced Excel I: Linear and Nonlinear Least Squares** (Robert de Levie, Bowdoin College)

#109 **Analytical Sampling and Sample Preparation** (Doug Raynie, South Dakota State University)

#119 **Applied Ion Analysis in Chemical and Environmental Industry for Precision Measurements** (Karen Poe, Metrohm USA)

#115 **Applying Informatics Technology to Laboratory Work** (Joseph Liscouski, Institute for Laboratory Automation)

#120 **Comprehensive Two-Dimensional Liquid Chromatography** (Dwight Stoll, Gustavus Adolphus College/Peter Carr, University of Minnesota)

#101 **Conducting Effective Investigations of Out of Specification And Atypical Laboratory Results** (Gregory Martin, Complectors Consulting)

#116 **Conducting OOS/OOT Investigations According to FDA regulations** (Kim Huynh-Ba, Pharmalytik + Text $157 (Same text as Courses #124)

#5 **Essentials of Modern HPLC/UHPLC 1: Fundamentals and Applications** (Michael Dong, Genentech + Text $85 (Same text as Course #6))

#156 **Gas Chromatography Detectors - A Review** (Matthew Monagle, AIC LLC)

#22 **Language and Matter: Technical Writing for Analytical Scientists and Managers** (Anthony Parker, A. A. Parker Consulting, LLC/Joe Marcinko, Polymer Synergies LLC)

#60 **LIMS - Laboratory Information Management Systems** (Siri Segalstad, Segalstad Consulting AS)

#9 **Powerful Communications: Public Speaking for Scientists** (Rick Parmely, Polished and Professioinal)

#8 **Spectroscopy of Nanomaterials for Energy** (Sivaram Arepalli, National Institute of Aerospace)

#160 **Statistically Sound Calibration, Detection Limits and Quantitation Limits, Part 1 of 2 - Theory** (David Coleman, Alcoa + Text $170.00)

Saturday (8:30 am - 12:30 pm)

#46 **Basic HPLC Method Development** (Fred Rabel, ChromHELP, LLC)

#26 **Sampling for Particle Size Analysis** (Alan Rawle, Malvern Instruments Inc)

Saturday (1:00 pm - 5:00 pm)

#47 **LC and TLC Analysis of Herbal Medicines/Supplements for Purity and Content** (Fred Rabel, ChromHELP, LLC)

#145 **Realizing the Business Benefits of your Lab Informatics Investment** (Geoff Turnbull, CSols Inc)

Saturday, March 1 / Sunday, March 2 One and a Half Day Course

(8:30 am - 5:00 pm and 8:30 am - 12:30 pm)

#155 **Advances in Countercurrent Chromatography and Related Techniques** (Martha Knight/Gilda Leitao, CC Biotech LLC)

Saturday, March 1 / Sunday, March 2 Two-Day Courses (8:30 am - 5:00 pm)

#55 **Analytical Excellence; Assuring Data Integrity and Laboratory Compliance** (Christopher Burgess/Robert McDowall, Burgess Analytical Consultancy Ltd//Robert McDowall,)

#157 **Methods Development and Validation with a Scientific Approach and Risk Based Strategy** (Shib Mookherjea, ValQual International, Inc.)

#71 **Practical Gas Chromatography** (Eugene Barry, Univ. of Massachusetts Lowell + Text $160.00)

Sunday, March 2 (8:30 am - 5:00 pm)

#72 **Advanced Excel II: Writing VBA Functions and Macros** (Robert de Levie, Bowdoin College)

#2 **Chemometric Techniques for Quantitative Analysis** (Richard Kramer, Applied Chemometrics + Text $75.00)

#6 **Essentials of Modern HPLC/UHPLC 2: Operation, Troubleshooting, and Method Development** (Michael Dong, Genentech + Text $85 (Same text as Course #5))

#23 **Industrial Problem Solving Using Thermal Analysis Techniques** (Anthony Parker, A. A. Parker Consulting, LLC/Joe Marcinko, Polymer Synergies LLC)

#10 **Inspirational Bench Leadership - Lessons in Communications** (Parmely Rick, Polished and Professioinal)

#39 **Introduction to Chromatography of Proteins, Peptides, and Related Molecules** (Thomas Wheat, Waters Corporation)

#25 **Introduction to Metabolomics** (Dajana Vuckovic, Concordia University)

#146 **Sample Preparation for Chromatography** (Christopher Palmer, University of Montana)

#20 **Solid Phase Microextraction (SPME) and Other Solventless Sampling and Sample Preparation Technologies for Laboratory and On-site** (Barbara Bojko, University of Waterloo/Janusz Pawliszyn, University of Waterloo + Text $100.00)

#27 **Statistically Sound Calibration Studies, Detection Limits, and Quantitation Limits – Part 2 of 2 – Computer Workshop** (Lynn Vanatta)

#124 **Validation, Verification and Transfer of HPLC Methods for Pharmaceutical Products** (Kim Huynh-Ba, Pharmalytik)

Sunday (8:30 am - 12:30 pm)

#105 **Biosensors: Immunoassay Design and Detection Techniques** (Betsy Yakes, U.S. Food and Drug Administration)

#65 **Characterization of Coated Polymers** (Bernhard Dringenberg, BJD~analytics)

#110 **Grants 101** (William Campbell, Council on Undergraduate Resaearch/Paula Dehn, Kentucky Wesleyan College)

#77 **Hyperspectral Imaging Applied to Complex Particulate Solids Systems** (Giuseppe Bonifazi, Sapienza - Università di Roma)

#50 **Introduction to ICP Mass Spectrometry** (Robert Houk, Iowa State University)

#19 **Modern Chiral Chromatography** (Daniel Armstrong, University of Texas at Arlington)

PITTCON 2014 SHORT COURSES (BY DATE)

Sunday, March 2 (1:00 pm - 5:00 pm)

#78 **Hyperspectral Imaging II: Applications** (Giuseppe Bonifazi, Sapienza - Università di Roma)

#21 **Ionic Liquids in Gas Chromatography** (Daniel Armstrong, University of Texas at Arlington)

#144 **Long-Term Archiving of Laboratory Data** (Burkhard Schaefer, BSSN Software)

#66 **Physical Chemistry of Macromolecules Part I - Basic Principles** (Bernhard Dringenberg, BJD~analytics)

#123 **Practical Introduction to Near-infrared Method Development** (Karen Poe, Metrohm USA/John Martin,)

#111 **Writing a Grant Proposal** (Paula Dehn, Kentucky Wesleyan College/William Campbell, Campbell Grants & Research)

Sunday, March 2 / Monday, March 3

One and a Half Day Courses (8:30 am - 5:00 pm and 8:30 am - 12:30 pm)

#38 **LC-MS-MS Analysis of Emerging Contaminants** (EDCs, PPCPs and PFCs) and Nanomaterials in the Environment (Damia Barcelo, ICRA/Marinel.la Farre, IDAEA-CSIC)

#7 **Statistics for the Non-Statistician with Applications to Analytical Chemistry** (James De Muth, University of Wisconsin + Text $70.00)

Sunday, March 2 / Monday, March 3 Two-Day Course (8:30 am - 5:00 pm)

#91 **Application of Inductively Coupled Plasma Atomic Emission** (ICP-AES) Spectrometry (Isaac Brenner, Brenner Scientifc)

Monday, March 3 (8:30 am - 5:00 pm)

#61 **A Practical Approach to Validating IT Systems** (Siri Segalstad, Segalstad Consulting AS + Text $120.00)

#73 **Advanced Excel III: Using Matrix Algebra and Extended Precision** (Robert de Levie, Bowdoin College)

#148 **Analytical Forensic Metrology** (Jerry Messman, Stranaska Scientific LLC)

#48 **Basic HPLC – Fundamentals, Applications, and Troubleshooting** (Fred Rabel, ChromHELP, LLC)

#74 **Designing and Implementing the Regulated Electronic Laboratory** (Bob McDowall, McDowall Consulting)

#112 **Green Analytical Chemistry** (Doug Raynie, South Dakota State University)

#12 **Handheld Vibrational Spectrometers** (Raman, Mid- and Near-Infrared): Novel Instrumentation and Applications (Heinz Siesler, University of Duisburg-Essen)

#75 **Highly Successful Strategies for LC/MS Quantitation: Current Applications and Emerging Technologies** (Rick King, PharmaCadence Analytical Services + Text $90 (Same text as Course #81))

#102 **Lifecycle Approach to Analytical Methods with QbD Elements: Design, Development, Validation, Transfer** (Gregory Martin, Complectors Consulting)

#64 **LIMS and ELN: How to Select, Plan and Implement the Right Software Solutions for Your Laboratory** (Kyle McDuffie, CSols Inc)

#14 **Quality Control of Small Molecule Drugs and Recombinant Biologics: Fundamentals and Best Practices** (Michael Dong, Genentech)

#106 **Safety in the Laboratory, Part 1** (James Kaufman, Laboratory Safety Institute + Text $74 (Same text as course #107))

#11 **Time Management** (Parmley Rick, Polished and Professional)

Monday, March 3 (8:30 am - 12:30 pm)

#117 **EH & S Answers to Nanotechnology** (Odette Nolan, Labconco Corporation)

#57 **Introduction to Two-Dimensional X-ray Diffraction** (Bob He, Bruker AXS + Text $120.00)

#41 **Lab-on-a-Chip Devices I** (Jaime Castillo-León, DTU Nanotech, Technical University of Denmark/Winnie Svendsen, DTU Nanotech, Technical Univ. of Denmark + Text $135 (Same text as Course #44))

#97 **Maintaining Calibration Programs – Compliance Perspective** (483s, Warning Letters and Consent Decree) (William Ferrell, PCI)

#67 **Physical Chemistry of Macromolecules Part II - Interaction with Light** (Bernhard Dringenberg, BJD~analytics)

#4 **Some Approaches to Analytical Data Treatment Using Microsoft® Excel™** (Mark Stauffer, University of Pittsburgh at Greensburg + Text $70.00)

Monday, March 3 (1:00 pm - 5:00 pm)

#83 Advanced Closed Domains (Particles, Grains, Cells, etc.) Morphological and Morphometrical Characterization by 2D and 3D Imaging (Giuseppe Bonifazi, Sapienza - Univerità di Roma)

#169 An Introduction to Mass Spectrometry including Biomolecule Applications (Bryan Ham, US Customs and Border Protection)

#118 Improving Your Lab: Fume Hoods & Biosafety Cabinets (Brian Garrett, Labconco Corporation)

#168 It's Alive! The Rise of Protein Dynamics Analysis by Mass Spectrometry (Michael Greig, Pfizer Oncology/Ben Bolanos, Pfizer)

#44 Lab-on-a-Chip Devices II (Winnie Svendsen, DTU Nanotech, Technical University of Denmark/Jaime Castillo-León, DTU nanotech, Technical University of Denmark + Text $135 (Same text as Course #41))

#98 Maintaining the Validated State of Analytical Laboratory Instrumentation in GMP/GLP Environments (Nick Jones, PCI)

#79 Primer on XRF Spectrometry: Instrumentation (Charles Wu, Biotron Research Center/Alexander Seyfarth, Bruker-Elemental)

#68 Smart Polymers (Bernhard Dringenberg, BJD~analytics)

Monday, March 3 / Tuesday, March 4 One and a Half Day Course

(8:30 am - 5:00 pm and 8:30 am - 12:30 pm)

#28 **Introduction to Multivariate Statistics and Dynamic Multivariate Analysis** (Jose Andrade, University of A Corunna/Mikael Kubista,)

Monday, March 3 / Tuesday, March 4 Two-Day Course (8:30 am - 5:00 pm)

#1 **An Introduction to ISO/IEC 17025:2005 and Accreditation** (Chris Gunning, A2LA)

Tuesday, March 4 (8:30 am - 5:00 pm)

#132 **Analytical Organic Mass Spectrometry** (William Budde, USEPA (Retired))

#84 **Auditing GMP Regulated Laboratories: Preparation and Execution** (Bob McDowall/Chris Burgess, McDowall Consulting/Burgess Consultancy)

#126 **Critical cGMP and ICH Regulations for Pharmaceutical Laboratories** (Kim Huynh-Ba, Pharmalytik)

#133 **Coaching and Counseling in R&D** (Liz Treher, Independent Consultant)

#63 **IT Supplier Audit** (Siri Segalstad, Segalstad Consulting AS)

#81 **LC/MS Strategies for the Identification of Impurities, Degradants and Metabolites** (Mike Lee, Milestone Development Services + Text $90 (Same text as Course #75))

#29 **Measurement Uncertainty - An Introduction** (Bernard King, Consultant)

#69 **Practical LC/MS Method Development for Small Molecules** (Perry Wang, US FDA)

#107 **Safety in the Laboratory, Part 2** (James Kaufman, Laboratory Safety Institute + Text $74 (Same text as Course #106))

#135 **Technical Writing at Work** (Steven Schultz, Writing at Work, Inc.)

PITTCON 2014 SHORT COURSES (BY DATE)

Tuesday, March 4 (8:30 am - 12:30 pm)

#58 **Advances in MS and LC/MS Sample Introduction, Sample Placement and Liquid Handling** (Drew Sauter, nanoLiter LLC/Alexander Scheeline, Universty of Illinois)

#100 **Coaching as a Powerful Leadership Tool** (Janice Sabatine, Avanti Strategies)

J#99 **Developing and Implementing Calibration Programs** (William Ferrell, PCI)

#80 **How to Select an ICP-Mass Spectrometer: The Most Important Analytical Considerations** (Robert Thomas, Scientific Solutions Inc. + Text $105 Same text for Course 92)

#96 **Improving Teamwork and Task-Focus in the Analytical Laboratory** (William Devorick, CSols, Inc.)

#40 **Instrument Control Fundamentals** (Shawn Shaw, National Instruments)

#17 **Lab Manager Bootcamp: Insights into Ethical Leadership** (Frank Bucaro, Lab Manager Magazine/Cayley Thomas,)

#113 Nanoparticle Characterization – Fractionation, Size, Zeta Potential and Composition (Jeffrey Ahlgren, Wyatt Technology)

#82 Optimizing the Performance of Your Gas Delivery System to Obtain Best and Consistent Results while Reducing your Gas Costs (Frank Kandl, Airgas)

#18 Pharmacokinetics for the Analytical Scientist (Marcel Musteata, Albany College of Pharmacy and Health Sciences)

Tuesday, March 4 (1:00 pm - 5:00 pm)

#147 **An Introduction to ChemTech, a Chemist and Laboratory Technician Toolkit Program and LIMS** (Bryan Ham, US Customs and Border Protection)

#150 **Basic User and Safety Training for Hand Held XRF (PXRF) in the Workplace** (Alexander Seyfarth, Brucker Elemental/Rock River AXS LLC)

#34 **Color Measurement - It's More Than Just Aesthetics** (Marke Reid, Lovibond Tintometer)

#92 **Implementation of United States Pharmacopeia (USP) New Chapters <232> <233> and <2232> on Elemental Impurities in Pharmaceutical Products and Dietary Supplements** (Robert Thomas, Scientific Solutions Inc. + Text $105 Same text for Course 80)

#166 **Injection Techniques in Gas Chromatography** (Jaap DeZeeuw, Restek)

#128 **Introduction to Modern Ion Chromatography** (Greg Dicinoski, Reserve Bank of Australia)

#134 **Ion Mobility Spectrometry** (Herbert Hill, Washington State University)

#121 **Karl Fischer Analysis of Gas, Liquids, and Solids** (Karen Poe, Metrohm USA/Doug Clark, Sigma Aldrich)

#162 **Side Illuminated Optical Fiber Sensor with a High Density of Sensing Points** (Claudio Egalon, Science and Sensors Technologies)

Tuesday, March 4 / Wednesday, March 5 One and a Half Day Course

(8:30 am - 5:00 pm and 8:30 am - 12:30 pm)

#158 **Highlights of FDA GLP** (Shib Mookherjea, ValQual International, Inc.)

Tuesday, March 4 / Wednesday, March 5 Two-Day Course (8:30 am - 5:00 pm)

#125 **Atomic Force Microscopy, a Toolkit for Nanotechnology Characterization: Overview, Best Practices and Industrial Applications** (Dalia Yablon, ExxonMobil/Greg Haugstad, University of Minnesota + Text $200.00)

Wednesday, March 5 (8:30 am - 5:00 pm)

#161 **Addressing Impurities in Pharmaceutical Products: Elemental Impurities, Residual Solvents and Drug-related Impurities, Degradants and Potential Genotoxic Impurities** (Gregory Martin, Complectors Consulting)

#54 **Confidence in Analytical Results and Measurement Uncertainty** (Christopher Burgess, Burgess Analytical Consultancy Ltd)

#89 **How QC Laboratories can Comply with both 21 CFR 11 and EU GMP Annex 11 Regulations** (Bob McDowall, McDowall Consulting)

#108 **How To Be A More Effective Chemical Hygiene Officer** (James Kaufman, Laboratory Safety Institute + Text $74.00)

#3 **Internal Auditing and Root Cause Analysis** (Rob Knake, The American Association for Laboratory Accreditation (A2LA))

#136 **Interpretation of Electrospray Mass Spectra of Small Molecules** (Earl Michael Thurman, University of Colorado)

#30 **Measurement Uncertainty - The Easy Way** (Bernard King, Consultant)

#129 **Modern Methods for Chemometric Analysis** (Michael Madden, Analyze IQ)

#103 **Practical Introduction to Near IR and Raman Spectroscopy** (Fred Long, Spectroscopic Solutions)

#139 **Supervisory Skills for Technical Managers** (Liz Treher, Independent Consultant + Text $65.00)

#94 **Water-Water Everywhere and Not a Drop to Drink - Status of Compliant Sampling, Sample preparation of Solid and Liquid Wastes and Water Using: ICP-AES, ICP-MS, Regulations, Risk Assessment and Recycling** (Daniel Solomon, Dan Cities Association for the Environment and Wastes)

Wednesday, March 5 (8:30 am - 12:30 pm)

#93 **Conducting Effective Product Demonstrations: Unlocking the Secrets to the Art and the Science Behind the Most Critical Stage of the Instrument Evaluation Process** (Jeremy Smith/Robert Thomas, Scientific Solutions)

#87 **Digital Imaging for Materials and Products Characterization: Laboratory Applications** (Giuseppe Bonifazi, Sapienza - Università di Roma)

#49 **Hydrophilic Interaction Chromatography (HILIC) – Companion to Reversed Phase HPLC** (Fred Rabel, ChromHELP, LLC)

#42 **Light Scattering Techniques for Absolute Macromolecular Characterization** (Sigrid Kuebler, Wyatt Technology)

#15 **Measurement and Interpretation of pH in Aqueous and NonAqueous Solutions and Other Stuff** (William Tindall, Analytical Science Solutions)

#31 **Multivariate Calibration as an Aid to Develop Atomic Spectroscopy Methods** (Jose Andrade, University of A Corunna)

#36 **Particle Characterization of Nanomaterials** (Anastasia Morfesis, Malvern Instruments)

#43 **Techniques for the Handling of Biological Samples I** (Jaime Castillo-León, DTU Nanotech, Technical University of Denmark/Winnie Svendsen, DTU Nanotech, Technical Univ. of Denmark + Text $135 (Same text as Course #45))

Wednesday, March 5 (1:00 pm - 5:00 pm)

#137 **Analysis of Biomolecular Interactions by Light Scattering for Biotherapeutic R&D** (Daniel Some, Wyatt Technology)

#151 **Can They Really Patent That? Dude, Why Aren't you Patenting That?** (Elliot Mendelson, Mendelson Intellectual Property Law LLC)

#127 **Introduction to GLP Regulations and Bioanalytical Method Validation by LC/MS** (Perry Wang, US FDA)

#122 **Optimizing Sample Preparation** (Jenny Sprung, Labconco Corporation)

#153 **Practical Handheld (HH) XRF or Portable XRF in the Workplace** (Alexander Seyfarth, Brucker Elemental/Rock River AXS LLC)

#45 **Techniques for the Handling of Biological Samples II** (Winnie Svendsen, DTU Nanotech, Technical University of Denmark/Jaime Castillo-León, DTU Nanotech. Technical University of Denmark + Text $135 (Same texts as Course #43))

#130 **Separations: Fundamentals of Advanced Gel Permeation and Size Exclusion Chromatography Detection** (Ulf Nobbman, Malvern Instruments)

PITTCON 2014 SHORT COURSES (BY DATE)

Wednesday, March 5 / Thursday, March 6 Two-Day Course (8:30 am - 5:00 pm)

#13 **Basic Theory, Instrumentation and Applications of Vibrational Spectroscopy** (Raman, Mid-Infrared and Near-Infrared) in Materials Science (Heinz Siesler, University of Duisburg-Essen)

#53 **Getting the Most out of Capillary Gas Chromatography** (Matthew Klee, XO Associates LLC)

#62 **ISO 17025, Understanding the Standard and How to Implement this in the Lab** (Siri Segalstad, Segalstad Consulting AS)

Thursday, March 6 (8:30 am - 5:00 pm)

#90 **Ensuring the Integrity of Data and Electronic Records in GMP Laboratories** (Bob McDowall, McDowall Consulting)

#33 **Fundamentals of Particle Size Analysis with an Emphasis on Light Scattering Techniques** (Alan Rawle, Malvern Instruments Inc/Ulf Nobbmann, Malvern Instruments Inc)

#37 **Impurities in Pharmaceuticals - A Survey Course** (Bernard Olsen, Olsen Pharmaceutical Consulting)

#138 **Introduction to LCMS for Chromatographers and Novices** (Robert Classon, Shimadzu/Ross Willoughby, Chem-Space Publishing)

#56 **Laboratory Deviation Management and CAPA** (Christopher Burgess, Burgess Analytical Consultancy)

#141 **Managing Conflict** (Liz Treher, Independent Consultant)

#159 **Qualification and Validation of Laboratory Instruments and Equipment for Regulatory and QS Compliance** (IQ, OQ, PQ) (Shib Mookherjea, ValQual International, Inc.)

#165 **Solid-State Light Sources: Utilize the Benefits of Light Emitting Diodes and Laser Diodes as the Light Sources of the 21st Century** (Mirek Macka, University of Tasmania)

#163 **Terahertz Spectroscopy and Imaging of Noncovalent Bonds for Medicine and Biomedical Applications** (Katsuhiro Ajito, NTT)

#52 **Trace Level Method Validation in the Pharmaceutical Industry - Practical Aspects of Method Validation** (Gyorgy Vas, Intertek)

Thursday, March 6 (8:30 am - 12:30 pm)

#32 **A Hands-On Example on How to Develop a PLS Regression Model** (Jose Andrade, University of A Corunna)

#51 **Delivering a Successful Laboratory Informatics Project** (Kurt Robak, CSols, Inc.)

#104 **Proactive Strategies for Reducing Laboratory Litigation Risks** (Lawrence Mason, Segal McCambridge)

#154 **Screening for Restricted Materials (ROHS II) Using HH XRF** (Alexander Seyfarth, Bruker Elemental/Rock River AXS LLC)

#143 **Staying Ahead of the Curve: How Corporate Social Responsibility Can Help Your Lab and Your Bottom Line** (Elyssa Litchfield, CSols, Inc.)

#95 **The Chemical Analysis of Things As They Are: Direct Analyses with Ambient Mass Spectrometry** (Jacob Shelley, University of Muenster)

Thursday, March 6 (1:00 pm - 5:00 pm)

#88 **Cultural Heritage and Hyperspectral Imaging: Fundamentals and Applications** (Giuseppe Bonifazi, Sapienza - Università di Roma)

#24 **Gas Chromatography/Infrared Spectrometry** (John Schneider, Argonne National Laboratry)

#164 **High Resolution LC-MS for Pharmaceutical Structural Elucidation** (Guilong Cheng, Pfizer, Inc.)

#35 **Problems with FT-IR Spectra and How to Avoid Them** (Ellen Miseo, IR Courses)

#16 **Selection and Preparation of Buffers for Aqueous and Partially Aqueous Solvents, for Example LC Mobile Phases** (William Tindall, Analytical Science Solutions)

Look for the webcast icon to identify webcast sessions

SUNDAY AFTERNOON, MARCH 2, 2014

THE WALLACE H COULTER PLENARY LECTURE

Steven A Carr, Broad Institute of MIT and Harvard
– Quantitative Proteomics in Biology, Chemistry and Medicine

AWARD AND SYMPOSIA

Pittcon Heritage Award
ACS DAC: Analytical Advances in Clinical Diagnostics
ALMA: Attracting, Developing and Maintaining a Lab's Greatest Asset, Its Staff
Controlled Nanopores for Chemical Separations and Sensing
NSF Centers for Advancing Instrument Development and Analytical Research
Quantitative Microfluidic Molecular and Cellular Analysis Towards Systems Biology
The Science and Impact of Transformative Technologies on Forensic Science

WORKSHOP

CACA: How to be Successful in Your Career

ORGANIZED CONTRIBUTED SESSIONS

Infrared Spectroscopy (Well Beyond) the Diffraction Limit
Orthogonal and Risk-Based Sensing Systems for Homeland Security Applications
Specialty Gas (Half Session)

ORAL SESSIONS

A 'Sampling' of Data Analysis and Manipulation
Bioanalytical Applications of Electrochemistry
Bioanalytical Imaging (Half Session)
Bioanalytical Microfluidics
Biomedical Imaging (Half Session)
Fluorescence/Luminescence: Bio and Nano
Gas Chromatography: Analytical Methods, Theoretical Considerations
Methods for Metabolomics, Lipidomics, and Proteomics
Novel Teaching Strategies for Analytical Chemistry (Half Session)
Nuclear Power Plant Chemical Analysis (Half Session)
Polymer and Plastic Material Characterization (Half Session)
Sensors: Bioanalytical
Separation Sciences: Bioanalytical and Pharmaceutical
Separation Sciences: Materials Science and Others (Half Session)
Trace Metals by Atomic Emission Sources (Half Session)

SUNDAY POSTER SESSION

New Developments in Analytical Instrumentation and Software

MONDAY MORNING, MARCH 3, 2014

AWARDS AND SYMPOSIA

Chromatography Forum of the Delaware Valley Dal Nogare Award
Pittsburgh Conference Achievement Award
Accurate Mass Analysis of Environmental Compounds with Both LC and GC/Q-TOF-MS
Applied Nonlinear Spectroscopy
Molecular Analysis of Human Disease
New Wave of Gas Chromatography
SAS: Mass Cytometry: An In-Depth View of Cell Heterogeneity and Signaling
SEAC: Electroanalysis in Unusual and Extreme Environments
Surface-Enhanced Infrared Absorption: Mechanism and Applications

ORGANIZED CONTRIBUTED SESSIONS

Ionophore-Based Chemical Sensors I
PAI-NET: Ultrasensitive Analytical Technologies for Biology and Chemistry
Spectroscopy for Everyone – Smaller, Cheaper, in the Field

ORAL SESSIONS

Air Sampling for Environmental Applications (Half Session)
Bioanalytical Electrochemistry: Assorted Applications and Methods
Capillary and Micro-Free-Flow Electrophoresis
Environmental: Analysis of Pollutant (Half Session)
GC/MS Analysis of Fuels
LC: Column Technology
LC: Pharmaceutical Analysis
Nanotechnology: Sensors and Electrochemistry
Pharmaceutical: GC, LC/MS, Raman Spectrometry, Capillary Electrophoresis and Separation Sciences
Sampling and Sample Preparation for the Food Sciences

POSTER SESSIONS

Electrochemistry: Methods and Applications
Fluorescence/Luminescence/UV-VIS Bio and Nano
Fuels, Energy and Petrochemicals Analyses
Microscopy
Nanotechnology: Fluorescence, Extraction, Electrophoresis and Electrochemistry
Nanotechnology: Lab-On-A-Chip, Imaging, and Spectroscopy
Ongoing Enhancements to Chromatographic Methods
Teaching Methods

MONDAY AFTERNOON, MARCH 3, 2014

AWARD AND SYMPOSIA

SEAC - Charles N Reilley and Young Investigators Award
Advanced Mass Spectrometry for Food Safety and Cosmetics – Challenges and Validation
Advances in Diamond Based Sensing and Analysis
Advances in Raman Spectroscopy
Applications of Capillary Electrophoresis in Vaccine, Virus, and Biological Particles
Cancer Nanotechnology - Enabling Development of New Diagnostics and Therapeutics
Capillary Liquid Chromatography - A Powerful Tool in Analytical Chemistry
Ion Mobility Separations in Proteomics and Structural Biology
Miniature Mass Spectrometers
Semiconducting Sensors for Biodiagnostics and Food Safety
The Twenty-Fifth James L Waters Symposium: MALDI-TOF

WORKSHOP

Technological Advances in Ultra High Performance Liquid Chromatography

ORGANIZED CONTRIBUTED SESSIONS

Ionophore-Based Chemical Sensors II
Spectrochemical Analysis of Biological Systems - A Perspective from New and Established Investigators

ORAL SESSIONS

Biomedical Samples and Sensors
Drug Discovery
Electrochemical Sensors for Bioanalysis
Environmental Analysis of Metals in Water
Nanotechnology: Spectroscopy, Microscopy, and Imaging
Neurochemical Applications of Electrochemistry
Separation Sciences: General Interest, Food Science and Fuels, Energy and Petrochemical

POSTER SESSIONS

ACS DAC Poster Session
Gas Chromatography
High-Throughput Chemical Analysis
Magnetic Resonance
Pharmaceutical: LC and Data Analysis
Pharmaceutical: LC, Separation Sciences, Sensors and Data Analysis
Undergraduate Students Only Poster Session

Pittcon 2014 welcomes the Congresso Analtica 2013 Poster Award recipient. The award provides travel arrangements to Pittcon 2014.
Rafael Sutti, Faculdade de Ciencias Medicas da Santa Casa de Sao Paulo

The title of the award winning poster is CHROMATOGRAPHIC METHODOLOGIES APPLIED IN THE PURIFICATION OF BIOACTIVE MOLECULES IN THE VENOM OF TARANTULA SPIDERS #850-11P, Monday PM Poster Session, Pharmaceutical: LC, Separation Sciences, Sensors and Data Analysis

PITTCON 2014 AGENDA OF SESSIONS

TUESDAY MORNING, MARCH 4, 2014

AWARD AND SYMPOSIA

Pittsburgh Analytical Chemistry Award
The Coblentz Society/ABB – Bomem-Michelson Award
ACS DAC: Advances In Our Understanding of Complex Aerosols at the Individual Particle Level
Advanced Surface and Materials Analysis by XPS, Spectroscopic Ellipsometry, Nano- and ToF-SIMS, RBS, and Helium Ion Microscopy - The Power of These Techniques Individually and Combined
Analysis of Microbiome Contributions to the Human Biomarker Metabolome
Applications of Live Cell RNA Detection
Design and Application of Smart Materials for Chemical Sensing and Analysis
Imaging Mass Spectrometry of Biological Tissues and Cell Cultures
Integrated Microfluidics
JAIMA: The State-of-the-Art Technologies that Support Safety and Security in Future (I)
Liquid Chromatography in Microfluidics: A Workhorse Tool is Going Small Scale

ORGANIZED CONTRIBUTED SESSION

SEAC: The First Student Session in Electroanalysis

ORAL SESSIONS

Analysis of Bioagents and Explosives
Environmental Analysis of Non-Metals in Water (Half Session)
Food and Consumer Products Quality: Analysis Enhancements (Half Session)
Imaging: Advances and Applications (Half Session)
Liquid Chromatography/Mass Spectrometry: Bioanalytical and 'Omics Applications
Microfluidics: Bioanalytical
Pharmaceutical: LC
Raman SERS and Imaging
Sample Preparation: Environmental Water Analysis

POSTER SESSIONS

Agriculture
Clinical Chemistry and Toxicology
Food Science: Analytical Methods
FTIR/Raman/NIR Applications
New Products at Pittcon 2014
Physical Measurements

TUESDAY AFTERNOON, MARCH 4, 2014

AWARD AND SYMPOSIA

Pittsburgh Spectroscopy Award
Clinical Analysis: The Next Frontier in Mass Spectrometry
Current Challenges and New Analytical Techniques in Doping Detection
Current Status and Trends in the Analysis and Quality Control of Small Molecules, Biologics and Bio-Similars
Engineered Antibody-Mimics with Increased Affinity and Selectivity
JAIMA: The State-of-the-Art Technologies that Support Safety and Security in Future (II)
Nanoscale Compounds for Biological Imaging and Bioanalytical Analysis
New Directions in Water Characterization and Monitoring
Royal Society of Chemistry Session
Targeting Protein-Protein Interactions
Top-Down Mass Spectrometry of Proteins Relevant to Human Health Research

WORKSHOP

Advances in Protein and Peptide Separations

ORGANIZED CONTRIBUTED SESSIONS

High Throughput Analysis for Food Safety and Cosmetics
QbD Based Development of Analytical Methods for Product Characterization, Release, and Stability Studies - Present Status, Lessons Learned, and the Future

ORAL SESSIONS

Bioanalytical Spectroscopy
Capillary Electrophoresis: New Approaches for Bioanalytical Applications
Clinical Chemistry and Toxicology (Half Session)
Environmental Analysis of PAHs (Half-Session)
Forensic Analysis
Liquid Chromatography/Mass Spectrometry: Pharmaceutical and Environmental Applications
Microfluidics: Cells, Bacteria, Viruses
Neurochemistry: Dopamine and Serotonin
Separation Science: Novel Approaches to Improve Chromatographic Analysis

POSTER SESSIONS

Drug Discovery
Environmental Analysis of Toxic and Persistent Compounds
Environmental: Air Analysis
Environmental: Water
Food Science: Flavors
Food Science: Screening Strategies
Sensors: General Interest and Others

WEDNESDAY MORNING, MARCH 5, 2014

AWARD AND SYMPOSIA

ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science
ACS DAC: Chemometrics for Modeling and Analyzing Chemical Systems
ACS DAC: Nanofabrication and Nanoconstructs for Chemical Separations
Applications of the Newest Light Sources
Biological TERS: Instrumentation Development and Applications
IAEAC: Label-Free Biosensing: Impedance-Based Biosensors for Environmental Applications
Recent Advances in Laser Induced Breakdown Spectroscopy
Refining Chemical Analysis in the Central Nervous System
Science without Borders: Analytical Chemistry Opportunities in Brazil

ORGANIZED CONTRIBUTED SESSIONS

New Technologies and Methods in Protein Quantitation for Biotherapeutics and Clinical Diagnostics
Novel Application of Terahertz and Millimeter Waves in Spectroscopy and Imaging

ORAL SESSIONS

Application of Bioanalytical Sensors
Biospectroscopic Methods for Binding Studies (Half Session)
Chemometrics
Environmental Analysis of Persistent and Toxic Compounds
Food Science: Impurity Analysis and Content Determination
FTIR/Raman Analytical Applications
Mass Spectroscopy: 'Omics, Environmental and High Throughput Analytical
Mass Spectroscopy: Bioanalytical
Materials Science
Pharmaceutical: Others (Half Session)
X-Ray Techniques

POSTER SESSIONS

General Interests: Lab Informatics, Validation, Software and Process Analytics
Liquid Chromatography/Mass Spectrometry Applications
Mass Spectroscopy: General Interest
Polymer and Plastic Analysis
Process Analytical Chemistry
SEAC: Society for Electroanalytical Chemistry Poster Session
Separation Sciences: Bioanalytical and Pharmaceutical

WEDNESDAY AFTERNOON, MARCH 5

AWARDS AND SYMPOSIA

Ralph N Adams Award
The Coblentz Society - Williams-Wright Award
ACS DAC: Lifelong Teaching and Learning in Separation Science
Advances in Mass Spectrometry Based on Ultrashort Pulse Laser Technology
Analytical Innovations for Metabolomics
Bioinformatics: Metabolite Identification and Quantification
Biosensors and Single Cells: Speed, Sensitivity, Spatial Resolution
Global Challenges in Food Safety
New Enabling Analytical Techniques for Electrochemical Energy Materials
Quantitative Glycomic and Glycoproteomic Strategies
SAS: Applications of Vibrational Spectroscopy in Medical Diagnostics

WORKSHOP

Current Trends in Pharmaceutical Dissolution Testing

ORAL SESSIONS

Advances in Renewable Energy Research: Devices and Analyses
Developments of Bioanalytical Sensors
Environmental Analysis: Petrochemicals (Half Session)
Food Science: Bulk and Matrix Composition Analysis
Gas Chromatography: Carrier Gasses, Capillary Techniques (Half Session)
High-Throughput Chemical Analysis (Half Session)
Mass Spectroscopy: Bioanalytical and Biomedical
Mass Spectroscopy: Neurochemistry and General Interest
Neurochemistry: New Approaches to Better Information from Measurements
Process Analytical Chemistry: Techniques (Half Session)
Sampling/Sample Preparation: Biological Applications
Sensors: Environmental and Fuels, Energy and Petrochemical (Half Session)

POSTER SESSIONS

Bioanalytical Neurochemistry, Capillary Electrophoresis, Electrophoresis, and Microfluidics
Bioanalytical: Vibrational Spectroscopy
Biopharmaceutical Analysis
Mass Spectrometry for Art and Archaeological Analysis
Mass Spectroscopy: Bioanalytical and 'Omics
Pharmaceutical: GC, MS, LC/MS and Others
Sampling and Sample Preparation
Sensors: Bioanalytical and Biomedical
Separation Sciences: General Interest, Materials Science and Others

THURSDAY MORNING, MARCH 6, 2014

SYMPOSIA

ACS DAC: Interferometry in Chemistry, Biology and Medicine
Application of SERS Sensors to Biomedicine and the Environment
Characterization and Quality Control of Monoclonal Antibodies and Biopharmaceutical: Best Practices and Developments
Fiber-Based Analytical Platforms
Method Development Strategies for Two-Dimensional Liquid Chromatography
More Than One Way to Skin a Cat: The Diversity of Analytical Tools for Chemically Mapping the Brain
Nanobiotechnology against Cancer, Heart and Neurological Diseases: A Fight in Progress
Proteomic Imaging of Ultrastructure Brain Tissue
Toward a Preferred Instrument for Gram Scale Supercritical Fluid Chromatography (SFC) Purification

ORGANIZED CONTRIBUTED SESSIONS

SAS: Women in Spectroscopy

ORAL SESSIONS

Advances in Catalysis and Hydrocarbon Analysis
Bioanalytical Separations
Capillary Electrophoresis: Small Molecules and Neurotransmitters
Electrodes and Electrode Surfaces
Laboratory Informatics and Management (Half Session)
LC: Column Chemistry (Half Session)
Microfluidics: Monitoring and Multiple Analytes
Neurochemistry: Peptides, Amino Acids, Adenosine, Norepinephrine, Peroxide, and Oxygen
Water Treatment Technologies

POSTER SESSIONS

Biomaterials and Natural Products- Synthesis and Characterization
Chemical, Biological and Explosives Analysis
Forensic Analysis
Materials Science
Trace Metals and Gasses by AA, ICPMS, ICAFS
Water Quality Parameters: Still Providing Important Information

THURSDAY AFTERNOON, MARCH 6

SYMPOSIA

Electroanalytical Chemistry on the Nanoscale
Forensic Analysis in the Lab and Crime Scene
Novel Approaches in Quantitative Analysis of Biomarkers in Drug Discovery and Development
On-Farm Diagnostics for Improved Food Safety, Quality, and Production
Thinking Outside the Laboratory: Innovative Outreach and Educational Approaches that Bring Analytical Chemistry to New Audiences

ORGANIZED CONTRIBUTED SESSIONS

Advances in Sensor Technology for Food Safety and Food Quality
Recent Advances in Ion Chromatography

ORAL SESSIONS

Microfluidics: Novel Approaches
Voltammetry

Pittcon is pleased to offer webcasts of selected symposia and award sessions.
Look for the to identify the webcasted sessions.

SUNDAY, MARCH 2, 2014 AFTERNOON

THE WALLACE H. COULTER PLENARY LECTURE **Session 10**

The Wallace H. Coulter Plenary Lecture

Sunday Afternoon, Grand Ballroom S100a

4:45	(10-1)	**Quantitative Proteomics in Biology, Chemistry and Medicine** STEVEN A CARR, Broad Institute of MIT and Harvard

AWARD **Session 20**

Pittcon Heritage Award -
arranged by Sarah Reisert, Chemical Heritage Foundation

Sunday Afternoon, Grand Ballroom S100a

4:30		**Presentation of the 2014 Pittcon Heritage Award to Lynwood W Swanson, FEI Company by Carsten Reinhardt, Chemical Heritage Foundation President**

SYMPOSIUM **Session 30**

ACS DAC: Analytical Advances in Clinical Diagnostics -
arranged by Barbara Bojko, University of Waterloo

Sunday Afternoon, Room S401a

Barbara Bojko, University of Waterloo, Presiding

1:30		**Introductory Remarks - Barbara Bojko**
1:35	(30-1)	**Solid Phase Microextraction and Clinical Medicine - What is the Next Step?** MARCIN WASOWICZ, Toronto General Hospital/University of Toronto
2:10	(30-2)	**Population Based Omics** JONAS BERGQUIST, Uppsala University
2:45	(30-3)	**Searching for Metabolite Biomarkers of Neurological Disorders Using LC-MS Based Metabolomics** LIANG LI, University of Alberta
3:20		**Recess**
3:35	(30-4)	**Solid Phase Microextraction – Multipurpose Tool for Clinical Analysis** BARBARA BOJKO, University of Waterloo, Janusz Pawliszyn
4:10		**Open Discussion**

SYMPOSIUM **Session 40**

ALMA: Attracting, Developing and Maintaining a Lab's Greatest Asset, Its Staff
arranged by Dennis Swijter, IFF R&D

Sunday Afternoon, Room S401bc

Dennis Swijter, IFF R&D, Presiding

1:30		**Introductory Remarks - Dennis Swijter**
1:35	(40-1)	**Recruiting and Onboarding New Staff** SCOTT HANTON, Intertek
2:10	(40-2)	**Staffing Considerations for the Unique Career Path of Core Laboratory Support** ERIC MARTIN, Harvard Center for Nanoscale Systems
2:45	(40-3)	**Development and Application of Competencies via Functional Teams** JAMES J SCOBBO, SABIC
3:20		**Recess**
3:35	(40-4)	**High Performing and Happy: Team Development in a Research and Development Analytical Testing Lab** STEPHANIE A MABRY, Afton Chemical Corporation
4:10	(40-5)	**Attracting, Developing and Maintaining a Lab's Greatest Asset, Its Staff – A Public Utility Perspective** NIRMELA ARSEM, EBMUD

SYMPOSIUM **Session 50**

Controlled Nanopores for Chemical Separations and Sensing
arranged by Takashi Ito, Kansas State University and Lane A Baker, Indiana University

Sunday Afternoon, Room S401d

Takashi Ito, Kansas State University, Presiding

1:30		**Introductory Remarks - Takashi Ito and Lane A Baker**
1:35	(50-1)	**Cylindrical Domain Alignment and Molecular Diffusion in Block Copolymer Films Studied with Single Molecule Tracking** TAKASHI ITO, Kansas State University, Khanh-Hoa Tran-Ba, Daniel A Higgins
2:10	(50-2)	**Electroanalytical Opportunities of Nanoscale Liquid-Liquid Interfaces Formed in Nanopores** DAMIEN ARRIGAN, Curtin University
2:45	(50-3)	**Block Polymer Routes to Nanoporous Materials** MARC HILLMYER, University of Minnesota
3:20		**Recess**
3:35	(50-4)	**Separation of Ions Using Electrical Potentials in Nanoporous Membranes** MERLIN BRUENING, Michigan State University, Jason Armstrong, Yaroshchuk Andriy
4:10	(50-5)	**Nanoscale Squeezing in Tunable Nanochannels Linearize DNA and Chromatin** SHUICHI TAKAYAMA, University of Michigan

SYMPOSIUM **Session 60**

NSF Centers for Advancing Instrument Development and Analytical Research
arranged by Alan G Marshall, Florida State University
and Zeev Rosenzweig, University of Maryland Baltimore County

Sunday Afternoon, Room S402a

Zeev Rosenzweig, University of Maryland Baltimore County, Presiding

1:30		**Introductory Remarks - Alan G Marshall and Zeev Rosenzweig**
1:35	(60-1)	**Advancing Chemical Measurement and Imaging in Centers** ZEEV ROSENZWEIG, University of Maryland Baltimore County
2:10	(60-2)	**A Center Approach for Creating and Studying Real World Chemical Complexity in the Laboratory in the NSF Center for Aerosol Impacts on Climate and the Environment** KIMBERLY A PRATHER, University of California, San Diego, Vicki Grassian
2:45	(60-3)	**Chemistry at the Space-Time Limit** ERIC O POTMA, University of California, Irvine
3:20		**Recess**
3:35	(60-4)	**Analytical Chemistry at Center for the Physics of Living Cells** TAEKJIP HA, University of Illinois at Urbana-Champaign
4:10	(60-5)	**NSF National High Field Fourier Transform Ion Cyclotron Resonance User Facility: Instrumentation, Science Drivers, Structure, and Operation** ALAN G MARSHALL, Florida State University, Greg T Blakney, Nathan K Kaiser, Amy M McKenna, Ryan P Rodgers, Chad R Weisbrod, Nicolas L Young

SYMPOSIUM **Session 70**

Quantitative Microfluidic Molecular and Cellular Analysis Towards Systems Biology
arranged by Yong Zeng and Susan Lunte, University of Kansas

Sunday Afternoon, Room S402b

Yong Zeng, University of Kansas, Presiding

1:30		**Introductory Remarks - Yong Zeng and Susan Lunte**
1:35	(70-1)	**Arrayed Nanoscale Cell Stimulation and Analysis** DINO DI CARLO, University of California, Los Angeles
2:10	(70-2)	**Nanowell-Based Technology for Single-Cell Analysis** J CHRISTOPHER LOVE, Koch Institute at MIT
2:45	(70-3)	**On-Chip Diagnostic System for Circulating Tumor Cells** HAKHO LEE, Massachusetts General Hospital, Jae-hoon Chung, Huilin Shao, Ralph Weissleder
3:20		**Recess**
3:35	(70-4)	**Single Molecule Protein and Nucleic Acid Assays for Single Cell Analysis** DAVID R WALT, Tufts University, Mael Manesse, Stephanie M Schubert, Barrett Duan
4:10	(70-5)	**Quantitative Biomedical Analyses Enabled by Microfluidic Molecular Biotechnology** YONG ZENG, University of Kansas

SYMPOSIUM **Session 80**

The Science and Impact of Transformative Technologies on Forensic Science

arranged by David R Walt, Tufts University and Christian Hassell, FBI Laboratory

Sunday Afternoon, Room S404bc

David R Walt, Tufts University, Presiding
Christian Hassell, FBI Laboratory, Presiding

1:30		**Introductory Remarks - David R Walt and Christian Hassell**
1:35	(80-1)	**Balancing Analytical Rigor and Expediency in Forensics** CHRISTIAN HASSELL, FBI Laboratory
2:10	(80-2)	**Ambient Ionization and Miniature Mass Spectrometers in Forensic Science** ROBERT G COOKS, Purdue University, Ryan Espy, Pu Wei, Christopher J Pulliam, Zheng Ouyang
2:45	(80-3)	**Advancements in Explosives Detection Technology** ERIC HOUSER, Department of Homeland Security
3:20		**Recess**
3:35	(80-4)	**Science and Impact of Illumina Technology on Forensic Genomics** CYDNE HOLT, Illumina, Joseph Varlaro, Kathryn Stephens
4:10	(80-5)	**Statistical Aspects of the Forensic Identification Source Problem** CHRISTOPHER P SAUNDERS, South Dakota State University, JoAnn Buscaglia, Joshua R Dettman

WORKSHOPS **Session 90**

CACA: How to be Successful in Your Career

arranged by Xiang Zhang, University of Louisville and Michael Ye, Supelco/Sigma-Aldrich

Sunday Afternoon, Room S404a

Michael Ye, Supelco/Sigma-Aldrich, Presiding

1:30		**Introductory Remarks - Michael Ye**
1:35	(90-1)	**How Pittcon Helped Me to Build Up My Career** PERRY G WANG, US FDA
2:05	(90-2)	**Working in Research and Development at a Global Company** XIAODONG LIU, Thermo Fisher Scientific
2:35		**Recess**
2:50	(90-3)	**How to Turn Your Dreams into Reality – A Personal Experience** TAO JIANG, Mallinckrodt Pharmaceuticals
3:20	(90-4)	**How to Face Challenges at Different Stages of Our Career – Lessons Learned** YAN-BO YANG, BioPharmaDev, Inc.
3:50		Open Discussion

ORGANIZED CONTRIBUTED SESSIONS **Session 100**

Infrared Spectroscopy (Well Beyond) the Diffraction Limit

arranged by Ellen V Miseo, Analytical Answers, Inc. and Peter Griffiths, University of Idaho

Sunday Afternoon, Room S404d

Ellen V Miseo, Analytical Answers, Inc., Presiding

1:30	(100-1)	**Expanding Applications for AFM-Based Infrared Nanospectroscopy** CRAIG B PRATER, Anasys Instruments, Kevin Kjoller, Qichi Hu, Michael Lo, Curtis Marcott
1:50	(100-2)	**Introducing Nano-FTIR – Imaging and Spectroscopy at 10nm Spatial Resolution** ANDREAS HUBER, Neaspec GmbH
2:10	(100-3)	**High-Resolution Mid-Infrared Micro-Spectroscopic Imaging with a Broadly Tunable Quantum Cascade Laser** ROHIT BHARGAVA, University of Illinois Urbana-Champaign, Kevin Yeh
2:30	(100-4)	**Characterization of Materials Using AFM-Based Nanomechanical, Nanothermal, and Nanoscale Infrared Spectroscopy and Imaging** CURTIS MARCOTT, Light Light Solutions, Michael Lo, Qichi Hu, Eoghan Dillon, Kevin Kjoller
2:50		**Recess**
3:05	(100-5)	**Surface-Enhanced Photothermal Induced Resonance (SE-PTIR): A New Method for Imaging Near Field Hot Spots and Dark Plasmonic Modes** ANDREA CENTRONE, National Institute of Standards and Technology
3:25	(100-6)	**Infrared Nanoimaging and Nano-FTIR Spectroscopy - From Nanoscale Chemical Identification of Polymers to Real-Space Imaging of Graphene Plasmons** RAINER HILLENBRAND, CIC nanoGUNE
3:45	(100-7)	**Structure and Morphology in Triaxial Electrospun Fibers** BRUCE CHASE, University of Delaware, John Rabolt, Wenwen Liu
4:05	(100-8)	**Probing Low Frequency Vibrational Excitations and Their Effect on Electron and Proton Transport in Proteins** PAUL M CHAMPION, Northeastern University

ORGANIZED CONTRIBUTED SESSIONS **Session 110**

Orthogonal and Risk-Based Sensing Systems for Homeland Security Applications -

arranged by Samar K Guharay, MITRE
and Eric Houser, Department of Homeland Security Science & Technology

Sunday Afternoon, Room S405a

Samar K Guharay, MITRE, Presiding
Eric Houser, Department of Homeland Security Science & Technology

1:30	(110-1)	**Task-Specific Information and Compression Imaging** MARK NEIFELD, University of Arizona
1:50	(110-2)	**Adaptive Management of Multi-Modality Screening** LAWRENCE CARIN, Duke University
2:10	(110-3)	**Data Fusion Methodologies for Information Exploitation and Situational Awareness** PRAMOD K VARSHNEY, Syracuse University
2:30	(110-4)	**Risk-Aware Model-Based Planning and Execution** DAVID C WANG, Massachusetts Institute of Technology (MIT), Masahiro Ono, Brian C Williams
2:50		**Recess**
3:05	(110-5)	**Orthogonal Sensing Framework** SAMAR K GUHARAY, MITRE
3:25	(110-6)	**Measurement Bounds for Sparse Signal Ensembles via Graphical Models** MARCO F DUARTE, University of Massachusetts Amherst
3:45	(110-7)	**Automatic Detection of Unknown Explosive Materials** RICHARD ROBEHR BIJJANI, Quanttus
4:05	(110-8)	**Orthogonal Detection of Explosive Particulate Residues Using LWIR Hyperspectral Micro Imaging and Fluorescence Quenching Methods** MARK FISHER, FLIR Systems, Eugene L Miller, Adam Bingham, Ed Knobbe, Igor Novosselov

ORGANIZED CONTRIBUTED SESSIONS **Session 120**

Specialty Gas

arranged by Tracey Jacksier, Air Liquide and Jorge Perez, CIC Photonics, Inc.

Sunday Afternoon, Room S405b

Tracey Jacksier, Air Liquide, Presiding

1:30	(120-1)	**Analysis of HF Impurities: Further Analysis Impurities** JORGE E PEREZ, CIC Photonics, Inc, David Schafer, Richard T Meyer
1:50	(120-2)	**Validation Strategy Accuracy Profile for Interferences Analysis in Low Levels** ANGELIQUE GUILLOTEAU, Air Liquide
2:10	(120-3)	**A New Atmospheric Sulfur Hexafluoride Gas Standard Suite** JENNIFER CARNEY, NIST, George Rhoderick
2:30	(120-4)	**Setting the Foundation for Zero Gas Standards** ANNARITA BALDAN, VSL B.V., Stefan Persijn, Gerard Nieuwenkamp, Janneke van Wijk
2:50		Recess
3:05	(120-5)	**Direct Sensing of Trace Oxygen Using Continuous-Wave Cavity Ring-Down Spectroscopy** FLORIAN ADLER, Tiger Optics, LLC
3:25	(120-6)	**HEMS for Analysis of Hydrogen Gas** LUIS BREZINER, Power and Energy, Inc., Peter Bossard, Jacques Mettes
3:45	(120-7)	**Latest Advances in Gas-Phase Raman Analyzers and Applications** IAN R LEWIS, Kaiser Optical Systems, Inc., Ron Fairchild, Joe Slater, David J Strachan, Jim Tedesco, Peter van Vuuren, Pat Wiegand
4:05	(120-8)	**UHP Ammonia Analysis** ALEX LOWE, Peak Laboratories, LLC

ORAL SESSIONS **Session 130**

A 'Sampling' of Data Analysis and Manipulation

Sunday Afternoon, Room S501a

Lara P Phelps, US Environmental Protection Agency, Presiding

1:30	(130-1)	**Enhancing Two-Dimensional Peak Detection in Fast On-Line LC x LC-UV Data through Incorporation of a Spectroscopic Dimension** ROBERT C ALLEN, University of Minnesota, Marcelo R Filgueira, Peter W Carr
1:50	(130-2)	**Auto-Generated Live Biotransformation Schemes Via User-Assisted Metabolite Scouting and Extraction from LC/MS Data** GRAHAM A MCGIBBON, ACD/Labs, Inc., Andrey Paramonov, Vitaly Lashin, Dmitry Mityushev, Richard Lee, Kiril Lanevskij, Andrius Sazonovas, Pranas Japertas
2:10	(130-3)	**Seeing the Forest for the Trees - High Resolution Data Correlation of Chemical and Physiological Signals from the Intensive Care Unit** SUSAN A MULCAHY, Imperial College London, Martyn G Boutelle
2:30	(130-4)	**The Brain-Instrument Interface** BILL ANDERSON, Hampden Sydney College, Arley Morelock, Taylor Redmond
2:50		Recess
3:05	(130-5)	**Equilibrium Distribution Sampling Device for Preparation of Calibration Mixtures for Gas Chromatography-Mass Spectrometry** XIAOFENG XIE, Brigham Young University, H Dennis Tolley, Milton L Lee
3:25	(130-6)	**Insight into the Extraction Mechanism of Polymeric Ionic Liquid Sorbent Coatings in Solid-Phase Microextraction** WILLIAM T COLE, The University of Toledo, Tien D Ho, Jared L Anderson
3:45	(130-7)	**The Importance of a Dry Extract for Alternative Chromatographic Carrier Gas Use** ZOE GROSSER, Horizon Technology, Michael Flournoy, Jeffery Fentress, Ralph Rabish
4:05	(130-8)	**Synthesis and Characterization of Hydrophobic Magnetic Ionic Liquids** OMPRAKASH NACHAM, The University of Toledo, Honglian Yu, Jared L Anderson

ORAL SESSIONS **Session 140**

Bioanalytical Applications of Electrochemistry

Sunday Afternoon, Room S501bc

Jason A Bennett, Penn State Erie, The Behrend College, Presiding

1:30	(140-1)	**Development of a New Waveform for Improved Determination of Carbohydrates Using High Performance Anion Exchange with Pulsed Amperometric Detection** YAN LIU, Thermo Fisher Scientific, Petr Jandik, Jun Cheng, Christopher Pohl
1:50	(140-2)	**Understanding and Advancing Dicyano-Ferriprotoporphyrin for Selective H2S Detection** JASON A BENNETT, Penn State Erie, The Behrend College
2:10	(140-3)	**A New Microfluidic Platform for Real-Time Viability Assessment of Human Organs** SALLY GOWERS, Imperial College London, Isabelle Samper, Claire Authesserre, Michelle Rogers, Karim Hamaoui, Vassilios Papalois, Daniel Casanova, George Hanna, Ara Darzi, Martyn G Boutelle
2:30	(140-4)	**Theoretical Investigation of Generator-Collector Microwell Arrays for Improving Electroanalytical Selectivity - Application to Selective Dopamine Detection in Presence of Ascorbic Acid** ALEXANDER OLEINICK, ENS-CNRS-UPMC, Feng Zhu, Jiawei Yan, Bingwei Mao, Irina Svir, Christian A Amatore
2:50		**Recess**
3:05	(140-5)	**Label-Free Impedimetric Immunosensor Based on Signal Amplification Strategy of PS-b-PAA Film and Biotin-Streptavidin Conjunction for Determination of Alpha Fetoprotein** CHENGYIN WANG, Yangzhou University
3:25	(140-6)	**Development of Bio Film Based Electrocatalytic Systems Active Towards Oxygen Reduction** PAWEL J KULESZA, University of Warsaw
3:45	(140-7)	**On the Use of Amperometry for the Real Time Assessment of Drug-Release Profile from Therapeutic Nanoparticles** MOHAMMADREZA MALEKAHMADI, Shahrekord University of Medical Science, Aliasghar Ensafi, Esmaeil Heydari
4:05	(140-8)	**Assessment of Genotoxicity of Catecholics Using Impedimetric DNA–Biosensor** ALIASGHAR ENSAFI, Isfahan University of Technology, Maryam Amini

ORAL SESSIONS **Session 150**

Bioanalytical Imaging (Half Session)

Sunday Afternoon, Room S502a

Maria K Ferguson, PA Dept of Environmental Protection, Presiding

1:30	(150-1)	**Automated Quantitative Analysis of Lipid Accumulation and Hydrolysis in Living Macrophages with Label-Free Imaging** WEI-WEN CHEN, TIGP-MST Program, National Tsing Hua University, Chen-Hao Chien
1:50	(150-2)	**A Targeted, Self-Delivered and Photocontrolled Molecular Beacon for mRNA Detection in Living Cells** LIPING QIU, University of Florida
2:10	(150-3)	**Measurement of Intracellular Reactive Oxygen Species in Islets of Langerhans Using Fluorescence Microscopy** XUE WANG, Florida State University, Michael G Roper
2:30	(150-4)	**Surface Plasmon Resonance Imaging for Biofilm Studies** PEGAH N ABADIAN, Northeastern University, Edgar D Goluch

ORAL SESSIONS **Session 160**

Bioanalytical Microfluidics

Sunday Afternoon, Room S501d

Charlisa Daniels, Trinity University, Presiding

1:30	(160-1)	**High-Density Electrode Array for Spatiotemporal Imaging of Live Tissue Slices** JOHN B WYDALLIS, Colorado State University, Charles S Henry, Tom Chen, Stuart Tobet, Rachel M Feeny
1:50	(160-2)	**Tracking Adhesion of Individual Bacteria to Surfaces in a Microfluidic Environment** JOSHUA D BAKER, Indiana University, Seth M Madren, Adrien Ducret, David T Kysela, Yves V Brun, Stephen C Jacobson
2:10	(160-3)	**Synchronization of Islets of Langerhans Using a Microfluidic Feedback System** RAGHURAM DHUMPA, Florida State University, Tuan M Truong, Xue Wang, Richard Bertram, Michael G Roper
2:30	(160-4)	**A Simple Aqueous Additive that Imparts Biocompatibility to Perfluorocarbon Surfactants for Droplet-Based DNA Amplification and Protein Sensing** XIANGPENG LI, Auburn University, Cheryl J DeJournette, Christopher J Easley
2:50		**Recess**
3:05	(160-5)	**3D-Printed Fluidic Device with Integrated Removable Nafion-Coated Electrodes for the Detection of Oxygen in Blood** JAYDA ERKAL, Michigan State University, Dana Spence
3:25	(160-6)	**Development of a Microfluidic Device Assay for Isoforms of a Serum Protein Cancer Biomarker Using a Novel Antibody** JAYSON PAGADUAN, Brigham Young University, Madison Ramsden, Sean Derenthal, Kim O'Neill, Adam T Woolley
3:45	(160-7)	**Microfluidic Study of Cancer Drug Response Under Normal and Hypoxic Conditions** GRISHMA KHANAL, Texas Tech University, Dimitri Pappas
4:05	(160-8)	**Flow-Valve Microfluidic Devices for Simple, Detectorless and Label-Free Quantitation of Proteins and Nucleic Acids** DEBOLINA CHATTERJEE, Brigham Young University, Jayson Pagaduan, Adam T Woolley

ORAL SESSIONS **Session 170**

Biomedical Imaging (Half Session)

Sunday Afternoon, Room S502a

Abd Elmoneim Afify, Cairo University, Presiding

3:05	(170-1)	**Using 2-Photon Microscopy of Brain Tissue During Microdialysis Probe Insertion** ANDREA JAQUINS-GERSTL, University of Pittsburgh, Kozai DY Takashi, Tracy Cui, Adrian C Michael
3:25	(170-2)	**Interaction Between Nanoparticles and Lipid Membrane Studied with Three-Dimensional Single Particle Tracking** LUYANG ZHAO, North Carolina State University, Gufeng Wang
3:45	(170-3)	**Near-Infrared Imaging in Living Cells with Yb3+ nanoMOFs** KRISTY GOGICK, University of Pittsburgh, Alexandra Foucault-Collet, Kiley A White, Sandrine Villette, Agnes Pallier, Guillaume Collet, Tao Li, Steven J Geib, Nathaniel L Rosi, Stephane Petoud
4:05	(170-4)	**Systematic Mechanism Study of Cytotoxicity Variation between Zinc Oxide Nanoparticles and Free Zinc Ions** QINGBO YANG, Missouri University of Science and Technology, Serena Shi, Tien-Sung Lin, Kun Liu, Baojun Bai, Honglan Shi, Yinfa Ma

ORAL SESSIONS **Session 180**

Fluorescence/Luminescence: Bio and Nano

Sunday Afternoon, Room S502b

Gary L Emmert, University of Memphis, Presiding

1:30	(180-1)	**Investigating Molecule-Surface Interactions with Stimulated Emission Depletion (STED)-Based Microscopy** FANG CHEN, North Carolina State University, Bhanu Neupane, Gufeng Wang
1:50	(180-2)	**Rhodamine B Conjugated Core-Shell Nanocomposite Cell Labels** MEICONG DONG, Texas Tech University, Dimitri Pappas, Yu Tian
2:10	(180-3)	**Characterization of Solute Distribution Following Drug Administration by Iontophoresis** DOUGLAS C KIRKPATRICK, University of North Carolina, Martin Edwards, R Mark Wightman
2:30	(180-4)	**Tracking Surfactant-Assisted Wetting of Hydrophobic Nanoporous Silica with Confocal Fluorescence Imaging** RACHEL L SEURER, University of Iowa
2:50		**Recess**
3:05	(180-5)	**Ensemble and Single Molecule Fluorescence Studies of Molecular Diffusion in One-Dimensional Microdomains of Cylinder-Forming Polystyrene-Poly(ethylene oxide) Diblock Copolymer Films** KHANH-HOA TRAN-BA, Kansas State University, Daniel A Higgins, Takashi Ito
3:25	(180-6)	**High Signal Gain of Intracellular mRNA Imaging Using DNA Circuit Amplifier** CUICHEN WU, University of Florida, Da Han, Weihong Tan
3:45	(180-7)	**Luminescence Quenching by Photoinduced Charge Transfer between Metal Complexes in Peptide Nucleic Acids** XING YIN, University of Pittsburgh, Jing Kong, Arnie De Leon, Yongle Li, Emil Wierzbinski, Catalina Achim, David Waldeck
4:05	(180-8)	**In Situ Monitoring of CdSe/ZnS Quantum Dot Growth During Microwave Synthesis** ANDREW ZANE, The Ohio State University, Prabir Dutta, James Waldman, Debbie Knight, Christie McCracken

ORAL SESSIONS **Session 190**

Gas Chromatography: Analytical Methods, Theoretical Considerations

Sunday Afternoon, Room S503a

William Barber, Agilent Technologies, Presiding

1:30	(190-1)	**Uncertainty of Blood Alcohol Concentration (BAC) Results as Related to Instrumental Conditions: Optimization and Robustness of BAC Analysis Parameters** HALEIGH BOSWELL, The Pennsylvania State University, Frank Dorman
1:50	(190-2)	**Development of a Modernized Capillary Gas Chromatography Assay Test for Fatty Alcohol Monographs in the National Formulary and Food Chemicals Codex** CLAIRE N CHISOLM, US Pharmacopeia, Eduardo Lim, Fatkhulla K Tadjimukhamedov, Karen V Gilbert, Natalia Kouznetsova
2:10	(190-3)	**Comparison of Headspace Sampling and Polymer Precipitation for Determination of Residual Solvents in Polymer Films** RACHA SEEMAMAHANNOP, Brewer Science Inc., Darin Collins, Thomas Brown
2:30	(190-4)	**Measurement of Gaseous Impurities in Hydrogen Fuel** RANDALL BRAMSTON-COOK, Lotus Consulting
2:50		**Recess**
3:05	(190-5)	**Partition Coefficient in Static Headspace Single Drop Micro Extraction of Aromatic Hydrocarbons from Water Using Ionic Liquids** RAMKUMAR DHANDAPANI, Seton Hall University, Nicholas H Snow, Chopra Shilpi
3:25	(190-6)	**Thermodynamic Modeling of Gas Chromatographic Retention Times – A Round Robin Trial** JAMES J HARYNUK, University of Alberta, Teague M McGinitie, Heshmatollah Ebrahiminajafabadi, Alessandro Casilli, Jean-Marie D Dimandja, Frank Dorman, Philip J Marriott
3:45	(190-7)	**A Novel Wall Coated Open Tubular Column for Analysis of Sulfur Compounds Using SCD** GARY LEE, Agilent Technologies, Yun Zou, Allen K Vickers, Kenneth G Lynam
4:05	(190-8)	**Enhancing Separation Performance of Microfabricated Gas Chromatography Using Temperature Gradients** ANZI WANG, Brigham Young University, Aaron R Hawkins, H Dennis Tolley, Milton L Lee

ORAL SESSIONS **Session 200**

Methods for Metabolomics, Lipidomics, and Proteomics

Sunday Afternoon, Room S503b

Rabih E Jabbour, Private Citizen, Presiding

1:30	(200-1)	**Lipidomic Profiling Using Sub-2µm Particle CO2 Based Supercritical Chromatography Mass Spectrometry** GIORGIS ISAAC, Waters Corporation, Michael D Jones, James Langridge
1:50	(200-2)	**Comprehensive Qualitative and Quantitative Proteomics Analysis of Single Xenopus Laevis Embryos at Early Stages of Development** LIANGLIANG SUN, University of Notre Dame, Michelle M Bertke, Matthew M Champion, Paul W Huber, Guijie Zhu, Norman J Dovichi
2:10	(200-3)	**Untargeted Analysis of Human Urine Using Fast Online Comprehensive Two Dimensional Liquid Chromatography (LC X LC)** BRIAN B BARNES, University of Minnesota, Peter W Carr
2:30	(200-4)	**In Vivo Solid-Phase Microextraction Sampling for Chemical Exploration of Underwater Ecosystems** VINCENT BESSONNEAU, University of Waterloo, Barbara Bojko, Janusz Pawliszyn
2:50		**Recess**
3:05	(200-5)	**Feature Selection for Chemometric Treatment of Metabolomics Data – A Comparative Study** JAMES J HARYNUK, University of Alberta, A Paulina de la Mata, Nikolai A Sinkov, Aiko Barsch, Ana Dominguez-Vidal
3:25	(200-6)	**Development of a High Throughput Integrated, Multi-Disciplinary "Omics" Platform to Support Basic Research Into Disease Understanding and Patient Stratification** ROBERT S PLUMB, Imperial College London

ORAL SESSIONS **Session 210**

Novel Teaching Strategies for Analytical Chemistry (Half Session)

Sunday Afternoon, Room S504a

Susan Zawacky, Sewickley Academy, Presiding

1:30	(210-1)	**The Use of Online Response Systems for Content Review in Analytical Chemistry** JAMES P GRINIAS, University of North Carolina at Chapel Hill, James W Jorgenson
1:50	(210-2)	**Pittcon as a Curriculum** BILL ANDERSON, Hampden Sydney College, Herbert J Sipe
2:10	(210-3)	**Analytical Method Transfer (AMT): Development of Laboratory Experiments and Related POGIL Activities** KIMBERLY CHICHESTER, St. John Fisher College, Irene Kimaru, Kristina Lantzky, Fang Zhao, Marina Koether
2:30	(210-4)	**Application of Recent Developments in Commercial HPLC Technology to Teach Liquid Chromatography in Large-Enrollment Undergraduate Laboratories** CHRISTOPHER P PALMER, University of Montana, Adams R Earle, Holly Thompson

ORAL SESSIONS **Session 220**

Nuclear Power Plant Chemical Analysis (Half Session)

Sunday Afternoon, Room S504a

Garry J Lynch, Bechtel Marine Propulsion Corporation, Presiding

3:05	(220-1)	**Determination of Polyacrylic Acid and Trace Anions in Nuclear Power Plant Pressurized Water Reactors** CHEN YONGJING, Thermo Fisher Scientific, Brian De Borba, Jeffrey Rohrer
3:25	(220-2)	**Graded Spectroscopic Approaches to Monitoring Plutonium Reprocessing** ROBERT LASCOLA, Savannah River National Laboratory, Edward A Kyser, Patrick E O'Rourke
3:45	(220-3)	**Quantification of Radioactive Strontium-90 Using ICP-QMS with On-Line Serial Separation and its Application to Radioactive Contamination Survey** YOSHITAKA TAKAGAI, Fukushima University, Makoto Furukawa, Kameo Yutaka, Kiwamu Tanaka, Katz Suzuki
4:05	(220-4)	**Capillary Ion Chromatographic Determination of Trace-Level Anions in Nuclear Power Plant Waters** YAN LIU, Thermo Fisher Scientific, Victor Barreto, Christopher Pohl

ORAL SESSIONS **Session 230**

Polymer and Plastic Material Characterization (Half Session)

Sunday Afternoon, Room S504bc

Nathaniel R Gomer, ChemImage Sensor Systems, Presiding

1:30	(230-1)	**Nanoscale Dynamic Mechanical Spectroscopy of Polymer Blends and Composites** EOGHAN DILLON, Anasys Instruments, Michael Lo, Kevin Kjoller, Craig B Prater
1:50	(230-2)	**Role of Interstitial Fraction on the Protein Binding Capacity of C-CP Fiber Columns** MARISSA PIERSON, Clemson University, Zhengxin Wang
2:10	(230-3)	**Investigating the Molecular Effects of Short Wave UV Light Treatments on the Surface and Bulk of Bis-2-Ethylhexyl Phthalate Plasticized PVC** JEANNE M HANKETT, University of Michigan, Alexander Welle, Zhan Chen
2:30	(230-4)	**Two-Dimensional Chromatography Applied to Compounding Extrusion** STEPHAN MOYSES, Sabic

ORAL SESSIONS **Session 240**

Sensors: Bioanalytical

Sunday Afternoon, Room S504d

Mustafa Culha, Yeditepe University, Presiding

1:30	(240-1)	**Tuning the Plasmonic Properties of Gold Nanohole Arrays Towards Biosensing** MAXIME COUTURE, Université de Montréal, Hugo-Pierre Poirier-Richard, Jean-François Masson
1:50	(240-2)	**Enhancement of Heterogeneous Assays Using Fluorescent Magnetic Liposomes** KATIE EDWARDS, Cornell University, Antje Baeumner
2:10	(240-3)	**Room Temperature and Open Air DNA Detection by RAFT Polymerization and Its Kinetic Studies** KANGSHU ZHAN, North Carolina State University, Lin He
2:30	(240-4)	**A Sandwich Biosensor Using Dual Aptamers Developed by Immobilization-Free Screening** MAN BOCK GU, Korea University, Jee-Woong Park, Su Jin Lee
2:50		**Recess**
3:05	(240-5)	**Reconstruction of Color of Miniature Optode-Based Sensing Wells from Under Semi-Transparent Layers with Absorption and Scattering Properties Modeling the Skin** MIKLOS GRATZL, Case Western Reserve University, Slavko Rebec
3:25	(240-6)	**Development of Electrochemical Sensors for Detection of Ultralow Levels of MicroRNAs** MAHMOUD LABIB, University of Ottawa, Maxim V Barazovski
3:45	(240-7)	**Use of Magnetically Modulated Optical Nanoprobes (MagMOONs) as Sensors in Proteolysis Detection** KHANHVAN T NGUYEN, Clemson University, Jeffrey N Anker
4:05	(240-8)	**Ionic Liquid Polymerized Photonic Crystal Gas Sensors** NATASHA L SMITH, University of Pittsburgh, Zhenmin Hong, Sanford A Asher

ORAL SESSIONS **Session 250**

Separation Sciences: Bioanalytical and Pharmaceutical

Sunday Afternoon, Room S505a

Evan M Hetrick, Eli Lilly and Company, Presiding

1:30	(250-1)	**New Approaches to High Selective SPME for Coupling with HPLC** ZILIN CHEN, Wuhan University, Wenpeng Zhang
1:50	(250-2)	**Assessment of Capillary-Channeled Polymer (C-CP) Films Employed for Protein Separations Prior to Analysis** by MALDI-MS BENJAMIN T MANARD, Clemson University, R Kenneth Marcus
2:10	(250-3)	**Toward Transmembrane Protein (TMP) -Functionalized, Biomimetic Stationary Phases for Ligand Screening** JINYAN WANG, The University of Arizona, Elyssia S Gallagher, Kendall E Sandy, Craig A Aspinwall
2:30	(250-4)	**Displacement Separations in SFC for Analytical and Prep Scale (Chiral and Non-Chiral)** JOHN WHELAN, Waters Corporation
2:50		**Recess**
3:05	(250-5)	**Method Development for Chiral Separations Using Analytical Scale Supercritical Fluid Chromatography** THOMAS SWANN, Waters Corporation, Kenneth J Fountain, Christopher J Hudalla, Jacob N Fairchild, Mark Baynham
3:25	(250-6)	**Modification of Capillary-Channeled Polymer (C-CP) Fibers with Functionalized Lipids for the Separation and Extraction of Biomolecules** ABBY SCHADOCK-HEWITT, Clemson University, R Kenneth Marcus
3:45	(250-7)	**Flow Rate Dependence on Chiral Selectivity and Resolution in SFC: Conventional Wisdom is Not Always the Best Advice** J PRESTON, Phenomenex, Michael McCoy, William Farrell, Sky Countryman
4:05	(250-8)	**Separation Orthogonality in HPLC Method Development** WILLIAM JOHN LONG, Agilent Technologies, Anne Mack, Xiaoli Wang, Jason Link, Maureen Joseph

ORAL SESSIONS **Session 260**

Separation Sciences: Materials Science and Others (Half Session)

Sunday Afternoon, Room S504bc

Nathaniel R Gomer, ChemImage Sensor Systems, Presiding

3:05	(260-1)	**Dynamically-Tunable Nanoporous Gold Membranes for Size- and Charge-Selective Separations** DANIEL A MCCURRY, University of Illinois at Urbana-Champaign, Ryan C Bailey
3:25	(260-2)	**Modification of Monolithic Structures with Carbon Based Nanoparticles for Liquid Chromatography** LISANDRA SANTIAGO-CAPELES, University at Buffalo - SUNY, Zuqin Xue, John C Vinci, Luis A Colon
3:45	(260-3)	**The Development of Aptamers Against Mitochondria via Immunomagnetic Enrichment** THANE TAYLOR, University of Minnesota: Twin Cities, Edgar A Arriaga, Michael T Bowser
4:05	(260-4)	**SFC Modifier and Combined Stream Injection Modes, and Sample Diluent Effects** STEVEN ZULLI, Waters Corporation, Jonathan L Jones, Ziqiang Wang

ORAL SESSIONS **Session 270**

Trace Metals by Atomic Emission Sources (Half Session)

Sunday Afternoon, Room S505b

Allen J Sharkins, The Pittsburgh Conference, Presiding

1:30	(270-1)	**Compensating for Noise and Enhancing Signals in Solution-Cathode Glow Discharge Spectrometry** MICHAEL R WEBB, University of North Carolina Wilmington, Allison M King, Todd A Doroski
1:50	(270-2)	**Determination of Metal Concentrations in Nanocatalysts and in Metallo-Enzymes Using Microplasma-on-a-Chip Optical Emission Spectrometry** VASSILI KARANASSIOS, University of Waterloo, O J Nguon, M J Gauthier, D J Lee
2:10	(270-3)	**Trace Metal Analysis in Pharmaceutical Formulations** PHILIP SALMON, Liverpool John Moores University, Philip Riby
2:30	(270-4)	**Online Pre-Reduction of As(V) by Thioglycolic Acid for Inorganic Arsenic Speciation by In-Situ Flow Injection Hydride Generation-Tungsten Coil Electrothermal-Atomic Absorption Spectroscopy** NJAW NJIE, Middle East Technical University, Osman Y Ataman

SUNDAY POSTER SESSION **Session 280**

Sunday posters will be on display from 3:30 PM to 7:30 PM with authors present from 5:30 PM to 7:30 PM. Location of Sunday posters is the Grand Ballroom S100bc.

New Developments in Analytical Instrumentation and Software

Sunday Afternoon, Grand Ballroom S100bc

(280-1 P)	**Accelerated Evaporation Sample Deposition with Concentrated Multiple Reflection ATR Spectroscopy** JOSEPH P LUCANIA, Harrick Scientific Products, Inc., Ali Kocak
(280-2 P)	**A Refined Dual Technique FTIR Liquid Cell for ATR and Transmission Spectroscopic Analyses** JOSEPH P LUCANIA, Harrick Scientific Products, Inc., Ali Kocak
(280-3 P)	**GAED Reveals Differences Between Used and Unused Activated Carbon from Drinking Water Plants** H GEORGE NOWICKI, PACS Inc., Henry Nowicki
(280-4 P)	**Determining the Provenance of Albanian Artifacts Using Solution-Based ICP-MS and Laser-Ablation ICP-MS** TIMOTHY WARD, Millsaps College, Fabio Ntagwabira, Faustin Mwambutsa, Michael Galaty, Jiyan Gu
(280-5 P)	**Analysis of Methylxanthines as Biomarkers in Pottery Sherds to Identify Ancient Practices** TIMOTHY WARD, Millsaps College, Diane Ward, James Klugh, Syed Ali, Laura Kebert, Jiyan Gu

(280-6 P)	**Measuring Heterogeneous Rate Constants and Energy of Activation with Photomicroscopy** WALTER J BOWYER, Hobart and William Smith Colleges, Kathryn E Bezbatchenko, Megan A Musa, Troy J Robinson
(280-7 P)	**Air Pollution Observations in Chicago from 2002-2012** KATRINA BINAKU, Loyola University Chicago, Martina Schmeling
(280-8 P)	**Ion Exclusion Chromatography of Heparin and Other Glycosaminoglycans** NEIL D DANIELSON, Miami University, Fotouh R Mansour
(280-9 P)	**100% Efficient, ESI, Millisecond, Mass Spectrometry Sample Introduction and MALDI Deposition Using the Same Device** DREW SAUTER, nanoLiter LLC
(280-10 P)	**Saliva as a Matrix for Establishing the Exposure of Drugs as Alternative to Plasma Using MEPS as Sampling Technique** MOHAMED ABDEL-REHIM, Stockholm University
(280-11 P)	**Challenging GC-MS Applications Achieved with Cold** EI AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon
(280-12 P)	**Investigation of Chemical Contaminants in Soils Following Superstorm Sandy** AMY C MANDIGO, Marist College, Dana J DiScenza, Neil Fitzgerald, Alison R Keimowitz
(280-13 P)	**Capture and Detection of Lead Using Core-Shell Magnetic Nano-Materials** AMOS MUGWERU, Rowan University, Andrew Shore
(280-14 P)	**Development of Core Shell Particle with Large Pores for Separation of Peptides and Proteins** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tuskamoto
(280-15 P)	**Catalytic Combustion Ionization Technology and the Selective Detection of Alkane and Alkene Constituents of Complex Petroleum Samples** PAUL L PATTERSON, Detector Engineering & Technology
(280-16 P)	**Isolation and Characterization of Gurmarin from the Leaves of the Gymnema Sylvestre** PATRICIA L LANG, Ball State University, Geoff B Hutchinson
(280-17 P)	**The Determination of Acrylamide in Fried Potato Crisps by Solid Phase Extraction** WANG RUYI, Bonna-Agela, Wang Wan
(280-18 P)	**Analysis of Garlic (Allium sativum) and Elephant Garlic (Allium ampeloprasum) Vapors with Solid Phase Microextraction Gas Chromatography-Mass Spectrometry** KRISTEN HARRIS, Tabor College, Norman Schmidt
(280-19 P)	**Gas Chromatography-Mass Spectrometry Determination of the Essential Oil Concentrations in the Leaves and Fruit of Osage Orange (Maclura Pomifera)** NORMAN SCHMIDT, Tabor College, Tyler Dort
(280-20 P)	**Gas Chromatography-Mass Spectrometry Determination of the Essential Oil Concentrations in Cedar Tree Leaves (Juniperus Virginiana) in a Drought Year and a "Normal" Year** NORMAN SCHMIDT, Tabor College, Amy J Maphet
(280-21 P)	**Gas Chromatography-Mass Spectrometry Determination of the Essential Oil Concentrations in Pine Tree Leaves (Pinus Ponderosa)** NORMAN SCHMIDT, Tabor College, Diane Krehbiel
(280-22 P)	**Solid Phase Microextraction Gas Chromatography-Mass Spectrometry Analysis of Onion (Allium Cepa) Vapors to Distinguish Between Onion Cultivars** NORMAN SCHMIDT, Tabor College, Zachary Willems
(280-23 P)	**Comparison of New Core-Shell Particle Technology** MARK WOODRUFF, Fortis Technologies Ltd, Ken Butchart
(280-24 P)	**Selectivity of Core-Shell Particles in HPLC** MARK WOODRUFF, Fortis Technologies Ltd, Ken Butchart
(280-25 P)	**Occurrence of Bisphenol A Analogues in Shrimp, Crab and Lobster Tissues** YUEGANG ZUO, University of Massachusetts Dartmouth, Zhuo Zhu, Joseph Michael, Mohammed Alshanqiti, Sarah Pereira

MONDAY, MARCH 3, 2014
MORNING

AWARDS **Session 290**

Chromatography Forum of the Delaware Valley Dal Nogare Award
arranged by Mary Ellen McNally, EI DuPont de Nemours and Company

Monday Morning, Room S401a

Mary Ellen McNally, EI DuPont de Nemours and Company, Presiding

8:30		**Introductory Remarks - Mary Ellen McNally**
8:35		**Presentation of the 2014 Chromatography Forum of the Delaware Valley Dal Nogare Award to Mary J Wirth, Purdue University, by Mary Ellen McNally, EI DuPont de Nemours and Company**
8:40	(290-1)	**Monoclonal Antibody Separations Using Submicrometer Silica Particles** MARY J WIRTH, Purdue University
9:15	(290-2)	**Packing Capillary LC Columns with Sub-2 Micron Particles** JAMES W JORGENSON, University of North Carolina at Chapel Hill, Justin Godinho, Edward Franklin, James P Grinias
9:50	(290-3)	**Super-Resolution Spectroscopy Reveals Molecular-Scale Detail in Ion-Exchange Protein Separations** CHRISTY LANDES, Rice University
10:25		**Recess**
10:40	(290-4)	**The Changing Relationship Between the Column and the Instrument in Modern HPLC/UHPLC** RONALD E MAJORS, Advanstar/LCGC
11:15	(290-5)	**Fluorescence Imaging of Single-Molecule Retention Trajectories in Reversed-Phase Chromatographic Particles** JOEL M HARRIS, University of Utah, Justin T Cooper, Eric M Peterson

AWARDS **Session 300**

Pittsburgh Conference Achievement Award
arranged by Joseph Grabowski, The Pittsburgh Conference

Monday Morning, Room S401bc

Joseph Grabowski, The Pittsburgh Conference, Presiding

8:30		**Introductory Remarks - Joseph Grabowski**
8:35		**Presentation of the 2014 Pittsburgh Conference Achievement Award to Benjamin A Garcia, University of Pennsylvania School of Medicine, by Heather L Juzwa, Chair, Society for Analytical Chemists of Pittsburgh**
8:40	(300-1)	**In Vivo Histone Post-Translational Modification Dynamics** BENJAMIN A GARCIA, University of Pennsylvania School of Medicine
9:15	(300-2)	**Phosphoproteomics and Cancer** SCOTT A GERBER, Geisel School of Medicine at Dartmouth
9:50	(300-3)	**Characterization of Proteins by Ultraviolet Photodissociation Mass Spectrometry** JENNY BRODBELT, University of Texas at Austin
10:25		**Recess**
10:40	(300-4)	**Biomimetic Reagents Empower Mass Spectrometric Glycan and Glycoprotein Structure Determination** JESSE L BEAUCHAMP, California Institute of Technology
11:15	(300-5)	**Surface Induced Dissociation/Ion Mobility for Characterization of Protein/Protein and Protein/RNS (DNA) Complexes** VICKI H WYSOCKI, Ohio State University

SYMPOSIUM **Session 310**

Accurate Mass Analysis of Environmental Compounds with Both LC and GC/Q-TOF-MS -
arranged by Earl Michael Thurman and Imma Ferrer, University of Colorado

Monday Morning, Room S402a

Earl Michael Thurman, University of Colorado, Presiding

8:30		**Introductory Remarks - Earl Michael Thurman and Imma Ferrer**
8:35	(310-1)	**Overview of LC/MS Techniques and Mass Spectral Fragmentation Applied to Environmental Analysis** **MICHAL HOLČAPEK, University of Pardubice, Robert Jirasko, Miroslav Lisa**
9:10	(310-2)	**Application of TOF Mass Spectrometry and Sample Profiling Techniques to Water Analysis** SYLVAIN MEREL, University of Arizona, Tarun Anumol, Shane Snyder
9:45	(310-3)	**High Resolution Mass Spectrometry (LC/Q-TOF-MS) for the Identification of Contaminants in Water** IMMA FERRER, University of Colorado
10:20		**Recess**
10:35	(310-4)	**Use of Soft Ionization and GC-QTOF/MS for Structure Elucidation of Emerging Contaminants** VIORICA LOPEZ-AVILA, Agilent Technologies, Patrick Roach, Randall Urdahl
11:10	(310-5)	**Accurate Mass Tools to Identify Hydroxy Radical Products of UV Oxidation of Pharmaceuticals** EARL MICHAEL THURMAN, University of Colorado

SYMPOSIUM **Session 320**

Applied Nonlinear Spectroscopy
arranged by Megan C Thielges, Indiana University

Monday Morning, Room S402b

Megan C Thielges, Indiana University, Presiding

8:30		**Introductory Remarks - Megan C Thielges**
8:35	(320-1)	**Liquid Crystal Isotropic Phase Dynamics - 2D IR Vibrational Echo Experiments on Natural Abundance 13CN and Extended Lifetime Probes** MICHAEL D FAYER, Stanford University, Kathleen P Sokolowsky
9:10	(320-2)	**Supercontinuum Multi-Dimensional Spectroscopy** ELAD HAREL, Northwestern University
9:45	(320-3)	**Applications of Single-Beam Nonlinear Spectroscopy Using Shaped Ultra-Broad-Bandwidth Lasers** MARCOS DANTUS, Michigan State University
10:20		**Recess**
10:35	(320-4)	**Two-Dimensional Infrared Spectroscopy of DNA** ANDREI TOKMAKOFF, University of Chicago
11:10	(320-5)	**Characterization of Protein Dynamics and Conformational Heterogeneity with Two-Dimensional Infrared Spectroscopy** MEGAN C THIELGES, Indiana University

SYMPOSIUM **Session 330**

Molecular Analysis of Human Disease
arranged by Michael A Johnson, University of Kansas

Monday Morning, Room S404a

Michael A Johnson, University of Kansas, Presiding

8:30		**Introductory Remarks - Michael A Johnson**
8:35	(330-1)	**Biomarker Identification for the Tracking of Infectious Disease States** KIM D JANDA, The Scripps Research Institute
9:10	(330-2)	**Single Molecule Arrays for Early Disease Detection** DAVID R WALT, Tufts University, Danlu Wu, Stephanie M Schubert, Shazia Baig, Soyoon Hwang, Trinh Dinh
9:45	(330-3)	**Microchip Electrophoresis of Serum N-Glycans for Cancer Profiling** STEPHEN C JACOBSON, Indiana University, Indranil Mitra, Christa M Snyder, William R Alley, Milos V Novotny
10:20		**Recess**
10:35	(330-4)	**Circulating Tumor Cell Sub-Populations: Tools for Quantitative Expression Analysis of Rare Cells** STEVEN A SOPER, University of North Carolina
11:10	(330-5)	**Altered Mechanisms of Dopamine Regulation in Huntington's Disease** MICHAEL A JOHNSON, University of Kansas, Sam Kaplan, Rachel Gehringer, Andrea N Ortiz, Ryan Limbocker

SYMPOSIUM **Session 340**

New Wave of Gas Chromatography
arranged by Milton L Lee, Brigham Young University

Monday Morning, Room S404bc

Milton L Lee, Brigham Young University, Presiding

8:30		**Introductory Remarks - Milton L Lee**
8:35	(340-1)	**Changing Faces of Gas Chromatography** MILTON L LEE, Brigham Young University
9:10	(340-2)	**Resistively Heated Gas Chromatography** STANLEY D STEARNS, Valco Instruments, Huamin Cai
9:45	(340-3)	**Advances in Instrumentation and Data Analysis Methods to Improve Peak Capacity in GC – TOFMS and GC x GC – TOFMS** ROBERT E SYNOVEC, University of Washington
10:20		**Recess**
10:35	(340-4)	**A Microfabricated Comprehensive Two-Dimensional Gas Chromatograph (μGC x μGC)** EDWARD T ZELLERS, University of Michigan
11:10	(340-5)	**Properties of Thermal Gradient GC Separations** H DENNIS TOLLEY, Brigham Young University, Samuel E Tolley, Anzi Wang, Matthew C Asplund, Milton L Lee

SYMPOSIUM **Session 350**

SAS: Mass Cytometry: An In-Depth View of Cell Heterogeneity and Signaling
arranged by Scott D Tanner, DVS Sciences Inc

Monday Morning, Room S404d

Scott Tanner, DVS Sciences Inc, Presiding

8:30		**Introductory Remarks - Scott D Tanner**
8:35	(350-1)	**Expanding the Capabilities of Mass Cytometry** SCOTT D TANNER, DVS Sciences Inc., Alexander Loboda, Bandura R Dmitry, Vladimir I Baranov, Olga I Ornatsky
9:10	(350-2)	**Mass Cytometry Reveals Cellular Heterogeneity Within and Across Autoimmune Diseases** ALICE LONG, Benaroya Research Institute, Ian Frank, Jane Buckner
9:45	(350-3)	**Revealing the Cellular Organization of Human Cancers with Mass Cytometry** ERIN F SIMONDS, University of California, San Francisco
10:20		**Recess**
10:35	(350-4)	**Single Cell Systems Biology of Signaling Networks in Human Disease Using Mass Cytometry** JONATHAN M IRISH, Vanderbilt University
11:10	(350-5)	**Highly Multiplexed Tissue Imaging of Tumors and their Microenvironment by Mass Cytometry** CHARLOTTE GIESEN, University of Zurich, Hao Wang, Zsuzsanna Varga, Bodo Hattendorf, Peter Wild, Detlef Günther, Bernd Bodenmiller

SYMPOSIUM **Session 360**

SEAC: Electroanalysis in Unusual and Extreme Environments
arranged by Shelley Minteer, University of Utah

Monday Morning, Room S405a

Shelley Minteer, University of Utah, Presiding

8:30		**Introductory Remarks - Shelley Minteer**
8:35	(360-1)	**Microelectrode Detection of Cholesterol Efflux from the Human Buccel Mucosa** JIM BURGESS, Case Western Reserve University, Xiaochun Yu
9:10	(360-2)	**In-Situ Electrochemical Analysis of Martian Soil: Implications for Mars and Earth** SAM KOUNAVES, Tufts University
9:45	(360-3)	**Bioelectrocatalysis for Electroanalysis in Aqueous Waste Streams** SHELLEY MINTEER, University of Utah
10:20		Recess
10:35	(360-4)	**Fast-Metal Voltammetry for Real-Time Environmental Trace Metal Analysis** PARASTOO HASHEMI, Wayne State University, Shawn McElmurry, Yuanyuan Yang, Pavithra Pathirathna
11:10	(360-5)	**Electrochemical Readout of Cellular Physiometry for Organs-on-a-Chip** DAVID E CLIFFEL, Vanderbilt University, Jennifer R McKenzie, Danielle W Kimmel, Andrew Cognata

SYMPOSIUM **Session 370**

Surface-Enhanced Infrared Absorption: Mechanism and Applications

arranged by Peter R Griffiths, Griffiths Consulting LLC

Monday Morning, Room S405b

Peter R Griffiths, Griffiths Consulting LLC, Presiding

8:30		**Introductory Remarks - Peter R Griffiths**
8:35	(370-1)	**Surface-Enhanced Infrared Absorption: What Causes Band Distortion?** PETER R GRIFFITHS, Griffiths Consulting LLC
9:10	(370-2)	**Surface-Enhanced Infrared Absorption (SEIRA) Using Individual Gold Nanoantennas** LISA V BROWN, Rice University, Ke Zhao, Xiao Yang, Nicholas King, Heidar Sobhani, Peter Nordlander, Naomi J Halas
9:45	(370-3)	**Surface-Enhanced Infrared Absorption Spectroscopy to Probe Biomembranes** JOACHIM HEBERLE, Freie Universitaet Berlin, Kenichi Ataka
10:20		**Recess**
10:35	(370-4)	**Application of SEIRAS to Mechanistic Studies of Electrocatalytic Reactions Related to Fuel Cells** MASATOSHI OSAWA, Hokkaido University
11:10	(370-5)	**Infrared Chemical Sensors Based on Functionalized Nanostructures** JYISY YANG, National Chung Hsing University

ORGANIZED CONTRIBUTED SESSIONS **Session 380**

Ionophore-Based Chemical Sensors I

arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

Monday Morning, Room S503a

Philippe Buhlmann, University of Minnesota, Presiding

8:30	(380-1)	**New Concepts for Ion Sensing with Ionophores** ERIC BAKKER, University of Geneva, Xiaojiang Xie, Guenter Mistlberger
8:50	(380-2)	**Novel Synthetic Receptors for Selective Protein Recognition** RÓBERT E GYURCSÁNYI, Budapest University of Technology and Economics, Júlia Bognár, Gergely Lautner, Júlia Sz cs, Tamás Mészáros, Viola Horváth, Gyula Jágerszki
9:10	(380-3)	**Calibration-Free Coulometric Analysis of Nitrate in Natural Waters Using Tubular Membrane Ion-Selective Electrodes** ROLAND DE MARCO, University of the Sunshine Coast, Manzar Sohail, Eric Bakker
9:30	(380-4)	**Detection of Biomolecular Recognition Using Bio-Transistors** YUJI MIYAHARA, Tokyo Medical and Dental University, Akira Matsumoto, Tatsuro Goda, Yasuhiro Maeda, Miyuki Tabata, Mai Sanjoh
9:50		**Recess**
10:05	(380-5)	**Simple Voltammetric Method for the Determination of the Partition and Diffusion Coefficients in Solvent Polymeric Membranes** ERNO LINDNER, The University of Memphis, James Sheppard, Francine Kivlehan, Bradford Pendley, Edward Chaum
10:25	(380-6)	**Differential Linear Scan Microvoltammetry for Measurements in Biological Environments** MIKLOS GRATZL, Case Western Reserve University, Disha Sheth
10:45	(380-7)	**Use of Electrically Neutral Axial Ligands to Control the Selectivity of Ion-Selective Electrode Membranes Doped with Metalloporphyrin Ionophores** PHILIPPE BUHLMANN, University of Minnesota, Koichi Nishimura, Xu Zou
11:05	(380-8)	**New Sulfate Ionophores Based on Tris-Squaramide Receptors** YU QIN, Nanjing University, Yueling Liu

ORGANIZED CONTRIBUTED SESSIONS **Session 390**

PAI-NET: Ultrasensitive Analytical Technologies for Biology and Chemistry

arranged by Kazuma Mawatari, The University of Tokyo and Kenji Kojima, PAI-NET

Monday Morning, Room S502b

Kazuma Mawatari, The University of Tokyo, Presiding

8:30	(390-1)	**Nanowire Devices for Bimolecular Analysis** TAKAO YASUI, Nagoya University, Takeshi Yanagida, Noritada Kaji, Tomoji Kawai, Yoshinobu Baba
8:50	(390-2)	**Microfluidic Devices for Protein Crystal Structure Analysis** MASAYA MIYAZAKI, AIST
9:10	(390-3)	**Development of Fully Automated Measuring System of Inter-Molecular Dynamic Interaction for Medical Diagnosis and Food Inspection** HIDENORI WATANABE, USHIO INC., Kinichi Morita, Satoshi Matsuzawa, Masaki Miura, Takanori Jogi, Shigeki Matsumoto, Tsukasa Matsuo, Tetsuya Kitagawa
9:30	(390-4)	**Fabrication of Functional Nanoparticles Using Microfluidic Devices** MANABU TOKESHI, Hokkaido University
9:50		**Recess**
10:05	(390-5)	**Development of Next Generation Amino Acid Analyzer Using LC/MS with a Derivatization Reagent** HIROO YOSHIDA, Ajinomoto Co., Inc.
10:25	(390-6)	**Watching and Manipulating Biomolecules One at a Time** RYOTA LINO, The University of Tokyo
10:45	(390-7)	**Study on Nanofluidic-Based Separation System for Actinides and Lanthanides** TAKEHIKO TSUKAHARA, Tokyo Institute of Technology
11:05	(390-8)	**Ultrasensitive Immunoassay Methods Using Nanofluidic Technology** KAZUMA MAWATARI, The University of Tokyo

ORGANIZED CONTRIBUTED SESSIONS **Session 400**

Spectroscopy for Everyone – Smaller, Cheaper, in the Field

arranged by Richard A Crocombe, Thermo Fisher Scientific and Mark A Druy, Physical Sciences, Inc

Monday Morning, Room S503b

Richard A Crocombe, Thermo Fisher Scientific, Presiding

8:30	(400-1)	**Future Spectrometer Technology Trends** JASON M EICHENHOLZ, Open Photonics Inc.
8:50	(400-2)	**Bringing High Field NMR Methods onto the Lab Bench with a Compact NMR Spectrometer** ANDREW COY, Magritek
9:10	(400-3)	**Open Source Collaboration and a "Big Data" Approach To Household Spectral Analysis** JEFFREY WARREN, Public Lab
9:30	(400-4)	**Handheld NIR Analyzers for "In-Field" Analysis** IGOR NAZAROV, Thermo Fisher Scientific
9:50		**Recess**
10:05	(400-5)	**MEMS Based Mass Spectrometer and Applications** STEVEN WRIGHT, Microsaic Systems, Peter Edwards
10:25	(400-6)	**Broadband Static Fiber Interferometry and FT-Spectrometry – More Information with More Convenience at More Locations** DOMINIC MURPHY, Pie Photonics
10:45	(400-7)	**A Micro-GC Based Chemical Analysis System** PATRICK R LEWIS, Defiant Technologies, Douglas Adkins
11:05	(400-8)	**Progress Toward Chip-Scale Integrated-Optic TDLAS Gas Sensors** MICHAEL FRISH, Physical Sciences Inc., Matthew C Laderer

ORAL SESSIONS **Session 410**

Air Sampling for Environmental Applications (Half Session)

Monday Morning, Room S501a

David Benanou, Veolia Environment Research and Innovation, Presiding

8:30	(410-1)	**Passive Sampling Approaches for Environmental Pollution Monitoring** PAULINA BIERNACKA, University of Waterloo, Tadeusz Gorecki, Todd McAlary, Groenevelt Hester
8:50	(410-2)	**Field Portable High Flow Air Sampling System for GC-MS** XIAOFENG XIE, Brigham Young University, Daniel H Maynes, H Dennis Tolley, Milton L Lee
9:10	(410-3)	**Time-Weighted Average Sampling of Volatile Airborne Organic Compounds by Needle Trap Devices (NTD)** SABA ASL HARIRI, University of Waterloo, Janusz Pawliszyn
9:30	(410-4)	**Pollutant Source Attribution Using Wireless Air Quality Networks** JOHN R SAFFELL, Alphasense Ltd, Roderic L Jones, Paul H Kaye

ORAL SESSIONS **Session 420**

Bioanalytical Electrochemistry: Assorted Applications and Methods

Monday Morning, Room S501bc

Stephen Gozo, Celgene Corporation, Presiding

8:30	(420-1)	**High Throughput Assay of Secretory Granule Catecholamine Content Based on Electrochemical Cytometry** NICHOLAS D LAUDE, University of Arizona, Richard F Vreeland, Michael L Heien
8:50	(420-2)	**Design of New Method for Study of Embryonic Stem Cells** LAUREN M BROWNING, Old Dominion University, Feng Ding, Tao Huang, X Nancy Xu
9:10	(420-3)	**Amperometric Nitric Oxide Sensors with Enhanced Selectivity Over Carbon Monoxide for Potential Monitoring of NO in Exhaled Nasal Breath** ZHENG ZHENG, University of Michigan, Gary C Jensen, Mark E Meyerhoff
9:30	(420-4)	**Carbon Nanotube Fibers for Neurotransmitter Detection** ALEXANDER G ZESTOS, University of Virginia, B Jill Venton
9:50		**Recess**
10:05	(420-5)	**Voltammetric and Computational Evidence for Two Neurochemical Serotonin Uptake Mechanisms In Vivo** KEVIN M WOOD, Wayne State University, Janet Best, Reed C Michael, Parastoo Hashemi
10:25	(420-6)	**The Combination of Resistance and Spectroscopic Measurements for Analytical Measurements with Metallic Nanostructures** FRANCIS P ZAMBORINI, University of Louisville, Nidhi Shah, Aiqin Fang
10:45	(420-7)	**High-Resolution Scanning Electrochemical Microscopy (SECM) Studies of Dissimilarity Metal Reduction Pathways of Shewanella Oneidensis** DAVID CRISOSTOMO, Vanderbilt University, Gongping Chen, Evan A Gizzie, Sean J Elliott, David E Cliffel
11:05	(420-8)	**A Label-Free Impedimetric Immunosensor for Detection of 1-Aminohydantoin Residue in Food Samples Based on Sol-Gel Embedding Antibody** YANG GONG-JUN, China Pharmaceutical University

ORAL SESSIONS **Session 430**

Capillary and Micro-Free-Flow Electrophoresis

Monday Morning, Room S501d

Eugene Barry, University of Massachusetts Lowell, Presiding

8:30	(430-1)	**Nano-Liquid Chromatography Coupled with Micro Free-Flow Electrophoresis for Multi-Dimensional Separations of Peptides** MATTHEW L GEIGER, University of Minnesota
8:50	(430-2)	**Development of a Multi-Dimensional Liquid Chromatography-Capillary Electrophoresis-Electrospray Ionization Separation Platform** WILL BLACK, University of North Carolina at Chapel Hill, J S Mellors, J Michael Ramsey
9:10	(430-3)	**Fungal Biomarker Identification with Phospholipid Nanogel in Microfluidic Devices** TYLER DAVIS, West Virginia University, Lisa A Holland, Brandon C Durney
9:30	(430-4)	**Multichannel Chip for High Throughput Capillary Isoelectric Focusing Analysis with Concentration Gradient Detection Based on Schlieren Optics** ATEFEH SADAT ZARABADI, University of Waterloo, Janusz Pawliszyn
9:50		**Recess**
10:05	(430-5)	**CE-MS Determination of Morphine and Its Isobaric Glucuronide Metabolites** THERESA A SWANSON, Wake Forest University, Christa L Colyer, Gregory McIntire, Erin Strickland, Jennifer Hitchcock
10:25	(430-6)	**Extraction of Phenolic Compounds Using a Surfactant-Based Ionic Liquid** PAUL MAGUT, Louisiana State University, Fangzhi Huang, Paula Berton, Chengfei Lu, Noureen Siraj, Chun Wang, Isiah M Warner
10:45	(430-7)	**Coupling Micro Free-Flow Electrophoresis with Desorption Electrospray Ionization Mass Spectrometry (DESI-MS) for Proteomic Analysis** SARAH K ANCIAUX, University of Minnesota, Michael T Bowser

ORAL SESSIONS **Session 440**

Environmental: Analysis of Pollutant (Half Session)

Monday Morning, Room S501a

David Benanou, Veolia Environment Research and Innovation, Presiding

10:05	(440-1)	**A Multilayer Paper Analytical Device for Measuring Toxic Metals in Air Pollution** DAVID M CATE, Colorado State University, John Volckens, Charles S Henry
10:25	(440-2)	**Photolytic Conversion for Ambient NO Measurements** THOMAS A MCKARNS, Eco Physics, Inc., Matthias Kutter
10:45	(440-3)	**Composite Adsorption** SERPIL EDEBALI, Selcuk University, Erol Pehlivan
11:05	(440-4)	**On-Site and Sub-ppb VOC Analysis in a Semiconductor Clean-Room Using µGC** CHIA-JUNG LU, National Taiwan Normal University, Rih-Sheng Jian, Lung-Yu Sung, Chih-Chia Wang, Chun-Yen Kuo, Wei-Cheng Tian

ORAL SESSIONS **Session 450**

GC/MS Analysis of Fuels

Monday Morning, Room S502a

Timothy A Policke, BWXs Technologies, Presiding

8:30	(450-1)	**Comparison of Pyrolysis Products of Prairie Cordgrass at Different Temperatures By Accelerated Solvent Extraction and GC-MS** ERIC A BOAKYE, South Dakota State University, Douglas Raynie
8:50	(450-2)	**Liquid Extraction and Thermodesorption to Quantify Volatile Organic Compounds by Gas Chromatography Associated to a Mass Spectrometer – GC-MS** ONY RABETSIMAMANGA, GDF SUEZ - CRIGEN, Jean-Philippe Leininger
9:10	(450-3)	**Measurement of Volatile Siloxanes, Toxic Organic and Sulfur Compounds in Biomethane by GCMS and Pulsed Flame Photometric Detection** EDWARD BRAMSTON-COOK, Lotus Consulting, Randall Bramston-Cook
9:30	(450-4)	**Calibration Standards for Measurement of Volatile Siloxanes and Toxic Organics in Biomethane Using Permeation Tubes** RANDALL BRAMSTON-COOK, Lotus Consulting, Edward Bramston-Cook, Stanley D Stearns, Santos Puente
9:50		**Recess**
10:05	(450-5)	**Withdrawn**
10:25	(450-6)	**Characterization and Quantification of Oxidation Byproducts including Copper Species in Natural Ester Based Dielectric Fluids** RADHESHYAM PANTA, Missouri University of Science and Technology, Racha Seemamahannop, Shubhender Kapila
10:45	(450-7)	**PLOT Column Technology Development Enhances Operation with Integrated Particle Trapping** GARY LEE, Agilent Technologies, Yun Zou, Kenneth G Lynam
11:05	(450-8)	**New Developments on Column Temperature Programming in Portable Micro Gas Chromatography with Thermal Conductivity Detector - Ultra-Fast, High Quality "Lab" Results Now Also Available for "Out-Of-Lab" Measurements** COEN DUVEKOT, Agilent Technologies, Remko van Loon, Thomas Szakas

ORAL SESSIONS **Session 460**

LC: Column Technology

Monday Morning, Room S504a

Olujide T Akinbo, Butler University, Presiding

8:30	(460-1)	**Characterization and Optimization of Organic Monolith Morphology for Improved Chromatographic Performance** PANKAJ AGGARWAL, Brigham Young University, H Dennis Tolley, John S Lawson, Dean R Wheeler, Brian Mazzeo, Milton L Lee
8:50	(460-2)	**Sub-2 µm Macroporous Silica Particles for Capillary** UHPLC JAMES P GRINIAS, University of North Carolina at Chapel Hill, Justin Godinho, Amanda K P Mann, Benjamin F Mann, Sara E Skrabalak, Milos V Novotny, James W Jorgenson
9:10	(460-3)	**Preparation of Organo-Silica Hybrid Monolithic Columns and Characterization of Their Performance in Capillary Liquid Chromatography** ZUZANA ZAJICKOVA, Barry University, Denae Britsch, Deepa Gharbharan, Anna-Marie Weed, Frantisek Svec
9:30	(460-4)	**Nanodiamonds/Silica Microsphere Composites as Stationary Phases for High-Performance Liquid Chromatography** ZUQIN XUE, University at Buffalo - SUNY, Luis A Colon
9:50		**Recess**

10:05	(460-5)	**Preparation and Characterization of a Lauryl Acrylate Porous Polymer Monolithic Stationary Phase via HPLC** CHARLISA R DANIELS, Trinity University, Nicholas J Kuklinski, Michelle M Bushey
10:25	(460-6)	**Analyte Diffusion Behavior on a Lauryl Acrylate Porous Polymer Monolith Stationary Phase** KELLY A HEWES, Trinity University, Xuanli Deng, Brady W Iba, Rohit Sampat, Charlisa R Daniels, Michelle M Bushey
10:45	(460-7)	**Development of a C60-Fullerene Bonded Open-Tubular Capillary Using a Photo/thermal Active Agent for Liquid Chromatographic Separations** TAKUYA KUBO, Kyoto University, Murakami Yoshiki, Koji Otsuka
11:05	(460-8)	**Synthesis and Characterization of 1.1 Micron Superficially Porous Particles for Biological Separations** JAMES W TREADWAY, University of North Carolina at Chapel Hill, James W Jorgenson

ORAL SESSIONS **Session 470**

LC: Pharmaceutical Analysis

Monday Morning, Room S504bc

Dwight Stoll, Gustavus Adolphus College, Presiding

8:30	(470-1)	**Reverse Phase Chromatography of Proteins Using Submicron Silica Particles in Stainless Steel Columns** OYELEYE A ALABI, Purdue University, Mary J Wirth
8:50	(470-2)	**Super/Subcritical Fluid Chromatography Chiral Separations with Cyclofructan Based Stationary Phases** ZACHARY S BREITBACH, The University of Texas at Arlington, Jonathan Smuts, Daniel W Armstrong
9:10	(470-3)	**Size Exclusion Chromatography of Polysaccharides with Reverse Phase Liquid Chromatography** YAN HE, Pfizer, Michael D Jones
9:30	(470-4)	**RPLC of Small Molecules Using Sub-0.5um Particles** NATALYA KHANINA, Purdue University, Mary J Wirth
9:50		**Recess**
10:05	(470-5)	**UHPLC Analysis of Therapeutic Protein Charge Heterogeneity by Ion Exchange Chromatography Using Sub-2 Micrometer Non-Porous Particles** XIANG CAO, Purdue University, Robert Birdsall, Zhaorui Zhang
10:25	(470-6)	**1.3 µm Core-Shell Particles for Fast, Ultra-High Resolution Separations** A CARL SANCHEZ, Phenomenex, Mike Chitty, Tivadar Farkas
10:45	(470-7)	**Characterization of Fullerene-Modified Silica as a Complement to Existing Alkyl Bonded and Graphite-Like Phases for Liquid Chromatography** DWIGHT STOLL, Gustavus Adolphus College, Tuan Tran, John Danforth, Paul Young, Ian Gibbs-Hall, Jon Thompson

ORAL SESSIONS **Session 480**

Nanotechnology: Sensors and Electrochemistry

Monday Morning, Room S504d

David Pensenstadler, The Pittsburgh Conference, Presiding

8:30	(480-1)	**Effect of Synthesis Method and Electrode Material on the Oxidation Potential of Metal Nanoparticles** RAFAEL MASITAS, University of Louisville, Irina Khachian, Bryan Bill, Francis P Zamborini
8:50	(480-2)	**Investigation of Varying Modes and Degrees of Nanoconfinement Studied by Fluorescence Correlation Spectroscopy** DANE A GRISMER, University of Notre Dame, Sneha Polisetti, Lawrence Zaino, Paul W Bohn
9:10	(480-3)	**Fluorescence Correlation Spectroscopy in Nanofluidic Channels: Effects of Confinement and Macromolecular Crowding on Molecular Transport** SNEHA POLISETTI, University of Notre Dame, Dane A Grismer, Paul W Bohn
9:30	(480-4)	**Hybrid Nanostructured Carbon - Metal Oxide Supports for Electrocatalytic Oxidation of Fuels** IWONA A RUTKOWSKA, University of Warsaw, Pawel J Kulesza
9:50		**Recess**
10:05	(480-5)	**Single-Nanoparticle Electrocatalysis on Nanoscale Electrodes** STEPHEN J PERCIVAL, University of Washington, Noah E Vartanian, Bo Zhang
10:25	(480-6)	**Electrochemical Studies of Catalyst Free Carbon Nanotube Electrodes and Its Potential Applications in Eu3+ and Dopamine Detections** TINGTING WANG, University of Cincinnati, Bill L Riehl, Jaime Correa, William R Heineman
10:45	(480-7)	**Electron Transfer in < 2 nm Au Nanoclusters** TESSA M CARDUCCI, University of North Carolina at Chapel Hill

ORAL SESSIONS **Session 490**

Pharmaceutical: GC, LC/MS, Raman Spectrometry, Capillary Electrophoresis and Separation Sciences

Monday Morning, Room S505a

Emil Ciurczak, Doramaxx Consulting, Presiding

8:30	(490-1)	**FID Method for the Control of the GTI, 4-chlorobutanol - Overcoming High Accuracy Bias in a Drug Substance and Dealing with Difficult Matrices in the Drug Products** MOHAN KANTHASAMY, Bristol-Myers Squibb, John Castoro, Emma Quirk
8:50	(490-2)	**Electrochemiluminescent Microchip and LC-MS/MS for Organ-Specific Reactive Metabolite Profiling** DHANUKA P WASALATHANTHRI, University of Connecticut, Dandan Li, Zhifang Zheng, Dharamainder Choudhary, Ingela Jansson, John B Schenkman, James F Rusling
9:10	(490-3)	**Excipient Compatibility and Degradation Studies of a Small Molecule Pharmaceutical Compound by HPLC and Mass Spectrometry** JANE LI, Genentech, Christine Gu, Hong Lin, Stefanie Gee, Priscilla Mantik, Pete Yehl, Nik Chetwyn
9:30	(490-4)	**The New Reality Show - Can HPLC Keep Up With Fast LCMS?** ROBERT J CLASSON, Shimadzu Scientific Instruments, Jonathan Edwardsen, Rachel Lieberman, Christopher Gilles, William Hedgepeth
9:50		**Recess**
10:05	(490-5)	**Transmission Raman Spectroscopy – A Practical Alternative Method to Content Uniformity by HPLC** DARREN ANDREWS, Cobalt Light Systems, Andrew Owen, Matthew Bloomfield, Pavel Matousek
10:25	(490-6)	**Analysis of Heparin Impurities Using Capillary Electrophoresis** CHRISTA A CURRIE, College of Mount St Joseph
10:45	(490-7)	**Investigations on Prep Supercritical Fluid Chromatography Concentrating on Overall System Performance and Its Correlation to CO2 Recycling Operation and Efficiency** JOHN WHELAN, Waters Corporation, John Baugher
11:05	(490-8)	**Raw Materials Identification of Incoming Pharmaceutical Goods through Unopened Non-Transparent Containers** DARREN ANDREWS, Cobalt Light Systems, Andrew Owen, Matthew Bloomfield, Pavel Matousek

ORAL SESSIONS **Session 500**

Sampling and Sample Preparation for the Food Sciences

Monday Morning, Room S505b

Scott Hazard, OI Analytical, Presiding

8:30	(500-1)	**Comparison of Green Solvents During Chemical Extraction by Diffusion Studies** SHANMUGAPRIYA DHARMARAJAN, South Dakota State University
8:50	(500-2)	**Extraction of Caffeine from Tea and Water Using QuEChERS with Gas Chromatography/Mass Spectrometry Detection** MICHELLE L SCHMIDT, Seton Hall University, Nicholas H Snow
9:10	(500-3)	**An Automated Technique for the Solid Phase Extraction and Analysis of Multiple Organochlorine Pesticide Residues from Wine** JIM C FENSTER, Horizon Technology, Marc Hamel, Vinson Leung, Brian LaBrecque
9:30	(500-4)	**Headspace Versus Direct Immersion Solid Phase Microextraction (SPME): Investigation of Inter-Analyte Displacement Phenomena and Consideration for Food Matrices** EMANUELA GIONFRIDDO, University of Waterloo, Érica A Souza Silva, Janusz Pawliszyn
9:50		**Recess**
10:05	(500-5)	**Investigating Selective Displacement Phenomena in SPME Solid Coatings** EMANUELA GIONFRIDDO, University of Waterloo, Érica A Souza Silva, Janusz Pawliszyn
10:25	(500-6)	**Analytical Pyrolysis: Optimizing Pyrolysis Conditions** HELENA JOENSSON, Pyrolab
10:45	(500-7)	**Benefits of Dynamic Headspace Enrichment for Enhanced Volatile Fraction Characterization of White Wine by GCxGC-TOFMS** DANIELA CAVAGNINO, DANI Instruments SpA, Alessandra Mantegazza, Antonella Siviero, Georg Weingart, Fulvio Mattivi
11:05	(500-8)	**Advanced System for the Analysis of Bioactive Compounds in Natural Products: Integrating Sample Preparation and Chromatography** MAURICIO A ROSTAGNO, University of Campinas, M Angela A Meireles

POSTER SESSION **Session 510**

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Electrochemistry: Methods and Applications

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(510-1 P) **The Use of Microelectrode Voltammetry to Determine n-octanol / Water Distribution Ratio of Electroactive Species** TIAGO L FERREIRA, Universidade Federal de São Paulo, Jéssica S Silva, Gabriel G Faura

(510-2 P) **In Vivo Voltammetric Monitoring Dopamine Transmission in the Rat Brain Evoked by Electrical Stimulation of Noradrenergic Neurons** JINWOO PARK, University at Buffalo - SUNY

(510-3 P) **Organic Semiconductors for Rapid Electrochemical Measurement of Neurotransmission** ADAM R MEIER, University of Arizona, Richard F Vreeland, Michael L Heien

(510-4 P) **Withdrawn**

(510-5 P) **Surface-Enhanced Light Absorption and Photoelectrochemistry Using Metallic Nanostructures** JUE WANG, The University of Alabama, Shanlin Pan

(510-6 P) **Electrochemical Fabrication of SERS-Active Metal Nanostructures for In-Situ Examination of Electrochemical Reactions** JONGWON KIM, Chungbuk National University, Suhee Choi, Miri Ahn, Jeong Hwakyeung

(510-7 P) **Direct Electrochemistry of Horseradish Peroxidase Based on Hierarchical Porous Calcium Phosphate Microspheres** QIN XU, Yangzhou University, Longyun Jin, Xiao-Ya Hu

(510-8 P) **In-Situ Imaging of Ion Battery Reactive Heterogeneity by Scanning Electrochemical Microscopy with an Amperometric Ion-Responsive Electrode** ZACHARY J BARTON, University of Illinois at Urbana-Champaign, Joaquin Rodriguez-Lopez

(510-9 P) **Atmospheric Corrosion Study of Metals in an Industrial Environment of Ahmedabad** SUNILKUMAR PUNAMBHAI PAREKH, CU Shah Science College

(510-10 P) **Hydrogen Peroxide Detection by Ion Chromatography and Electrochemical Detection** SHEETAL BHARDWAJ, Thermo Fisher Scientific, Rong Lin, Kannan Srinivasan, Christopher Pohl

(510-11 P) **Detection of Thiols by o-quinone Nanocomposite Modified Electrodes** AMILA M DEVASURENDRA, University of Toledo, Tianxia Zhu, Jon Kirchhoff

(510-12 P) **Electrochemical Detection and Quantification of Quercetin in Some Tropical Fruits and Vegetables** WESLEY O OKIEI, University of Lagos, Modupe Mabel Ogunlesi, Boluwatife Awonaike

(510-13 P) **Optimizing the Electrochemical Proximity Assay for Effective Multiplexed Quantitation of Proteins** SUBRAMANIAM SOMASUNDARAM, Auburn University, Li Zhang, Xiangpeng Li, Curtis Shannon, Christopher J Easley

(510-14 P) **Selective Detection of Pyocyanin in Biological Samples Using Disposable Electrochemical Sensors** THADDAEUS A WEBSTER, Northeastern University, Edgar D Goluch

(510-15 P) **Cystine, an Essential Determinant of Protein Tertiary Structure, is Also a Target for Electrochemical Manipulation** IAN N ACWORTH, Thermo Fisher Scientific, Qi Zhang, Bruce Bailey

(510-16 P) **Pyranose 2-Oxidase Mutants with Decreased Hydrogen Peroxide Production for Application in Enzymatic Biofuel Cells** DAGMAR BRUGGER, University of Natural Resources and Life Sciences, Vienna, Clemens K Peterbauer, Dietmar Haltrich

(510-17 P) **Determination of Stannous Ion in MDP Radiopharmaceutical Cold Kits by Differential Pulse Polarography (DPP) Using Quality by Design (QbD) Methodology** ROBERT KINDYA, Pharmalucence, Inc.

(510-18 P) **Enhancement of Surface Properties of Carbon Electrode via the Modification with Schiff Bases** ZIYA ERDEM KOC, Selcuk University, Yasemin Oztekin

(510-19 P) **Conductivity Measurements Can Estimate Osmolality of Solutions During Magnesium Corrosion** KOLADE O OJO, University of Cincinnati, Julia Kuhlmann, Sarah K Pixley, William R Heineman

(510-20 P) **Non-Enzymatic Glucose Sensor Based on 1-10 Phenantroline 5,6 Dione Modified Glassy Carbon Electrode** YASEMIN OZTEKIN, Selcuk University, Mutahire Tok, Zafer Yazicigil, Esra Bilici

(510-21 P) **Investigation of Enzymatically Synthesized Conducting Polymer Nanoparticles** ARUNAS RAMANAVICIUS, Vilnius University, Asta Kausaite-Minkstimiene , Lina Mikoliunaite, Yasemin Oztekin, Viktor Mazeiko, Anton Popov, Almira Ramanaviciene

(510-22 P) **Anodic Stripping Voltammetry of Cadmium After a Ligandless Cloud Point Extraction** CORY ALLEN RUSINEK, University of Cincinnati, William R Heineman, Ian Papautsky, Adam Bange

(510-23 P) **Development of a Reductometric Assay for Sodium Oxalate** THOMAS VETTER, NIST, Kenneth Pratt

(510-24 P) **Monitoring Enzymatic Reactions in Flow Injection System Using Pulsed Chronopotentiometric Polyion Sensitive Membrane Electrodes** JOANNA ZAJDA, Warsaw University of Technology, Andrea K Bell-Vlasov, El bieta J Malinowska, Mark E Meyerhoff

POSTER SESSION **Session 520**

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Fluorescence/Luminescence/UV-VIS Bio and Nano

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(520-1 P) **Laser Excited Time-Resolved Shpol'skii Spectroscopy for the Analysis of High-molecular Weight Polycyclic Aromatic Hydrocarbon Isomers** BASSAM ALFARHANI, University of Central Florida, Walter B Wilson, Cristina B Bisson, Andres D Campiglia

(520-2 P) **A Turn-On Fluorescent Genosensor for the Detection of MicroRNA in Prostate Cancer Patient** AMILY FANG-JU JOU , National Taiwan University, Ja-an Annie Ho

(520-3 P) **A Preliminary Investigation of the Effects of Metal Ions on the Fluorescence of Known Iron (II) Chelators: Analytical Utility for Determination of Iron** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Brittany E Playso

(520-4 P) **Construction of Novel Luminescence Pairs Based on the Basic Peptides of HPV Capsid Proteins/Polyoxometalate and the In-Vitro Receptor Screening for Virus Attachment on Cell Surface** YUQING WU, Jilin University

(520-5 P) **Cetyltrimetrylammonium Bromide/ Imidazolium Bromide Tetradecane Synergistic Sensitized Spectrofluorimetry for Speciation of Cr (VI)/Cr (III)** ZHU XIASHI, Yangzhou University, Wang Wenjun

(520-6 P) **Analytical Pipetting of Serum** JOHN THOMAS BRADSHAW, Artel, Leah Flumerfelt, Richard H Curtis, Rachel Parshley

(520-7 P) **The Development of Polymerization and Fluorescence Spectroscopic Methods for Ratiometric Fluorescent Ion Indicators** DEANNA M SILVA, University of New Hampshire, John Csoros, Justin Massing, Roy Planalp, Shawn Burdette, W Rudolf Seitz

(520-8 P) **Millions of Shallow CMOS Pixels and the Art of Spectroscopy** ALEXANDER SCHEELINE, SpectroClick, Thu A Bui

(520-9 P) **A Study of Absolute Quantum Efficiency Measurement System** OSAWA YOSHIHIRO, Otsuka Electronics Co., Ltd

(520-10 P) **Solvent-Solute Interactions for P-Phenylenediamine and Its Methylated Derivative** MUHAMMAD ZAHID, University of Agriculture Faisalabad, Asim Mansha, Guenter Grampp, Patrice Jacques, Sadia Asim, Haq N Bhatti

(520-11 P) **Low-Temperature Synchronous Fluorescence Spectroscopy with Fiber Optic Probes for the Analysis of High Molecular Weight Polycyclic Aromatic Hydrocarbons** ANTHONY F MOORE, University of Central Florida, Fernando Barbosa, Andres D Campiglia

(520-12 P) **Rapid Testing of Bacterial Endotoxins in Water Using Bioluminescence** SATOSHI ARAKAWA, DKK TOA Corporation, Satoshi Yawata, Kenichi Noda, Akio Kuroda, Hiromitsu Hachiya

(520-13 P) **Construction of Transcription-Type Imprinted Polymers Using Immobilized Proteins for Selective Fluorescence Detection of Target Proteins** TAKAHIRO KUWATA, Kobe University, Satoshi Yoshizawa, Yukiya Kitayama, Tooru Ooya, Toshifumi Takeuchi

(520-14 P) **Fluorimetric Nanosensors for Ion Detection** KATARZYNA KŁUCI SKA, Warsaw University, Anna Kisiel, Krzysztof Maksymiuk, Agata Michalska

(520-15 P) **Self-Assembled Synthesis of Water-Soluble Anthracenophane and Its Functionality** RYOHEI MIYAKE, Kobe University, Yukiya Kitayama, Tooru Ooya, Toshifumi Takeuchi

(520-16 P) **Synthesis and Characterization of Amphiphilic Porphyrin-Based Nanoparticles as Sensor Materials** MASAKO MORIISHI, Kobe University, Yukiya Kitayama, Tooru Ooya, Takeuchi Toshifumi

(520-17 P) **Novel Coelenterazine Derivatives for Bioluminescence Applications** RYO NISHIHARA, Keio University, Emi Hoshino, Hideyuki Suzuki, Moritoshi Sato, Tsuyoshi Saitoh, Shigeru Nishiyama, Naoko Iwasawa, Daniel Citterio, Koji Suzuki

(520-18 P) **Single Molecule Assays for Early Breast Cancer Detection** STEPHANIE M SCHUBERT, Tufts University, Shazia Baig, David R Walt

(520-19 P) **Polymeric Ion-Selective Microspheres Based on Upconverting Nanoparticles** LIANGXIA XIE, Nanjing University, Yu Qin

(520-20 P) **SDS Concentration by Microtiter Plate Assay as a Basis for Alternative Detergent Quantitation** JANET BERGSMA, Abbott Laboratories, Kevin R Rupprecht, Jeffrey Fishpaugh

(520-21 P) **Synthesis of Poly(methacryloyoxyethyl phosphoorylcholine)-Grafted Au Nanoparticles for C-Reactive Protein Sensing** YUKIYA KITAYAMA, Kobe University, Toshifumi Takeuchi

(520-22 P) **Legionella Pneumophila Detection by rRNA** IVO SIEGRIST, Supelco/Sigma-Aldrich, Shyam Verma, Olga I Shimelis, Jennifer Claus

(520-23 P) **Target-Activated Assembly of Catalytic DNA Circuits for Enzyme-Free and Isothermal Amplification in Sensitive Molecular Target Analysis** LEI MEI, Hunan University, Weihong Tan, Xiaobing Zhang

(520-24 P) **Folin-Ciocalteu Spectrophotometric Assay of Ascorbic Acid in Plant Extracts with pH Adjustment and Preextraction of Lanthanum(III)-Flavonoid Complexes** DILEK OZYURT, Istanbul Technical University

(520-25 P) **Ex Vivo Quantification of Platinum-Based Anticancer Drugs via a Platinum-Catalyzed Fluorogenic Deallylation** DIANNE PHAM, University of Pittsburgh, Kazunori Koide, Melissa Campbell

(520-26 P) **Quenching Ability of Graphene Oxide to Dye-Doped Silica Nanoparticles with Distance Dependent Manner** XU WU, University of North Dakota, Julia Xiaojun Zhao

(520-27 P) **Characterizing the Interaction Between Uranyl Ion and Fulvic Acid Using a Fluorescence Quenching Method and Regional Integration Analysis (RIA)** BINGQI ZHU, University of Massachusetts Lowell

POSTER SESSION — Session 530

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Fuels, Energy and Petrochemicals Analyses

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(530-1 P) **New Applications Using a GC BID Detector** ZHUANGZHI "MAX" WANG, Shimadzu Scientific Instruments, Clifford M Taylor, Nicole M Lock, Laura Chambers, Richard R Whitney

(530-2 P) **Continuous Monitoring and Calorific Power Calculation of Natural Gas with Standalone Micro-GC Full MEMS based** FILIPPO BARAVELLI, Pollution, Carlo Bruno

(530-3 P) **Electrochemistry of Fuels: A Perspective on the Analysis of Contaminants** LEONARDO L OKUMURA, Federal University of Vicosa, Adelir A Saczk, Marcelo F de Oliveira

(530-4 P) **Correlation of True Boiling Point Distillation Data of Upgraded Crude Oils with High Temperature Simulated Distillation** LAURA OLIVIA ALEMAN-VAZQUEZ, Instituto Mexicano del Petróleo, Jose-Luis Cano-Dominguez, Jose Luis Garcia-Gutierrez

(530-5 P) **Isomer Distribution Analysis for Improved Hydrocarbon Mixtures Characterization** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Tal Alon

(530-6 P) **Decomposition of Aromatic Amines in a Jet Fuel Surrogate** DAVID W JOHNSON, University of Dayton, Matthew Rohaly

(530-7 P) **Cyanide Analysis of Wastewater Samples from Fluid Catalytic Cracking (FCC) and Hydrocracking Operations** WILLIAM C LIPPS, Xylem/OI Analytical, Libby A Badgett, Gary Engelhart

(530-8 P) **Contamination Robust Minimalistic EI Ion Source Design** MATTHIAS FEINDT, Hamburg University of Technology, Andreas Behn, Gerhard Matz, Sven Krause

(530-9 P) **Analysis of Fracking Flowback Water from the Marcellus Shale Using In-Line Conductivity, Automated Dilution, and Ion Chromatography** CARL FISHER, Thermo Fisher Scientific, Linda Lopez

(530-10 P) **High Temperature Potentiometric Oxygen Sensors for Optimizing Combustion Processes** MAX R MULLEN, The Ohio State University

(530-11 P) **Preparation of Nitrogen-Doped Porous Carbon Nanofibers and Their Textual Effect on Their Oxygen Reduction Performance** JONG-SUNG YU, Korea University, Dae-Soo Yang, Kizhakke Palleeri Rajesh

(530-12 P) **Investigation of Nanoporous Copper Catalyst for CO2 Electroreduction** JOSHUA BILLY, The Ohio State University, Jared B Steed, Anne Co

(530-13 P) **Comprehensive Ion Analysis of Various Water Matrices in Hydraulic Fracturing Process** JAY GANDHI, Metrohm USA, Anne Shearrow, Jay Sheffer

(530-14 P) **Pushing the Temperature Threshold for Potentiometric Based NOx Sensors** MAX R MULLEN, The Ohio State University

(530-15 P) **Study of Laser Induced Breakdown Spectroscopy of Gas Mixtures** CHARLES GHANY, Mississippi State University, Jagdish Singh, Fang Yueh

(530-16 P) **Combustion Ion Chromatography- Improved Sensitivity via Automated In-Line Sample Pre-Concentration** SHELDON BERNARD, Thermo Fisher Scientific

(530-17 P) **CIC – Combustion Ion Chromatography – Old Wine in a New Bottle** JAY GANDHI, Metrohm USA, Anne Shearrow, Jay Sheffer

(530-18 P) **Method Optimization for Comprehensive Characterization of Petroleum with High Resolution Time-of-Flight Mass Spectrometry Platforms** CLECIO F KLITZKE, Leco Corporation, David E Alonso, Kevin Siek, Elizabeth Humston-Fulmer, John Heim, Joe Binkley, Jeff Patrick

(530-19 P) **Determination of Polyacrylic Acid in Boiler Water Using Size-Exclusion Chromatography with Charged-Aerosol Detection** IAN N ACWORTH, Thermo Fisher Scientific, Bruce Bailey, Xiaodong Liu, Mark Tracy

(530-20 P) **Charged Aerosol Detection and Evaporative Light Scattering Detection – Fundamental Differences Affecting Analytical Performance** IAN N ACWORTH, Thermo Fisher Scientific, Nicholas Santiago, Bruce Bailey, David Thomas

(530-21 P) **A Smart Phone of Potentiometric Titration Has Now Arrived** KATE BARNES, GR Scientific

(530-22 P) **Determination of Corrosion Inhibitor/Lubricity Increasing(CI/LI) Additives in Jet Fuel by Liquid Chromatography/Mass Spectrometry** DAVID W JOHNSON, University of Dayton, Milissa M Flake, Steven Zabarnick, Zachary J West, Richard C Striebich

(530-23 P) **Withdrawn**

(530-24 P) **Comprehensive Analysis of the Co-Products from Lurgi Gasifier** XIAOLIANG TANG, AIR LIQUIDE Frankfurt Research and Technology Center, Daniel Reiser

(530-25 P) **Improving Accuracy of Infrared Spectroscopy Determination of Soot in Engine Oils for Condition Monitoring** DAN WALSH, Spectro, Randi Price

(530-26 P) **Microfluidic Kinematic Viscosity Measurement** DAN WALSH, Spectro, Ken Caldwell

(530-27 P) **Improving SAW Sensor Measurement of Volatiles (Fuel Dilution)** DAN WALSH, Spectro, Randi Price

(530-28 P) **A New Approach to Detecting Abnormal Wear Debris Using Filter Particle Quantification and X-Ray Florescense Spectroscopy** DAN WALSH, Spectro

POSTER SESSION — Session 540

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Microscopy

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(540-1 P) **Insertion and Orientation Studies of Inward Rectifier K+ (Kir) Channels Using Confocal Single Molecule Fluorescence Microscopy YU TIAN, University of Arizona, Mark T Agasid, Christopher A Baker, Kristina Orosz, Vanessa R Sousa, Xuemin Wang, Craig A Aspinwall, S Scott Saavedra**

(540-2 P) **Study of Claudin Interaction with Scanning Ion Conductance Microscopy (SICM)** LUSHAN ZHOU, Indiana University, Yi Zhou, Chiao-Chen Chen

(540-3 P) **Comparing Flow Cytometry, Fluorometry, and Confocal Microscopy Methods for Determining the Phagocytic Ability of Macrophages Pre-Exposed to Gold and Silica Nanoparticles** KATHERINE TYNER, FDA, Simona Bancos, David Stevens

(540-4 P) **Analysis of Interactions Between E-Spun Collagen-Silk Composite Fibers and Stems Cells in Neural Differentiation** BOFAN ZHU, Illinois Institute of Technology, Wen Li, Carlo Segre, Randy Lewis, Rong Wang

POSTER SESSION **Session 550**

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Nanotechnology: Fluorescence, Extraction, Electrophoresis and Electrochemistry

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(550-1 P) **Quantum Dot Enabled Immunoassay for Multiplex Detection of Atherosclerosis Biomarkers** KRISTEN S WILLIAMS, University of New Orleans, Matthew A Tarr

(550-2 P) **Controllable Assembly of Spherical Gold Nanoparticles into One-Dimensional (1-D) Nanochains via Utilization of a Zwitterionic Surfactant and Associated Cloud Point Extraction Step** HUE THI TRAN, Fukushima University, Yoshitaka Takagai, Willie L Hinze

(550-3 P) **Electrochemical Biosensing Systems Based on the Entrapment of Glucose Oxidase in Polymer Film** HILAL INCEBAY, Nevsehir University, Onur Sengoz, Bahri Yuksel, Ahmet Okudan, Zafer Yazicigil, Esra Bilici, Yasemin Oztekin

(550-4 P) **Development of an Electrochemical Sensing System** YASEMIN OZTEKIN, Selcuk University, Mihriban Aydin

(550-5 P) **Separation of Carbon Nanodots by Size-Exclusion High Performance Liquid Chromatography** KARINA M TIRADO GONZALEZ, University at Buffalo - SUNY, Zuqin Xue, Luis A Colon

(550-6 P) **Fluorescamine-Based Screening of Nanomaterial-Biomoleular Interactions** JONATHAN ASHBY, University of California, Riverside, Erik Ligans, Wenwan Zhong

(550-7 P) **Functional Nanostructures on Injection Molded Plastic** ALICIA JOHANSSON, DTU - Technical University of Denmark, Emil Sogaard, Nis Andersen, Ling Sun, Rafael Taboryski

(550-8 P) **In Situ, One-Pot Synthesis of Reduced Graphene Oxide/Metal (Oxide) Nanocomposites Using Glucose and Its Electrocatalytic Application** XU WU, University of North Dakota, David Pierce, Julia Xiaojun Zhao

(550-9 P) **Fabrication of Highly Fluorescent Graphene Quantum Dots Using L-glutamic Acid for In Vitro/In Vivo Imaging and Sensing** XU WU, University of North Dakota, Jiao Chen, Julia Xiaojun Zhao, Min Wu

POSTER SESSION **Session 560**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Nanotechnology: Lab-On-A-Chip, Imaging, and Spectroscopy

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(560-1 P) **Three-Dimensional Silver Nanostructure for SERS Sensing** RYOHEI HARA, Laboratory of Advanced Science and Technology, Utsumi Yuichi

(560-2 P) **Topographic Characterization of Nanostructures on Curved Polymer Surfaces** NIKOLAJ A FEIDENHANS'L, DTU - Technical University of Denmark, Rafael J Taboryski, Jan C Petersen

(560-3 P) **Nanoscale Chemical Imaging of Membrane Receptors by Tip Enhanced Raman Spectroscopy** HAO WANG, University of Notre Dame, Zachary D Schultz

(560-4 P) **Antireflective Silicon Nanocones Arrays in Small Molecules Analysis** NAN LU (LYU), Jilin University

(560-5 P) **Analytical Evidence of Ligand-Controlled Stabilization of Semiconductor Nanoclusters Surface Occupied Orbitals** MEGHAN TEUNIS, Indiana University - Purdue University Indianapolis, Sukanta Dolai, Rajesh Sardar

(560-6 P) **Dye-Loaded Nanocapsules Immobilized in a Hydrogel Matrix: Development of Flow-Through Optical pH Sensors** ALEXANDER MACLIN, University of Memphis, Mariya Kim, Chris Brown, Eugene Pinkhassik, Erno Lindner

(560-7 P) **Patterned Superhydrophobic/philic Substrates as a Universal Platform for Various Surface-Enhanced Spectroscopic Techniques** HIROYUKI TAKEI, Tokyo University

(560-8 P) **Quantitative Evaluation of Stored Blood for Use in Transfusion Medicine with 3D-Printed Fluidic Devices** CHEN CHENGPENG, Michigan State University, Wang Yimeng, Dana Spence

(560-9 P) **Self-Pumping Microfluidic Systems Using Degassed Poly(dimethylsiloxane) Pumps** RACHEL M FEENY, Colorado State University, Charles S Henry

(560-10 P) **Microfluidic Assays for Long-Term Perfusion Culture and Chemical Monitoring of Living Cells** SHUSHENG LU, University of Michigan, Robert Kennedy

(560-11 P) **Investigating the Effects of Surface Ligand Chemistry on Electronic Coupling of Ultrasmall Semiconductor Nanocrystals** KATIE N LAWRENCE, Indiana University - Purdue University Indianapolis, Rajesh Sardar

(560-12 P) **Separation of Bacterial Species Using Microfluidic Devices** NIL TANDOGAN, Northeastern University, Edgar D Goluch

(560-13 P) **Integrating Electrochemistry and Electrokinetic Flow in Arrays of Embedded Annular Nanoband Electrodes** LAWRENCE ZAINO, University of Notre Dame, Paul W Bohn

(560-14 P) **A Nano Based Novel Biomedicine for Iron Deficiency** ANAMIKA MUBAYI, University of Allahabad, Sanjukta Chatterji, Prashant K Rai, Geeta Watal

(560-15 P) **Measurement of Particle Size Distribution in the sub-100 nm Range with the Ultrasound Pulsed Doppler (USPD) Method** STEVEN A AFRICK, Prodyne Corporation, Clark K Colton

(560-16 P) **Developments in Ultrafast Raman Imaging for Nanotechnology Applications** TIM BATTEN, Renishaw plc

(560-17 P) **An Easy to Use Atomic Force Microscope** ÜMIT CELIK, NanoMagnetics Instruments Ltd, Ahmet Oral

(560-18 P) **Green Biosynthesis of Silver Nanoparticles Using Triticum durum Extract and Its Antimicrobial Activities** KÜBRA ERKAN, Hacettepe University Institute of Graduate Studies, Demet Erdönmez, Sam Mesut, Sabri Gökmen, Necdet Sa lam

(560-19 P) **Electrochemical Microfluidic Biosensor for Sub-Femto Molar Detection of DNA Without Amplification** AURELIEN GIMENEZ, Dublin City University, Robert J Forster, Anita Venkatanarayanan, Tia E Keyes

(560-20 P) **Portable Microanalyzer Using a Pyroelectric Crystal** SUSUMU IMASHUKU, Kyoto University, Issei Ohtani, Jun Kawai

(560-21 P) **Novel Pressure-Controlling Valve of Centrifugal Microfluidics** MASAKI ISHIZAWA, Laboratory of Advanced Science and Technology

POSTER SESSION **Session 570**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Ongoing Enhancements to Chromatographic Methods

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(570-1 P) **Analysis of Multiple Pesticides by Supercritical Fluid Chromatography/Tandem Mass Spectrometry with a Sub-2 Micron Particle Column - A Feasibility Study** JINCHUAN YANG, Waters Corporation, Brian Tyler, Jennifer Burgess, Joe Romano

(570-2 P) **Withdrawn**

(570-3 P) **Analysis of Additives in Lubricants Using Thermal Sampling Techniques** KAREN SAM, CDS Analytical, Thomas Wampler, Gary Deger, Steve Wesson, Ben Peters

(570-4 P) **Tetraaryl Phosphonium-Based Ionic Liquids as High Thermal Stability Stationary Phases for Gas Chromatography** ALI NAJAFI, The University of Toledo, Cody G Cassity, James H Davis, Jared L Anderson

(570-5 P) **How to Recognize and Eliminate Ghost Peaks in Gas Chromatography** JAAP DEZEEUW, Restek

(570-6 P) **Applications for Variable Geometry Columns in GC and GC-MS** WILLIAM H STEINECKER, VGC Chromatography, Gilbert E Pacey

(570-7 P) **Decrease GC Run Time with a New Column Phase Geometry** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, William H Steinecker

(570-8 P) **Optimizing Resolution in Reversed-Phase UPLC Methods Development with Automatic pH Selection** APARNA CHAVALI, Waters Corporation, Thomas E Wheat, Patricia R McConville

(570-9 P) **HILIC Mode and Stationary Phase for Alternative UHPLC Analyses** WILLIAM JOHN LONG, Agilent Technologies, Anne Mack

(570-10 P) **Mixed Mode Mechanisms in LC: Curse or Cure?** MERLIN BICKING, ACCTA, Inc., Richard A Henry

MONDAY, MARCH 3, 2014
AFTERNOON

(570-11 P) **A Refractive Index Detector for UPLC** PATRICIA R MCCONVILLE, Waters Corporation, Charles H Phoebe, Tanya Jenkins

(570-12 P) **Determination of Urea in the Presence of Thioglycolic Acid and Triethanolamine in Cosmetics by HPLC-HILIC (Hydrophilic Interaction Chromatography)** CAROLINA LUCIA MENDOZA FORERO, Belcorp

(570-13 P) **Comparison of UHPLC and Superficially Porous Particles in HPLC** LEE N POLITE, Axion Analytical Labs, Inc., Robert W McCoy, Mary Beth Smith, Richard E Pauls

(570-14 P) **Novel Hybrid Metal Organic Framework-Organic Polymer Monolith for Chromatographic Application** HSI-YA HUANG, Chung Yuan Christian University, Cheng-Lan Lin, Wan-Ling Liu

POSTER SESSION — Session 580

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Teaching Methods and Regulatory

Monday Morning, Exposition Floor, Back of Aisles 1000-2500

(580-1 P) **Environmental Education Using Acid Rain in Sapporo, Northern Japan, During 2006-2013** MASAHIKO KAN, Hokkaido University

(580-2 P) **Do Apps Really Help Students Learn Chemistry** ENRIQUE ARCE-MEDINA, ESIQIE

(580-3 P) **Rapid Determination of Ten Colorants in Lipstick Samples by Ultra High Performance Liquid Chromatography Coupled with Triple Quadrupole Mass Spectrometry Utilizing Transitions from Doubly Charged Precursor Ions** ZHONG QISHENG, Shimadzu (China) Co., Ltd., Ye Ying

(580-4 P) **Lessons from the First-Time Flip: Tips, Observations and Assessment from the Implementation of the Inverted-Classroom Model in a General Chemistry Course** JARED S BAKER, Elmira College

(580-5 P) **Microcontrollers in the Analytical Chemistry Teaching Lab** GARY A MABBOTT, University of St. Thomas

(580-6 P) **Use of Passive Air Sampler for Cultivating Sense of Environmental Forensics in Practice of Environmental Education** YOSHIKA SEKINE, Tokai University, Ayano Azuma, Yuki Nagaoka, Butsugan Michio

(580-7 P) **Using Technology to Flip an Undergraduate Analytical Chemistry Course** NEIL FITZGERALD, Marist College, Luisa Li

(580-8 P) **What Medical Device Manufacturers Should Know about RoHS 2** JOE LANGTON, Intertek

(580-9 P) **The Updated EN 61010-1 Standard: Challenges and Solutions** SCOTT PETERSON, Intertek

(580-10 P) **Synthesis, Antibacterial and Antifungal Activities of 5-imidazolinone Derivatives** DINESHKUMAR B BALDANIYA, M G Science Institute

(580-11 P) **Applying Acting, Personal Demonstrations, and Visual Exhibits as a New Method of Science Education with the Carnegie Science Center of Pittsburgh** AMANDA E DUMI, Seton Hill University

(580-12 P) **Measuring Dissolution Rate of Tablets: An Experiment for Teaching Quantitative Ultraviolet Absorption Spectroscopy** MAZEN L HAMAD, University of Hawaii at Hilo

(580-13 P) **Integration of Authentic Chemical Separation Research Projects into Analytical Chemistry Curriculum** YUEGANG ZUO, University of Massachusetts Dartmouth

AWARDS — Session 590

SEAC - Charles N Reilley and Young Investigators Award

arranged by Mark Ratner, Northwestern University

Monday Afternoon, Room S402a

Mark Ratner, Northwestern University, Presiding

1:30 **Introductory Remarks - Mark Ratner**

1:35 **Presentation of the 2014 SEAC - Charles N Reilley Award to Joseph Hupp, Northwestern University, by Mark Ratner, Northwestern University**

1:40 (590-1) **Interfaces for Photoelectrochemical Energy Conversion** JOSEPH HUPP, Northwestern University

2:15 (590-2) **Photoelectrochemical Investigation of Outersphere Redox Shuttles in Dye Sensitized Solar Cells** THOMAS HAMANN, Michigan State University

2:50 (590-3) **Some Science for Joe** MARK RATNER, Northwestern University

3:25 **Recess**

3:40 **Presentation of the 2014 SEAC - Young Investigators Award to Stephen Maldonado, University of Michigan, by Mark Ratner, Northwestern University**

3:45 (590-4) **New Ideas for Liquid Metal Electrodes** STEPHEN MALDONADO, University of Michigan

4:20 (590-5) **Spectroelectrochemical Studies of Energy Materials Interphases and Interfaces** KEITH STEVENSON, The University of Texas at Austin

SYMPOSIUM — Session 600

Advanced Mass Spectrometry for Food Safety and Cosmetics – Challenges and Validation

arranged by Perry G Wang, U.S. Food and Drug Administration and Xiaogang Chu, China Academy of Inspection and Quarantine

Monday Afternoon, Room S402b

Perry G Wang, U.S. Food and Drug Administration, Presiding
Xiaogang Chu, China Academy of Inspection and Quarantine, Presiding

1:30 **Introductory Remarks - Perry G Wang and Xiaogang Chu**

1:35 (600-1) **Advanced Mass Spectrometry for Food Safety and Cosmetics - Challenges and Validation** PERRY G WANG, US FDA, Wanlong Zhou, Alexander J Krynitsky

2:10 (600-2) **Study to Monitor Chemical Contaminants in Foods** STEVEN LEHOTAY, USDA Agricultural Research Service

2:45 (600-3) **On-Site Screening for Plasticizers, Maleic Acid, Melamine, and Residual Pesticides in Tainted Foods via Mobile Ambient Mass Spectrometry (MAMS)** JENTAIE SHIEA, National Sun Yat-Sen University, Min-Zong Huang, Sy-Chyi Cheng, Christopher Shiea

3:20 **Recess**

3:35 (600-4) **Mass Spectrometry: Shifting the Landscape of Allergen Analysis** BERT POPPING, Eurofins, Carmen Diaz-Amigo

4:10 (600-5) **Ultra-High Performance Liquid Chromatography Electrospray Ionization Q-Orbitrap Mass Spectrometry for Analysis of Pesticide and/or Antibiotic Residues in Food: Method Development and Validation** JIAN WANG, Canadian Food Inspection Agency

SYMPOSIUM **Session 610**

Advances in Diamond Based Sensing and Analysis

arranged by Julie V MacPherson, University of Warwick

Monday Afternoon, Room S404a

Julie V MacPherson, University of Warwick, Presiding

1:30		**Introductory Remarks - Julie V MacPherson**
1:35	(610-1)	**Recent Development on Electrochemical Application of Boron-Doped Diamond Electrodes** YASUAKI EINAGA, Keio University
2:10	(610-2)	**Nanoscale Magnetic Imaging Using Diamond** RONALD WALSWORTH, Harvard University
2:45	(610-3)	**Nanodiamond for Environmental Tracking** ROBERT J HAMERS, University of Wisconsin-Madison, Marco Torelli, Ian Gunsolus, Christy L Haynes, Rebecca D Klaper, Gustavo Dominguez, Geiger Franz, Chang-Soo Lee, Maddy Meyer, Joel A Pedersen, Min Yan, Galya Orr
3:20		**Recess**
3:35	(610-4)	**Diamond Microelectrodes for Neurochemical Studies in Human Tissues** GREG M SWAIN, Michigan State University, Marion France, James J Galligan
4:10	(610-5)	**Electrochemical X-Ray Fluorescence (EC-XRF): A New Technique for Heavy Metal Detection at Sub-ppb Levels** JULIE V MACPHERSON, University of Warwick, Laura Hutton, Mark E Newton

SYMPOSIUM **Session 620**

Advances in Raman Spectroscopy

arranged by Sanford A Asher, University of Pittsburgh

Monday Afternoon, Room S404bc

Sanford A Asher, University of Pittsburgh, Presiding

1:30		**Introductory Remarks - Sanford A Asher**
1:35	(620-1)	**Using Deep-UV Resonance Raman Spectroscopy to Monitor Protein-Lipid Interactions** RENEE D JIJI, University of Missouri Columbia, Jian Xiong, Michael K Eagleburger, Anahita Zare, Mia C Brown, Jason W Cooley
2:10	(620-2)	**Low-Wavenumber Stokes and Anti-Stokes Raman Microscopy for Pharmaceutical Tablet Characterization** MICHAEL J PELLETIER, Pfizer, Shawn M Mehrens, Christine C Pelletier
2:45	(620-3)	**Ultrafast Plasmonics: Surface-Enhanced Femtosecond Stimulated Raman Spectroscopy** RICHARD P VAN DUYNE, Northwestern University
3:20		**Recess**
3:35	(620-4)	**Raman Spectroscopic Detection of Life Signatures on the ExoMars Mission: The Role of Terrestrial Extremophiles in Hot and Cold Deserts** HOWELL GWYNNE MORT EDWARDS, University of Leicester, Ian B Hutchinson, Richard Ingley, Lewis Dartnell, Liam V Harris, Melissa McHugh
4:10	(620-5)	**Raman Characterization of Critical Biological Reactions in Dilute Aqueous Solutions, in Single Crystals and in Living Cells** PAUL CAREY, Case Western Reserve University, Ioanna Antonopoulos, Tao Che, Hossein Heidari Torkabadi

SYMPOSIUM **Session 630**

Applications of Capillary Electrophoresis in Vaccine, Virus, and Biological Particles -

arranged by Richard Rianto Rustandi, Merck Co

Monday Afternoon, Room S404d

Richard Rianto Rustandi, Merck Co, Presiding

1:30		**Introductory Remarks - Richard Rianto Rustandi**
1:35	(630-1)	**Capillary Electrophoresis as a Tool to Trace the Internalization of a Virus into a Cell** ERNST KENNDLER, University of Vienna
2:10	(630-2)	**A New Approach to Capillary Based Western Analysis in Vaccine Development** MELISSA HAMM, Merck
2:45	(630-3)	**Measurement of Individual Mitochondrial Membrane Potential by Capillary Electrophoresis** EDGAR A ARRIAGA, University of Minnesota, Gregory Wolken
3:20		**Recess**
3:35	(630-4)	**Design of a Capillary Electrophoresis Charge Heterogeneity Method** K STEVEN COOK, Pfizer, Michael R Schlittler, Michele R Bailey-Piatchek, Michael D Jones
4:10	(630-5)	**Capillary Electrophoresis in Vaccine Development** RICHARD RIANTO RUSTANDI, Merck Co, Melissa Hamm, Feng Wang, Sha Ha

SYMPOSIUM **Session 640**

Cancer Nanotechnology – Enabling Development of New Diagnostics and Therapeutics

arranged by Piotr Grodzinski, National Cancer Institute and Chad A Mirkin, Northwestern University

Monday Afternoon, Room S401a

Piotr Grodzinski, National Cancer Institute, Presiding

1:30		**Introductory Remarks - Piotr Grodzinski and Chad A Mirkin**
1:35	(640-1)	**Spherical Nucleic Acids (SNAs): Novel Therapeutic Agents for Cancer Treatment** CHAD A MIRKIN, Northwestern University
2:10	(640-2)	**Novel Nanobiotechnology Approaches to Enhance Cancer Therapy** JOSEPH M DESIMONE, University of North Carolina at Chapel Hill
2:45	(640-3)	**Paclitaxel-Loaded Expansile Nanoparticles for the Detection and Treatment of Intraperitoneal Mesothelioma** MARK GRINSTAFF, Boston University
3:20		**Recess**
3:35	(640-4)	**Tumor-Targeted Fluorescent Dyes for Fluorescence-Guided Surgery** PHILIP S LOW, Purdue University, Sakkarapalayam Mahalingam, Lindsay Kelderhouse, Pravin Gagare, Sumith Kularatne, Mohammad Noshi
4:10	(640-5)	**Translational Nanotechnology for Oncology** MARTIN POMPER, Johns Hopkins University

SYMPOSIUM **Session 650**

Capillary Liquid Chromatography - A Powerful Tool in Analytical Chemistry

arranged by Stephen G Weber, University of Pittsburgh

Monday Afternoon, Room S405a

Stephen G Weber, University of Pittsburgh, Presiding

1:30		**Introductory Remarks - Stephen G Weber**
1:35	(650-1)	**Nanoparticle Modified Monolithic Columns** LUIS A COLON, University at Buffalo - SUNY, Lisandra Santiago-Capeles, Zuqin Xue
2:10	(650-2)	**High Resolution Separations by Capillary UHPLC** JAMES W JORGENSON, University of North Carolina at Chapel Hill, Kaitlin Fague, Justin Godinho, Jordan Stobaugh, Edward Franklin
2:45	(650-3)	**Prospects for Organic Monoliths in Capillary Liquid Chromatography** MILTON L LEE, Brigham Young University, Pankaj Aggarwal, Kun Liu, John S Lawson, H Dennis Tolley
3:20		**Recess**
3:35	(650-4)	**Monolithic Capillary Columns: Novel Approaches to Tuning Porosity and Pore Surface Chemistry** FRANTISEK SVEC, Lawrence Berkeley National Laboratory
4:10	(650-5)	**Increasing Capillary HPLC Speed** STEPHEN G WEBER, University of Pittsburgh, Jing Zhang, Stephen R Groskreutz

SYMPOSIUM **Session 660**

Ion Mobility Separations in Proteomics and Structural Biology

arranged by Alexandre A Shvartsburg, Pacific Northwest National Laboratory

Monday Afternoon, Room S405b

Alexandre A Shvartsburg, Pacific Northwest National Laboratory, Presiding

1:30		**Introductory Remarks - Alexandre A Shvartsburg**
1:35	(660-1)	**Searching for Conformationally-Selective Small Molecule Therapeutics Using Ion Mobility-Mass Spectrometry** BRANDON T RUOTOLO, University of Michigan, Jessica Rabuck, Shuai Niu
2:10	(660-2)	**Zoom Mode Ion Mobility Spectrometry** MICHAEL A EWING, Indiana University, Steven M Zucker, Matthew S Glover, David E Clemmer
2:45	(660-3)	**Ion Mobility-Mass Spectrometry as a Tool in Structural Biology** CHRISTIAN BLEIHOLDER, Florida State University
3:20		**Recess**
3:35	(660-4)	**High-Resolution Differential Ion Mobility Spectrometry from Amino Acid Isotopomers to Larger Protein Conformers** ALEXANDRE A SHVARTSBURG, Pacific Northwest National Laboratory
4:10	(660-5)	**Using High Field Asymmetric Waveform Ion Mobility Spectrometry (FAIMS) to Improve Protein Discovery by Mass Spectrometry** KRISTIAN E SWEARINGEN, Institute for Systems Biology, Michael R Hoopmann, Robert L Moritz

SYMPOSIUM **Session 670**

Miniature Mass Spectrometers

arranged by R Graham Cooks and Zheng Ouyang, Purdue University

Monday Afternoon, Room S504d

Zheng Ouyang, Purdue University, Presiding

1:30		**Introductory Remarks - R Graham Cooks and Zheng Ouyang**
1:35	(670-1)	**Mobile and Miniature Mass Spectrometers for Marine and Space Applications** TIMOTHY SHORT, SRI International, Friso H van Amerom, Strawn K Toler, Andres M Cardenas-Valencia, Ashish Chaudhary, Michelle L Cardenas, Ryan J Bell, Patrick A Roman
2:10	(670-2)	**Vacuum Systems for Mini MS** PAUL H SORENSEN, Creare Inc., Robert J Kline-Schoder
2:45	(670-3)	**Design and Development of Mass Spectrometry Devices for Point-of-Care Diagnosis** ZHENG OUYANG, Purdue University, Chien-Hsun Chen, Linfan Li, Yue Ren, Robert G Cooks
3:20		**Recess**
3:35	(670-4)	**Microengineered Mass Spectrometers for Liquid Chromatography and Other Flow Applications** STEVEN WRIGHT, Microsaic Systems
4:10	(670-5)	**Mass Spectrometry for Security Applications** DENNIS JOSEPH BARKET, JR., FLIR, Mitch Wells

SYMPOSIUM **Session 680**

Semiconducting Sensors for Biodiagnostics and Food Safety

arranged by Radislav A Potyrailo, GE Global Research
and Vladimir M Mirsky, Lausitz University of Applied Sciences

Monday Afternoon, Room S401d

Radislav A Potyrailo, GE Global Research, Presiding

1:30		**Introductory Remarks - Radislav A Potyrailo and Vladimir M Mirsky**
1:35	(680-1)	**Carbon Nanotubes Chemiresistors for Biological and Agricultural Applications** TIMOTHY M SWAGER, Massachusetts Institute of Technology (MIT)
2:10	(680-2)	**A Novel Real Time Carbon Dioxide Analyzer for Health and Environmental Applications: Sensor Calibration and Validation** ERICA FORZANI, Arizona State University, Di Zhao
2:45	(680-3)	**Integrated Electrochemical Chemotransistors as Chemosensors with Adjustable Affinity** VLADIMIR M MIRSKY, Brandenburg University of Technology
3:20		**Recess**
3:35	(680-4)	**Bio-Nano Hybrids for Chemical Detection** A T CHARLIE JOHNSON, University of Pennsylvania
4:10	(680-5)	**Electronic and Optical Multivariable Transducers for Enhanced Chemical and Biological Sensing** RADISLAV A POTYRAILO, GE Global Research

SYMPOSIUM **Session 690**

The Twenty-Fifth James L Waters Symposium: MALDI-TOF

arranged by William R Sharpe, The Pittsburgh Conference

Monday Afternoon, Room S401bc

William R Sharpe, The Pittsburgh Conference, Presiding

1:30		**Introductory Remarks - William R Sharpe**
1:35	(690-1)	**Peptide and Protein Mass Spectrometry Before MALDI and ESI, the Pioneering Period** PETER ROEPSTORFF, University of Southern Denmark
2:10	(690-2)	**ABSTRACT WAS NOT PROVIDED AT TIME OF PRINT** FRANZ HILLENKAMP, University of Muenster
2:45	(690-3)	**Development of TOF-MS from Intellectual Curiosity to Practical Technique** MARVIN L VESTAL, SimulTOF Systems
3:20		**Recess**
3:35	(690-4)	**MALDI Imaging Mass Spectrometry: A Next Generation Molecular Mapping Technology for Biological and Clinical Research** RICHARD M CAPRIOLI, Vanderbilt University
4:10	(690-5)	**Using High Throughput Mass Spectrometric Immunoassay (MSIA) in Biomarker Development** RANDALL W NELSON, The Biodesign Institute

WORKSHOPS **Session 700**

Technological Advances in Ultra High Performance Liquid Chromatography -

arranged by Jason Anspach and Michael David McGinley, Phenomenex

Monday Afternoon, Room S503b

Jason Anspach, Phenomenex, Presiding

1:30		**Introductory Remarks - Jason Anspach and Michael David McGinley**
1:35	(700-1)	**Advantages of UHPLC in the Micro-LC Format** REMCO VAN SOEST, Eksigent, part of AB SCIEX, Khaled Mriziq, Don W Arnold
2:05	(700-2)	**Applications of Sub-2-µm Solid-Core Particle Columns** KENNETH J FOUNTAIN, Waters Corporation, Jonathan E Turner, Bonnie Alden, Pamela Iraneta
2:35	(700-3)	**Accelerating Biochemical Structure Analysis Through the Use of Superficially Porous Particle Technologies for Liquid Chromatography** BARRY EDWARD BOYES, Advanced Materials Technology, Inc., Tim Langlois, Stephanie Schuster, Joseph Kirkland, Joseph J DeStefano
3:05		**Recess**
3:20	(700-4)	**Core-shell Contributions to Particle Miniaturization in Ultra-High Performance Liquid Chromatography** JASON ANSPACH, Phenomenex, A Carl Sanchez, Gareth Friedlander, Tivadar Farkas
3:50	(700-5)	**New UHPLC Column Technologies for a Wide Variety of Applications** XIAOLI WANG, Agilent Technologies, Wu Chen, Jason Link, James Martosella, Maureen Joseph, William Barber
4:20	(700-6)	**A Decade of Smaller Particles, Higher Pressures, and Faster Separations: The Current and Future Status of UHPLC in Pharmaceutical Method Development** TODD D MALONEY, Eli Lilly and Company

ORGANIZED CONTRIBUTED SESSIONS **Session 710**

Ionophore-Based Chemical Sensors II

arranged by Philippe Buhlmann, University of Minnesota and Eric Bakker, University of Geneva

Monday Afternoon, Room S503a

Philippe Buhlmann, University of Minnesota, Presiding

1:30	(710-1)	**Electrochemistry in Paper** GEORGE M WHITESIDES, Harvard University
1:50	(710-2)	**Inkjet-Printed Paper-Based Colorimetric Sensor Array for the Discrimination of Volatile Amines** DANIEL CITTERIO, Keio University, Tamaki Soga, Yusuke Jimbo, Koji Suzuki
2:10	(710-3)	**Characterization and Applications of Reversible Pulstrode Polyion Sensors as Detectors in Flow Injection Analysis** ANDREA K BELL-VLASOV, University of Michigan, Joanna Zajda, Ayman Eldourghamy, Mark E Meyerhoff
2:30	(710-4)	**Nanomaterials in Ion-Selective Sensors** ELIZABETH (LISA) A HALL, University of Cambridge, Jamie D Walters
2:50		**Recess**
3:05	(710-5)	**Voltammetric Ion-Selective Electrodes for Ultratrace Analysis** SHIGERU AMEMIYA, University of Pittsburgh
3:25	(710-6)	**Electrochemical Sensors for Developing Biodegradable Implants** WILLIAM R HEINEMAN, University of Cincinnati, Julia Kuhlmann, Xuefei Guo, Amos Doepke, Tingting Wang, Kolade Ojo, Robert T Voorhees, Sarah K Pixley, Shongyun Dong, Vesselin N Shanov, Frank Witte
3:45	(710-7)	**Ultra-Small, Quantum Dot Based Nano-optodes for Imaging Physiological Potassium** HEATHER A CLARK, Northeastern University, Timothy Ruckh
4:05	(710-8)	**Tailoring Ion-Transport Transport Through Polyacrylate Membranes** AGATA MICHALSKA, University of Warsaw, Anna Kisiel, Emilia Woznica, Maksymiuk Krzysztof

ORGANIZED CONTRIBUTED SESSIONS — Session 720

Spectrochemical Analysis of Biological Systems A Perspective from New and Established Investigators -

arranged by Sean M Burrows, Oregon State University

Monday Afternoon, Room S504a

Sean M Burrows, Oregon State University, Presiding

1:30	(720-1)	**Developing miRNA Biosensors to Use in Two-Photon Applications** SEAN M BURROWS, Oregon State University
1:50	(720-2)	**Bioanalytical Applications of Surface-enhanced Raman Spectroscopy and Localized Surface Plasmon Resonance Imaging** BHAVYA SHARMA, Northwestern University, Richard P Van Duyne
2:10	(720-3)	**Spectrobiochemistry at the Single Molecule Level: RNA Silencing Unsilenced** NILS G WALTER, University of Michigan
2:30	(720-4)	**Examination of UV-Excited Fluorescence and Resonance Raman Spectroscopy for Determination of DNA/ Protein Ratios** JONATHAN SCAFFIDI, Miami University, Benoit Lauly
2:50		**Recess**
3:05	(720-5)	**Developing a Diverse Toolkit for Detecting and Treating Epithelial Ovarian Cancer** REBECCA WHELAN, Oberlin College
3:25	(720-6)	**Plasmonic Nanostars: A New Generation of Nano-Platform for Molecular Medical Theranostics** TUAN VO-DINH, Duke University
3:45	(720-7)	**Fluorescence as a Tool to Probe Biochemical Response in Ischemic and Reperfused Cell Systems** DIMITRI PAPPAS, Texas Tech University
4:05	(720-8)	**Quantitative Bio-Detection Using** SERS AMANDA J HAES, University of Iowa

ORAL SESSIONS — Session 730

Biomedical Samples and Sensors

Monday Afternoon, Room S501a

Emelita D Breyer, Breyer Foundation, Presiding

1:30	(730-1)	**Protein Expression Profiling of Signal Transduction Pathways in Cancerous Tissues Using Microring Resonator Arrays** JAMES H WADE, University of Illinois at Urbana-Champaign, Ryan C Bailey
1:50	(730-2)	**Real-Time PTR-TOF Measurements of Breath Biomarkers Reveal Dependency on Breathing Patterns** PRITAM SUKUL, University Medicine of Rostock, Phillip Trefz, Jochen K Schubert, Wolfram Miekisch
2:10	(730-3)	**Investigation of Solid Phase Micro Extraction as an Alternative to Dried Blood Spot** CRAIG R AURAND, Supelco/Sigma-Aldrich, Robert E Shirey, David S Bell, Leonard M Sidisky
2:30	(730-4)	**Accurate pH Measurement with pH Sensors on the Basis of an Ionic Liquid Salt Bridge** MANABU SHIBATA, HORIBA, Ltd., Kazuhiro Miyamura, Makoto Kato, Yasukazu Iwamoto, Satoshi Nomura
2:50		**Recess**
3:05	(730-5)	**Up-Regulating Quorum Sensing Molecules for Early Detection of Bacterial Infections Electrochemically** HUNTER J SISMAET, Northeastern University, Thaddaeus A Webster, Edgar D Goluch
3:25	(730-6)	**Large Scale Fabrication of Polymer Multilevel Nano-Microfluidic Lab-on-Chip (LoC) Systems for Electrochemical Sensing** MARCO MATTEUCCI, DTU - Technical University of Denmark, Simon Larsen, Garau Alessandro, Rafael J Taboryski
3:45	(730-7)	**Optical Detection of Hepatitis Virus Proteins Using Waveguide-Mode Sensors** ASHIBA HIROKI, AIST, Fujimaki Makoto, Awazu Koichi, Tanaka Mutsuo, Yamamoto Mami, Tanaka Torahiko, Makishima Makoto
4:05	(730-8)	Electrochemical Detection of Cancer Biomarker MicroRNA Based on p19 Protein MEHMET OZSOZ, Gediz University

ORAL SESSIONS — Session 740

Drug Discovery

Monday Afternoon, Room S501bc

Gary W Yanik, PDR-Separations LLC, Presiding

1:30	(740-1)	**Analysis of Phenethylamine Street Drugs for Psychoactive Compounds and Impurities** MAURA K MCGONIGAL, The Pennsylvania State University, Frank Dorman, Philip Smith
1:50	(740-2)	**In-Silico, In-Vitro and In-Vivo Evaluation of the Physicochemical, ADME and Biopharmaceutical Properties of Potential Anticancer Compound Rottlerin: Application of IVIVE and PBPK Modeling in Prospective Prediction of Oral Pharmacokinetics in Humans** ATUL S RATHORE, CARPS, Bharati Vidyapeeth University, Pune, Sameer S Ketkar, Asjad I Visnagri, Abhijit A Pujari, Atulkumar D Rajage, Sathiyanarayanan Lohidasan, Kakasaheb R Mahadik
2:10	(740-3)	**Formulation and Characterization of Solid Dispersion Incorporated Topical Gel of Tolnaftate: An Antifungal Drug** MOHAMMAD AJAZUDDIN, Rungta College of Pharmacy Science and Research
2:30	(740-4)	**On-Line Nanopore Optical Interferometry Mass Spectrometry for Screening and Quantifying Small Molecule-Protein and Protein-Protein Interactions** IAIN CAMPUZANO, Amgen, Inc., Paul D Schnier, Michelsen Klaus
2:50		**Recess**
3:05	(740-5)	**Accelerating Drug Discovery Using Capillary Electrophoresis as a Pre-Screening Tool for High-Throughput Analysis** KATHRYN RILEY, Wake Forest University, Christa L Colyer
3:25	(740-6)	**Analysis of Marijuana Street Samples for Simultaneous Potency and Pesticide Fingerprinting Using a Deans Switch with GC-FID and GCxGC-ECD** LINDSAY MITCHELL, The Pennsylvania State University, Emily Ly, Amanda Leffler, Julie Kowalski, Jack Cochran, Frank Dorman
3:45	(740-7)	**Software for Semi-Automated Prediction and LC/MS Based Identification of Drug Related Metabolites** GRAHAM A MCGIBBON, ACD/Labs, Inc., Pranas Japertas, Rytis Kubilius, Kiril Lanevskij, Andrius Sazonovas, Eduard A Kolovanov, Andrey Paramonov, Vitaly Lashin
4:05	(740-8)	**Natural Hydrogel/membrane Structures and Lipogels as Drug Delivery Systems** SERGEY V KAZAKOV, Pace University

ORAL SESSIONS — Session 750

Electrochemical Sensors for Bioanalysis

Monday Afternoon, Room S501d

Timothy G Strein, Bucknell University, Presiding

1:30	(750-1)	**Optimization of a Dual Electrochemical Microsensor for Real-Time, Simultaneous NO/CO Measurements in Living Rat Brain** YEJIN HA, Ewha Womans University, Areum Jo, Minah Suh, Youngmi Lee
1:50	(750-2)	**Portable, Low-Cost, and Ultra-Sensitive Glucometer for Quantification of Tear Glucose Concentrations** ANANT S BALIJEPALLI, University of Michigan, Kyoung H Cha, Bruce E Cohan, Mark E Meyerhoff
2:10	(750-3)	**Measuring the Role of Norepinephrine in Cerebral Hemodynamics with Fast Scan Cyclic Voltammetry** ELIZABETH S BUCHER, University of North Carolina at Chapel Hill, Laura Kim, Megan E Fox, Nathan T Rodeberg, Anna M Belle, R Mark Wightman
2:30	(750-4)	**Reference Electrodes with Salt Bridges Contained in Nanoporous Glass: An Underappreciated Source of Error** MARAL PS MOUSAVI, University of Minnesota, Philippe Buhlmann
2:50		**Recess**
3:05	(750-5)	**Biocompatibility Strategies for Intravenous Continuous Glucose Monitoring Sensors** ALEXANDER K WOLF, University of Michigan, Gary C Jensen, Mark E Meyerhoff
3:25	(750-6)	**Development of an Electrochemical Microsensor for Simultaneous Detection of Oxygen, Nitric Oxide, and Carbon Monoxide in Living Tissue** JISEON NAH, Ewha Womans University, Jeongeun Sim, Minah Suh, Youngmi Lee
3:45	(750-7)	**Quantitative Detection of Fucoidan Using Polyion-Sensitive Electrochemical Sensors** KELLY A MOWERY, Eastern University, Ji Min Kim, Mary-Frances Barr, Loc Nguyen
4:05	(750-8)	**Flow-Injection Analysis-Electrochemiluminescence for Determination of Proline** SUHAM T AMEEN, Tkrit University

ORAL SESSIONS **Session 760**

Environmental Analysis of Metals in Water

Monday Afternoon, Room S502a

Vassili Karanassios, University of Waterloo, Presiding

1:30	(760-1)	**Pb Electrodeposition in the Field and Analysis in the Lab by ICP-AES for Taking Part of the to the Sample and the Pb-Cu Rule Verification-Applications** VASSILI KARANASSIOS, University of Waterloo, J McEnaney, B Lai
1:50	(760-2)	**Simultaneous Atomic Absorption and Atomic Fluorescence Spectrophotometry for Mercury Determination in Water Samples** SUMEDH P PHATAK, Milestone
2:10	(760-3)	**Mercury Speciation in Water and Digested Biological Samples by Selective On-Line Pre-Concentration and Liquid Chromatography Cold Vapour-AFS** CHRISTOPHE-CORNELIUS BROMBACH, University of Aberdeen, Eva Krupp, Jorg Feldmann, Bin Chen, Warren T Corns, Peter B Stockwell
2:30	(760-4)	**In Situ Control of Local pH Using a Boron Doped Diamond Ring-Disc Electrode: Optimizing Heavy Metal Detection in Neutral Solutions** TANIA L READ, University of Warwick, Eleni Bitziou, Maxim B Joseph, Mark E Newton, Julie V Macpherson
2:50		**Recess**
3:05	(760-5)	**Development of Highly Stable Solid Phase Reagent Strips for the Detection of Magnesium Hardness** BALAJI TATINENI, Industrial Test Systems, Ashley Calhoun, Ivars Jaunakais
3:25	(760-6)	**Manganese Speciation in Drinking Water** WILLIAM HARTLEY, Liverpool John Moores University, Philip Riby, Derek Clucas
3:45	(760-7)	**Real-Time Electrochemical Detection of Arsenic** HM THUSHANI M SIRIWARDHANE, Wayne State University, Parastoo Hashemi
4:05	(760-8)	**Covalent Modification of Carbon Fiber Microelectrodes (CFMs) for Selective Voltammetric Detection of Trace Metals** YUANYUAN YANG, Wayne State University, Ahmad A Ibrahim, Jennifer L Stockdill, Parastoo Hashemi

ORAL SESSIONS **Session 770**

Nanotechnology: Spectroscopy, Microscopy, and Imaging

Monday Afternoon, Room S502b

Lucas B Thompson, Gettysburg College, Presiding

1:30	(770-1)	**Study of Charge-Dependent Efflux Function of Multidrug Membrane Transporters in Single Live Cells** LAUREN M BROWNING, Old Dominion University, Kerry J Lee, Prakash D Nallathamby, Pavan Cherukuri, Epifanio Perez, X Nancy Xu
1:50	(770-2)	**Characterization of the Effects of Biomolecular Surface Structures on the Properties of Peptide-Capped Nanoparticles** MARC R KNECHT, University of Miami, Dennis B Pacardo, Ryan Coppage, Beverly D Briggs, Joseph M Slocik, Rajesh R Naik
2:10	(770-3)	**Optimizing the Efficiency of Plasmonic Based Molecular Sensors by Controlling the Surface Ligand Chemistry** GAYATRIBAHEN K JOSHI, Indiana University - Purdue University Indianapolis, Karl Blodgett, Rajesh Sardar
2:30	(770-4)	**Superhydrophobic Surfaces with High Stability and Varying Degree of Nanostructure Regularity** SIMON LARSEN, Technical University of Denmark, Emil Sogaard, Nis Andersen, Rafael J Taboryski
2:50		**Recess**
3:05	(770-5)	**Exposure of Gold Nanoparticles to Wood Frogs** LUCAS B THOMPSON, Gettysburg College, Andrea J Sitton, Gerardo L F Carfagno, Peter P Fong
3:25	(770-6)	**Self Assembly Behavior of Polystyrene Nanoparticles in High Ionic Strength Media at Various Interfaces: In Situ Study Based on Stimulated Emission Depletion Microscopy** BHANU NEUPANE, North Carolina State University, Gufeng Wang
3:45	(770-7)	**Solvent-Induced Manipulation of Ultra-Small CdSe Nanocrystals Core Electronic Energy** RAJESH SARDAR, Indiana University - Purdue University Indianapolis, Katie N Lawrence
4:05	(770-8)	**Ultrasensitive Assays for Study of Nanotoxicity and Nanomedicine** X NANCY XU, Old Dominion University, Lauren M Browning, Kerry J Lee, Prakash D Nallathamby

ORAL SESSIONS **Session 780**

Neurochemical Applications of Electrochemistry

Monday Afternoon, Room S505A

Lindsay Walton, University of North Carolina at Chapel Hill, Presiding

1:30	(780-1)	**Modified Voltammetric Waveform for Robust In Vivo Histamine Detection** SRIMAL A SAMARANAYAKE, Wayne State University, Kevin M Wood, Parastoo Hashemi
1:50	(780-2)	**Thin Composite Films for Selective Voltammetric Neurotransmitter Measurements** RICHARD F VREELAND, University of Arizona, Christopher W Atcherley, Levi B Lazarus, Michael L Heien
2:10	(780-3)	**Chemical Analysis Using Sub-Micron Carbon-Fiber Microelectrodes Etched with a Microwave-Generated Plasma** KATE L PARENT, University of Arizona, Christopher W Atcherley, Michael L Heien
2:30	(780-4)	**Withdrawn**
2:50		**Recess**
3:05	(780-5)	**Localized Flow Measurements Using Microfabricated Electrochemical Sensors** LINDSAY WALTON, University of North Carolina at Chapel Hill, Martin Edwards, Gregory McCarty, R Mark Wightman
3:25	(780-6)	**Direct Measurement of Diffusion of Neurotransmitters in the Brain Using Fast-Scan Controlled-Adsorption Voltammetry** CHRISTOPHER W ATCHERLEY, University of Arizona, Kevin M Wood, Nicholas D Laude, Kate I Parent, Parastoo Hashemi, Michael L Heien
3:45	(780-7)	**Comparison of Novel Metal and Novel Carbon Based Electrodes for Use in Online Microfluidic Neurochemical Detectors for Microdialysis** TONGHATHAI PHAIRATANA, Imperial College London, Martyn G Boutelle

ORAL SESSIONS **Session 790**

Separation Sciences: General Interest, Food Science and Fuels, Energy and Petrochemical

Monday Afternoon, Room S504bc

Mary Ellen McNally, EI DuPont de Nemours and Company, Presiding

1:30	(790-1)	**Deep Eutectic Solvents for Lignocellulosic Biomass Processing** GANESH DEGAM, South Dakota State University, Douglas Raynie
1:50	(790-2)	**Thermodynamic Studies of Retention on a Lauryl Acrylate Porous Polymer Monolith** BRADY W IBA, Trinity University, Si Ying Li, Monette N Cardona, Charlisa R Daniels, Michelle M Bushey
2:10	(790-3)	**Supercritical Carbon Dioxide Extraction of Essential Oil from Chrysothamnus Nauseosus (Rabbit Brush) and Rhus Aromatica (Skunk Brush)** JOHN KIRATU, South Dakota State University, Douglas Raynie
2:30	(790-4)	**A New Universal Detector for Chromatography: Refractive Index-based Detection Using Microring Resonator Arrays for Gradient Separations** JAMES H WADE, University of Illinois at Urbana-Champaign, Ryan C Bailey
2:50		**Recess**
3:05	(790-5)	**The Science Behind a New Generation of SFC Stationary Phases** JACOB N FAIRCHILD, Waters Corporation, Darryl W Brousmiche, Michael F Morris, Luke T Nye, Cheryl A Boissel, Jason F Hill
3:25	(790-6)	**Investigating Triple Detection Combined with Ultra Performance Convergence Chromatography for Profiling of Natural Products** PAULA HONG, Waters Corporation, Patricia R McConville
3:45	(790-7)	**Supercritical Carbon Dioxide Bleaching of Distiller's Dried Grain with Solubles** GEORGE GACHUMI, South Dakota State University, Douglas Raynie
4:05	(790-8)	**Evaluation of Hydrogen Delivered by Gas Generator as Carrier Gas Instead of Helium for GCMS Analysis: Application to Water and Sludge Analysis** DAVID BENANOU, Veolia Environment Research & Innovation, Ana Pereira, Fabienne Palge, Valérie Ingrand

POSTER SESSION **Session 800**

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ACS DAC Poster Session

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(800-1 P) **Development of Paper-Based Colorimetric Assays for Metal Ions Using Gold Nanoparticles** CONNOR J NEUVILLE, Creighton University, Kalani A Parker, Jennifer L Lambrecht, Asia A Inagaki, Erin M Gross

(800-2 P) **Investigation of Carbon Paste Microelectrodes for Electrochemiluminescent Detection of Biogenic Amines on a Microfluidic Chip** EMILY R LOWRY, Creighton University, Leah V Schaffer, Erin M Gross, John B Wydallis, Meghan M Mensack, Rachel M Feeny, Charles S Henry

(800-3 P) **Development of a Carbon Paste Microfluidic Biosensor with Electrogenerated Chemiluminescence Detection** ERIN M GROSS, Creighton University, Laura R Anderson, Nicholas R Stukel, Sarah E Roszhart, Sarah R Wirth, John B Wydallis, Meghan M Mensack, Charles S Henry

(800-4 P) **Analysis of Human Scent for Potential Forensic Use** DOUGLAS BEUSSMAN, St. Olaf College, Bifan Chen

(800-5 P) **Tetrahymena Thermophila Proteomics Using MALDI-TOF/TOF Mass Spectrometry** DOUGLAS BEUSSMAN, St. Olaf College, Paul Benz

(800-6 P) **Characterization of Protein Dynamics and Conformational Heterogeneity with Linear and 2D Infrared Spectroscopy** JAMES SPEARMAN, Indiana University

(800-7 P) **Synthesis and Characterization of Multifunctional Polymeric Nanoparticles for Targeted Sonodynamic Therapy** FEI YAN, North Carolina Central University, Michelle S Smith, Yam Shrestha

(800-8 P) **Hydrophilic Interaction HPLC Determination of Creatinine, Urate and Ascorbic Acid in Bovine Milk and Orange Juice** YUEGANG ZUO, University of Massachusetts Dartmouth, Ruiting Zuo, Si Zhou, Yiwei Deng

(800-9 P) **Promoting Undergraduate STEM Education at a HBCU through Research Experience** SAYO O FAKAYODE, North Carolina A&T State University, Cameron Abel, David A Pollard, Abdul K Mohammed, Olasumbo M Adeyeye, Mamudu Yakubu

(800-10 P) **Pure Amorphous Silica Derived from Calcined Acid-Leached Rice Husk** LANNY SAPEI, University of Surabaya, Andika Pramudita, Livia B Widjaja

(800-11 P) **Analysis of 1-Methylcyclopropene Absorption in Bananas and Cardboard Packaging, and Its Effect on Banana Volatile Profiles** RACHEL J PARISE, East Stroudsburg University, Christopher M Stangl, Richard S Kelly

POSTER SESSION **Session 810**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Gas Chromatography

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(810-1 P) **Gas Chromatography** OMOLARA AGBEKE BAMGBOYE, Lagos State University, Hassan O Adebesin, Modinat O Osundiya

(810-2 P) **Method Development for Analysis of Pesticides Using Nano Stationary Phase (NSP) Columns Equipped with GC-ECD and GC-MS** KRISHNAT NAIKWADI, J & K Scientific Inc., John MacInnis, Kelsey Aucoin, Allen Britten

(810-3 P) **Implementation of Analysis Method by Simdis Haig Temperature Technique, to Characterize the Extra-Heavy Crude Oil from Wells Located in the Gulf of Mexico** PATRICIA ESTRADA ORTIZ, Instituto Mexicano del Petroleo

(810-4 P) **Analysis for Organochlorine Pesticides and Polycyclic Aromatic Hydrocarbons Residues in Water Samples of Lagos Lagoon, Nigeria** ADEYEMI D KEHINDE, University of Lagos

(810-5 P) **Carrier Gas Selection for Capillary GC: There is More Than One Right Answer** LEE N POLITE, Axion Analytical Labs, Inc., Jackson H O'Donnell, Nikolas L Polite, Dennis L Polite, Mary Beth Smith

(810-6 P) **Development of a New Gas Chromatographic Column Set for the Analysis of Blood Alcohol Concentration** AMANDA RIGDON, Restek Corporation, Kristi Sellers, Jarl Snider, Rick Morehead, Gary Stidsen

(810-7 P) **Application of Ionic Liquid GC Columns for the Analysis of Aromatic Mixtures** RICHARD E PAULS, Axion Analytical Labs, Inc., Mary Beth Smith, Robert W McCoy, Lee N Polite

(810-8 P) **Near Real-Time Process Control Using Micro Gas Chromatography - Fast, On-Line Ethane, Propane and Butane Analysis** REMKO VAN LOON, Agilent Technologies, Coen Duvekot

(810-9 P) **New Developments in Fast Portable Micro Gas Chromatography – Application Benefits by Using Column Temperature Programming** REMKO VAN LOON, Agilent Technologies, Coen Duvekot

(810-10 P) **Characterizing the Performance of Surface Modifications that Enhance Sensitivity, Reliability, Reproducibility and Accuracy of Analytical Instruments** GARY BARONE, SilcoTek Corporation, David Smith

(810-11 P) **CH4 Balance Argon Study Using a Micro GC** ASHLEY ELLIS, Matheson Gas

(810-12 P) **Two-Dimensional Gas Chromatography with Microfabricated Components** WILLIAM R COLLIN, University Of Michigan, Dibyadeep Paul, Amy Bondy, Katsuo Kurabayashi, Edward T Zellers

(810-13 P) **Recent Advances to Ensure Simple, Leak Free GC Column Connections** KENNETH G LYNAM, Agilent Technologies, Lindy Miller, Ponna Pa

(810-14 P) **A Polymer Microcolumn for Gas Separation** JACQUELINE M RANKIN, University of Illinois at Urbana-Champaign, Kenneth Suslick

(810-15 P) **Large Volume Injection of Polycyclic Aromatic Hydrocarbons** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, Doug Meece

(810-16 P) **Application of Evolving Factor Analysis and Alternating Least Squares to Overlapping Peaks from a Microsensor-Array GC Detector** JONATHAN BRYANT-GENEVIER, University of Michigan, Sun K Kim, Kee Scholten, Edward T Zellers

(810-17 P) **A Universal Vacuum Ultraviolet Detector for Gas Chromatography** DOUG D CARLTON, University of Texas at Arlington, Ian Sawicki, Kevin A Schug, Harold McNair, Phillip Walsh, Dale Harrison

(810-18 P) **Advances in a New Methodology for Sampling and Analyzing Elemental Sulfur in Natural Gas** ALEJANDRO JOSE GONZALEZ, DCG Partnership

(810-19 P) **Freedom from the Flame: Using an Argon Ionization Detector instead of a Flame Ionization Detector** MATTHEW MONAGLE, Advanced Industrial Chemistry LLC

(810-20 P) **Saving Helium on the 5890, 6890 and 7890 GC** MATTHEW MONAGLE, Advanced Industrial Chemistry LLC

(810-21 P) **Total Hydrocarbon Analysis as a Second Channel on Your GC** MATTHEW MONAGLE, Advanced Industrial Chemistry LLC

(810-22 P) **Simultaneous Analysis of ppb and % Level Components by Headspace GC and Peak Splitting** JEFF PARISH, Shimadzu Scientific Instruments

(810-23 P) **Measuring Contents of Impurities in Biogas: Siloxanes and Ammonia** JANNEKE VAN WIJK, VSL, Adriaan van der Veen, Jianrong Li, Katarina Hafner

POSTER SESSION **Session 820**

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High-Throughput Chemical Analysis

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(820-1 P) **Amperometric Folic Acid Quantification Using a Supramolecular Tetraruthenated Nickel Porphyrin μ-oxo Matrix Modified Electrode Associated to Batch Injection Analysis** LUÍS MARCOS C FERREIRA, Universidade de Sao Paulo, Mauro Sérgio F Santos, Lucio Angnes

(820-2 P) **Accurate Determination of Moisture Content of Soft Contact Lenses by Near-Infrared (NIR) Spectroscopy** KEITH FREEL, Metrohm USA, Hari Narayanan

(820-3 P) **Superficially Porous Particles: Considerations of Particle Size** TIMOTHY J LANGLOIS, Advanced Materials Technology, Barry Edward Boyes, Joseph J DeStefano, Robert S Bichlmeir, William L Johnson, Stephanie Schuster

(820-4 P) **Method Development for the Analysis of Impurities in Silicon Tetrachloride Using Gas Chromatography** SRIKANTH KAVURI, Matheson

(820-5 P) **Solid Matrix Assisted LDI (SMALDI) - MS and UTLC Using Tunable Nanoporous Silica** RESHMA SINGH, University of Alberta, Zhen Wang, Abebaw B Jemere, Michael Brett, Jed Harrison

(820-6 P) **New Applications and Fine Tuning Tips for a GC Inert Flow Path** KENNETH G LYNAM, Agilent Technologies, Lindy Miller

(820-7 P) **A Broadly Tunable Surface Plasmon-Coupled Wavelength Filter for Wide-Field Visible and Near Infrared Hyperspectral Imaging** AJAYKUMAR ZALAVADIA, Cleveland State University, John F Turner

(820-8 P) **High Throughput Method Development** WILLIAM HEDGEPETH, Shimadzu Scientific Instruments, Kenichiro Tanaka

(820-9 P) **Proposal of a Lab-on-a-CD for Immunoassay Using Nonmechanical Pump and Valves** YASUTO ARISUE, University of Hyogo

(820-10 P) **Rapid Stability Analyses of Concentrated Dispersions** JONATHAN DENIS, Formulaction Inc, Mathias Fleury, Gérard Meunier

POSTER SESSION — Session 830

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Magnetic Resonance

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(830-1 P) **Droplet Size Distribution, NMR VS Microscopy** GABRIELA SEKOSAN, Bunge NA, Tiffanie West, Kathryn Reihel

(830-2 P) **High-Performance Quantitative 1H-NMR is an Important Tool for the Certification of Organic Certified Reference Materials (CRM), Providing Traceability and Low Measurement Uncertainty** ALEX RUECK, Sigma-Aldrich, Christine Hellriegel, Robert Sauermoser, Juerg Wuethrich, Michael Weber

(830-3 P) **Probing Micelle Structure and Aggregation in Bile Salts** NICHOLAS J DOYLE, Bucknell University, Thomas H Mann, David Rovnyak, Timothy G Strein

(830-4 P) **Analysis of Ethyl Acetoacetate Using HMBC, A 2-D NMR Technique** JAMES MCSALLY, St. John Fisher College

(830-5 P) **MR Spectroscopic Imaging Detects Brain Lithium Changes After a Missed Dose** SUBBARAYA RAMAPRASAD, University of Nebraska Medical Center, Lindsay Rice, Melvin Lyon

POSTER SESSION — Session 840

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Pharmaceutical: LC and Data Analysis

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(840-1 P) **High Purification Performance Using Column Length Scale-Up to Increase Automated Preparative HPLC Purification Capacity, Resolution, and Throughput** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Marc Jacob, Michael D McGinley

(840-2 P) **Validated Selective HPLC-DAD Method for the Simultaneous Determination of Diclofenac Sodium and Lidocaine Hydrochloride in Presence of Four of Their Related Substances and Potential Impurities** TAREK S BELAL, University of Alexandria, Mona Bedair, Azza Gazy, Karin M Guirguis

(840-3 P) **Evolution of UHPLC Column and Instrument Designs** RICHARD A HENRY, Supelco/Sigma-Aldrich, David S Bell, Hugh M Cramer, Gaurang Parmar

(840-4 P) **Determination of Lithium in Pharmaceutical Products by HPLC Analysis with CAD Detection** LULU DAI, Genentech, Kelly Zhang, Larry Wigman, Nik Chetwyn

(840-5 P) **Pharmaceutical Applications of Sub-2-µm, Solid-Core Particle Columns** KENNETH BERTHELETTE, Waters Corporation, Mia Summers, Kenneth J Fountain

(840-6 P) **Greater Loading Capacity and Resolution for Improved Process-Scale Peptide Purification** RENO T NGUYEN, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, Melissa Wilcox

(840-7 P) **High-Purity Purification Method for Eicosapentaenoic Acid Ethyl Ester (EPA-EE) by a Newly Developed Reversed-Phase Packing Materials** TAKASHI SATO, YMC Co., Ltd., Ernest J Sobkow, Noriko Shoji, Takatomo Takai, Naohiro Kuriyama

(840-8 P) **Determination of Enantiomerization Energy Barriers of Penta-Helicene Analogs by Dynamic Liquid Chromatography** MILAN K DISSANAYAKE, University of Texas at Arlington, Zachary S Breitbach, Peter Kroll, Sachin Handa, LeGrande Slaughter, Daniel W Armstrong

(840-9 P) **Packaging Selection for Stability Studies and Bulk Storage of Hygroscopic Compounds** YANING MA, Pfizer, Brent Maranzano, Yong Zhou, Elise Clement, Laura Douglass, Robert Timpano, Julie Lippke, George Reid

(840-10 P) **Peak Deconvolution Analysis with Photo Diode Array Detector** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Yasuhiro Mito, Minori Nakashima, Yusuke Osaka, Junichi Masuda, Okiyuki Kunihiro, Masami Tomita

(840-11 P) **Efficient Methods Development Combing Simultaneous Mass and UV Detection with Flexible Software for Mobile Phase Formulation** PAULA HONG, Waters Corporation, Patricia R McConville

(840-12 P) **Optimized Gradient and Isocratic Semi-Preparative HPLC Purification Profiles of Large and Small Molecules Using Semi-Automated Continuous Serial Large Volume Fraction Collection From High Capacity Column Loading** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Tony Pleva, Greg Robinson, Michael D McGinley

(840-13 P) **HPLC Method Development and Validation for USP Norfloxacin Monograph Modernization** ASHRAF Z KHAN, US Pharmacopeia, Shane Tan, Natalia Kouznetsova

(840-14 P) **A New Saccharide Analysis Column for Charged Aerosol Detector** NAOYA NAKAJIMA, Showa Denko KK, Melissa Turcotte, Ronald Benson

(840-15 P) **Rapid Purification of a Diverse Range of Peptides Using Flash Chromatography with ELSD and UV Detection and a New Wide-Pore C18 Media** MELISSA WILCOX, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, Chitra Sundararajan

(840-16 P) **Fast and Efficient Isolation of Botanical Ingredients Using Automated Flash Chromatography** MELISSA WILCOX, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, James Neal-Kababick, Paula Brown

(840-17 P) **Comparative Evaluation of Automated Flash Chromatography and Preparative HPLC for Bench-Scale Purification of a Broad Range of Sample Types** MELISSA WILCOX, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, Chitra Sundararajan

(840-18 P) **Simultaneous Determination of In-Vitro Release Profile of PB-1301 (a Drug Candidate) and a Controlling Excipient in Capsule Formulation by HPLC with Dual Wavelength Detection** WEI CAO, Prinbury Biopharm Co., Ltd, Rui He, Yun Tian, David Zhao, Paul Fan, Luke Wang, Eric W Tsai

(840-19 P) **Exploring the Selectivity and Performance of a New Extra Selectivity/ Extended Stability Cyano Phase for Polar and Non-Polar Analytes in UHPLC/HPLC Method Development** ALAN P MCKEOWN, Advanced Chromatography Technologies Ltd, Geoffrey Faden

(840-20 P) **Using Selectivity Data to Demonstrate a Simple but Powerful Solid Core UHPLC/HPLC Method Development Platform** ALAN P MCKEOWN, Advanced Chromatography Technologies Ltd, Geoffrey Faden

(840-21 P) **Exploring the Selectivity and Performance of a New Extended pH Range Stable Solid Core UHPLC/HPLC Column Family with SuperC18 and SuperPhenylHexyl Bonded Phases** ALAN P MCKEOWN, Advanced Chromatography Technologies Ltd, Geoffrey Faden

POSTER SESSION **Session 850**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Pharmaceutical: LC, Separation Sciences, Sensors and Data Analysis

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(850-1 P) **Scale-Up Determination of Column Diameter and Load Capacity for Automated HPLC Purification Without Sacrificing Performance or Productivity** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Michael D McGinley, Marc Jacob

(850-2 P) **Analysis of Phospholipids in Natural Samples by Normal Phase HPLC and Corona Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian N Acworth, David Thomas, Qi Zhang

(850-3 P) **Analysis of Polyphenols in Bark Extract of Stryphnodendron Adstringens (Mart.) Coville (Fabaceae) by 1D and 2D Liquid Chromatography** CRISTINA D VIANNA-SOARES, University of Minnesota, Andre M Nascimento, Rachel O Castilho, Peter W Carr

(850-4 P) **Efficient and Cost-Effective Method for Analysis and Purification of Enantiomers Using a New Chiral Stationary Phases Consisting of Polysaccharide Derivatives** TAKASHI SATO, YMC Co., Ltd., Ernest J Sobkow, Noriko Shoji, Takatomo Takai, Naohiro Kuriyama

(850-5 P) **A High Capacity 150Å Reversed-Phase Silica Gel for the Purification of Oligonucleotides** RENO T NGUYEN, Grace Discovery Sciences, Mark Jacyno, Joe Bystron, Melissa Wilcox

(850-6 P) **Enantiomeric Separation of Chiral Phosphates and Sulfonates Using Barium Complexed Cyclofructan Stationary Phases** ZACHARY S BREITBACH, The University of Texas at Arlington, Jonathan Smuts, Daniel W Armstrong

(850-7 P) **Exploring Unique Chemically Modified Carbohydrate Based Chiral Stationary Phases to Improve Chiral Separations** MATTHEW PRZYBYCIEL, ES Industries, David Kohler

(850-8 P) **Taste Masking Optimization of an Active Principle Using Taste Assessment by Electronic Tongue Instrument** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marion Bonnefille, Herve Lechat, Fatma Ayouni, Valerie Vabre

(850-9 P) **Extending the Linear Dynamic Range of Photo Diode Array Detector** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Yasuhiro Mito, Minori Nakashima, Yusuke Osaka, Junichi Masuda, Okiyuki Kunihiro, Masami Tomita

(850-10 P) **Synthesis and Applications of Novel Sulfopropyl ether U-cyclodextrins Polymers as Chiral Selectors** FEIFEI JIA, Tianjin University, Li Youxin, Bao J James

(850-11 P) ✦ **Chromatographic Methodologies Applied in the Purification of Bioactive Molecules in the Venom of Tarantula Spiders** RAFAEL SUTTI, Faculdade de Ciencias Medicas da Santa Casa de Sao Paulo, Thomaz Silva, Stephen Hyslop, Pedro Junior

(850-12 P) **ATR-FTIR Spectroscopic Imaging and Modeling of Drug Release from Swelling Tablets** JAMES A KIMBER, Imperial College London, Sergei G Kazarian, Frantisek Stepanek

(850-13 P) **Employing Design of Experiments (DoE) to Evaluate the Robustness of an Automated Content Uniformity Method for the Triple Fixed Dose Combination Tablets** IRENA MAKSIMOVIC, Bristol-Myers Squibb, Dongsheng Bu, David K Lloyd

(850-14 P) **Isolation, Identification, and Determination of Designer Anabolic Steroids Commonly Found in Dietary Supplements** SARAH E VOELKER, U.S. Food and Drug Administration, Forensic Chemistry Center, Mary B Jones, Lisa M Lorenz, Travis M Falconer, Jonathan J Litzau

(850-15 P) **Application of Unique Stationary Phases for Effective RPLC Method Development** THOMAS J WAEGHE, MAC-MOD Analytical, Carl L Zimmerman, Geoffrey Faden

✦ **Pittcon 2014 welcomes the Congresso Analtica 2013 Poster Award recipient. The award provides travel arrangements to Pittcon 2014. Rafael Sutti, Faculdade de Ciencias Medicas da Santa Casa de Sao Paulo**

POSTER SESSION **Session 860**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Undergraduate Students Only Poster Session

Monday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(860-1 P) **Probing Adsorption of Molecular Dyes to ZnO Nanoparticles Using Second Harmonic Generation Spectroscopy** AMANI AL-NOSSIFF, Ball State University, Kevin Shane, Chris Nelson, Mahamud Subir

(860-2 P) **Determination of Removal Efficiency of Organic Pollutants by Magnetic Particles Using Surface Selective Laser Spectroscopy** CORY A DIEMLER, Ball State University, Amani Al-Nossiff, Mahamud Subir

(860-3 P) **Correlating Enzymatic Turnover with Post-translational Modification of Cysteine Dioxygenase** ANDREW G ROTH, Calvin College, David E Benson, Taylor R Hegg

(860-4 P) **Separation and Chemometric Analysis of FAMEs in Biodiesel Blends** MARIEL E FLOOD, College of the Holy Cross, Mary P Connolly, Amber M Hupp

(860-5 P) **Classification of Feedstock Source in Biodiesel-Diesel Blends** MARY P CONNOLLY, College of the Holy Cross, Mariel E Flood, Amber M Hupp

(860-6 P) **Toward the Development of a Portable Device for the Analytical Characterization of Whiskey Samples** HILLARY ANDALUZ AGUILAR, Elmira College, Jared S Baker

(860-7 P) **Employing Capillary Electrophoresis as a Characterization Tool for the Post-Synthetic Treatment of Acetic Acid-Derived Carbon Nanoparticles** MORGAN J KRAMER, Elmira College, Jared S Baker

(860-8 P) **Systematic Investigation of Benthic Macroinvertebrates as Biomonitors for Petroleum-Hydrocarbon Pollution** TYLER MYERS, Elmira College, Jared S Baker

(860-9 P) **Characterizing and Quantifying Binding Interactions of Photoactive Cr(III) Diimine Systems with DNA** WILLIAM D NETTERVILLE, Furman University, Margaret A Caulkins, Morgan M Sprinkle, Noel A Kane-Maguire, Wheeler K Sandra, John F Wheeler

(860-10 P) **Investigation of the DNA Interaction of Novel Photoactive Diimine Complexes of Cr(III) Using LC-MS** FREDERICK D DAVID, Furman University, Andrew G Kantor, Noel A Kane-Maguire, Sandra K Wheeler, John F Wheeler

(860-11 P) **Analysis of Cr(III)–Based DNA Photocleavage Agents Using CGE, PCR and Gel Electrophoresis** YASMÍN R ALVAREZ-GARCÍA, Furman University, Sarah M Duff, Xing Wei, Christopher D Stachurski, Kane-Maguire A Noel, Sandra K Wheeler, John F Wheeler

(860-12 P) **Characterization and Uptake Studies of Polycationic Biocides in Multipurpose Contact Lens Solution Using Ultra Performance Liquid Chromatography and Mass Spectrometry** XING WEI, Furman University, Vikram N Samant, Frederick D David, Jonathan M Wheeler, Brandon L Thompson, Kenneth S Phillips, Sandra K Wheeler, John F Wheeler

(860-13 P) **Optical Detection of pH with Gold Nanorod-Infused Hydrogels** LUCAS B THOMPSON, Gettysburg College, Andrea J Sitton

(860-14 P) **Quantifying the Partitioning of Hydrophobic Solutes into the Surfactant Bilayer on Gold Nanoparticles** LUCAS B THOMPSON, Gettysburg College, Ida M DiMucci, Bryan V Stokes-Cawley

(860-15 P) **Electrodeposition of Nanoparticles at Nano-Liquid/Liquid Interfaces** GARRETT HOEPKER, University of Illinois at Urbana-Champaign, Mei Shen, Joaquin Rodriguez-Lopez

(860-16 P) **Study of Organic Redox Couples for Flow Batteries Under High Mass-Transfer Conditions Using Microelectrodes** TIMOTHY T LICHTENSTEIN, University of Illinois at Urbana-Champaign, Charles Diesendruck, Nagarjuna Gavvalapalli, Jeffrey S Moore, Joaquin Rodriguez-Lopez

(860-17 P) **Wetting C18–Modified Nanoporous Silica Particles with β-Cyclodextrin** BINBIN LIN, University of Iowa, Angie S Morris, M Lei Geng

(860-18 P) **Fate of Haloacetic Acids in Bulk Sodium Hypochlorite Solutions** JOHN W DECKER, University of Memphis, Christina M Henson, Gary L Emmert, Paul S Simone

(860-19 P) **Rapid, On-Site Analysis of Trihalomethanes and Haloacetic Acids in Drinking Water Using Standard Addition and a Portable Kit Automated by Flow Injection Analysis** ROBYN A SNOW, University of Memphis, Aaron W Brown, Thomas E Watts, Paul S Simone, Gary L Emmert

(860-20 P) **Monitoring Chemical Methylation of Peptides with LC-MS/MS and Microchip Electrophoresis** KRISTINA HERRERA, Murray State University, R Daniel Johnson

(860-21 P) **Bioinformatic Analysis of SELEX-Derived High-Throughput Sequencing Data** JAMIE A SHALLCROSS, Oberlin College, Rebecca Whelan

(860-22 P) **Capillary Electrophoresis-Based Selection of Nucleic Acid Aptamers for Ovarian Cancer Biomarker HE4** RACHEL EATON, Oberlin College, Brian Uhm, Christina Perez-Tineo, Rebecca Whelan

(860-23 P) **First Principles Study of CO2 Reduction on Cu/M Bimetallic Surfaces** ALYSSA M SHERRY, The Ohio State University, Anne Co, Aravind Asthagiri

(860-24 P) **Ambient Ionization Mass Spectrometry for Simultaneous Detection of Organic and Inorganic Components of Gunshot Residue (GSR) and Explosives** JENNIFER SPEER, The University of Tampa, Brian Sanchez, Hilary Brown, Kenyon Evans-Nguyen

(860-25 P) **A Mass Spectrometer for Elemental Analysis Based on Fieldable Technologies** HILARY BROWN, The University of Tampa, Jennifer Speer, Kenyon Evans-Nguyen, John F Gerling

(860-26 P) **Effect of pH on Physical and Chemical Properties of Undecylenic and Undecanoic Amino Acid Based Surfactants** FERESHTEH BILLIOT, Texas A&M University, Eugene Billiot, Kevin Morris, Jonathan Turner, Mareila Vasquez, Mark Olson

(860-27 P) **Micro Raman Ink Layer Mapping Applied to Questioned Document Examination** GARY H NAISBITT, Utah Valley University, Andy V Pham, Amelia B Wilde, Dara Kosanke

(860-28 P) **Synthesis, Characterization and Application of Gold Nanoparticles as Colorimetric Probe for Melamine Detection in Milk Products and Pet Foods** SEID ADEM, Washburn University, Teresa Chui, Keith Wagers

(860-29 P) **One-Step Solvent-Free Synthesis and Grafting of Diazonium Ions onto Electrode Surfaces** GARRHETT G VIA, Wittenberg University, Benjamin P Hagen, Kristin K Cline

(860-30 P) **Determining the Weight Percent of Dye in Peeps** MIRANDA S SCARBOROUGH, Maryville University, Thomas Spudich

(860-31 P) **Construction and Characterization of a Micro-Fluorescence Spectrometer** MIRANDA S SCARBOROUGH, Maryville University, Ethan J Vaughan, Thomas Spudich

(860-32 P) **The Development and Characterization of a Tactical Light Emission System** THOMAS SPUDICH, Maryville University, Jeremy D Weter, Ethan J Vaughan, Myles Jerrett

(860-33 P) **The Development and Characterization of a Micro-Vis Spectrophotometer with Wireless Communication Connection** JEREMY D WETER, Maryville University, Matthew T Baker, Ethan J Vaughan, Thomas Spudich

(860-34 P) **Preconcentration and Detection of Breast Cancer Metastasis Biomarkers Using Molecular Beacons** JOSEPH WIDMER, Kalamazoo College, Erik Guetschow, Will Black, Amy Ong, Jennifer R Furchak

(860-35 P) **Multiplex Detection of Metastatic Breast Tissue Biomarkers by Fluorescence Spectroscopy** JAKOB HILLENBERG, Kalamazoo College, Erik Guetschow, Will Black, Jennifer R Furchak

(860-36 P) **Optimization of Dye Sensitized Solar Cells** EDGAR CRESPO, Saint Xavier University

(860-37 P) **Characterizating the Surface Topography of Carboxylic Acid/Alcohol Self-Assembled Monolayers on Gold Electrodes** FRANK N YOUMBI, Saint Francis University, Rose A Clark

(860-38 P) **Synthesis and FTIR Analysis of Coordination Complexes of 2,3-Butadione with Cu(II) and Co(II)** CHELSIE BINDA, Seton Hill University, Holli Gonder, Mia Gunawan

(860-39 P) **The Structural Characterization of Polyurethane Precursors: Methylenedianiline Trimer and Tetramers** TIFFANY M ONIFER, Waynesburg University, Sarah M Stow, Jay G Forsythe, David M Hercules, John A McLean

(860-40 P) **An Inexpensive Raman Spectrometer Built for Undergraduate Laboratory Applications** GABRIELLE BRUZDA, Seton Hill University, Diane Miller, Douglas Koebler

(860-41 P) **Study of the Degradation of Organic Dyes from the Madder Plant Using Ultraviolet-Visible Spectroscopy** AMY N CARLSON, Seton Hill University, Demetra A Czegan

(860-42 P) **Biodegradable Nanofiber Scaffolds for Bone Tissue Engineering** FAIZA SAID FILFIL, St. John Fisher College, Patrizia Smith, Stephen Boyes

(860-43 P) **Substituent Effects on the Dipole Moments of (2,3,4)-Aminonicotinic Acid and (2,3,4)-Hydroxybenzyl Alcohol Using the Solvatochromic Method** JAVIER E GONZALEZ, Seton Hill University, Diane Miller

(860-44 P) **Rapid Analytical Method for Analysis of Arsenic Leached to Environment from Wood Treatment Materials** JU CHOU, Florida Gulf Coast University, Astrid Vega, Christian French, Matthew Smith, Joannie Moreno

(860-45 P) **Quantifying Naphazoline Hydrochloride and Pheniramine Maleate in Ophthalmic Solution Using HPLC** LAURA NICE, Westminster College, Sarah Kennedy

(860-46 P) **X-Ray Diffraction Analysis of Lutetium Oxyorthosilicate (LSO) Produced Using a Microwave-Assisted Hydrothermal Method** ALLISON M RICE, Westminster College, Peter Smith, Hannah Anderson

(860-47 P) **Determination of Biogenic Amines in Local Red Wines as Dansyl Derivatives by High-Performance Liquid Chromatography with Fluorimetric Detection** JULIE RICE, Westminster College, Helen M Boylan

(860-48 P) **Optical and Thermal Analysis of a Highly Purified L-Phenylalanine Ionic Liquid Comprising the Bis (Pentafluoroethanesulfonyl) Imide Anion** SAMANTHA LANE, St. John Fisher College, Nicole Savage, Lyia Morris, Irene Kimaru

(860-49 P) **Analysis by X-Ray Diffraction Supports Microwave-Assisted Hydrothermal Synthesis of Yttrium Barium Copper Oxide** HALEY GABOR, Westminster College

(860-50 P) **The Determination of Iron Metal in Water Samples Using Linear Sweep Voltammetry and Flame Atomic Absorption Spectroscopy** BRETT T BURRELL, Westminster College

(860-51 P) **Analysis of Disperse Orange 1 Using Flash Photolysis** KELSEY E SQUELCH, Westminster College

(860-52 P) **Developing an Assay for Vinylphenol Reductase from Brettanomyces Bruxellensis** NICK REINTHALER, Westminster College

(860-53 P) **Determination of Manganese by Linear Sweep Voltammetry Using Screen-Printed Electrodes** PAUL J DINGFELDER, Westminster College, Larry Miller

(860-54 P) **Determination of Additional Plasmid Varitey by Biochemical Techniques** ALEXANDRIA K SCHNARRENBERGER, Westminster College, Sarah Kennedy

(860-55 P) **Determination of G6PD Purification Protocol Using Biochemical Techniques** SARAH A STEFAN, Westminster College, Sarah Kennedy

(860-56 P) **GC/MS Comparison of Lavindin Grosso Oil Obtained by Steam Distillation and SFE** SUSAN S MARINE, Miami University Middletown, Lisa M Zona, Claudia N Worley

(860-57 P) **Integration of Microfluidics into Analytical Chemistry Instrumental Analysis Laboratory: Microchip Electrophoresis with Electrochemical Detection for Quantitation of Nitrite in Cured Meat Samples** JEFF BAUMAN, University of Kansas, Dulan Gunasekara, Joseph M Siegel, Andrew Holtzen, Michelle Bonebright-Carter, Xian Hu, Jakki Stevens, Travis Witte, Michael A Johnson, Susan M Lunte

(860-58 P) **Use of Experimental Design to Minimize Coprecipitation of Barium and Strontium from Produced Water from Marcellus Shale** DANIELLE MURTAGH, Westminster College, Helen M Boylan

TUESDAY, MARCH 4, 2014
MORNING

AWARDS **Session 870**

Pittsburgh Analytical Chemistry Award
arranged by Annette S Wilson, University of Pittsburgh

Tuesday Morning, Room S401bc

Annette S Wilson, University of Pittsburgh, Presiding

8:30		**Introductory Remarks - Annette S Wilson**
8:35		**Presentation of the 2014 Pittsburgh Analytical Chemistry Award to Richard M Crooks, The University of Texas at Austin, by Heather L Juzwa, Chair, Society for Analytical Chemists of Pittsburgh**
8:40	(870-1)	**Fundamentals and Applications of Bipolar Electrodes** RICHARD M CROOKS, The University of Texas at Austin, Kyle N Knust, Robbyn K Anand, Ulrich Tallarek, Dzmitry Hlushkou
9:15	(870-2)	**Detection of Short-Lived Electrode Reaction Intermediates with the Scanning Electrochemical Microscope – Sn(+3) and Others** ALLEN J BARD, University of Texas at Austin, Jinho Chang, Fahe Cao
9:50	(870-3)	**Autonomous Bio/chemical Analytical Microsystems for Space Science: Development of the O/OREOS Nanosatellite and Results from Orbit** ANTONIO J RICCO, NASA Ames Research Center, Pascale Ehrenfreund, Dave Squires, Wayne Nicholson, Richard Quinn, Andrew Mattioda, Amanda Cook, Nathan Bramall, Chris Kitts
10:25		**Recess**
10:40	(870-4)	**New Ways to Measure Density** GEORGE M WHITESIDES, Harvard University
11:15	(870-5)	**A Chemist's Approach to Nanofabrication: Towards a "Desktop Fab"** CHAD A MIRKIN, Northwestern University

AWARDS **Session 880**

The Coblentz Society/ABB - Bomem-Michelson Award
arranged by Michael 'Micky' L Myrick, University of South Carolina

Tuesday Morning, Room S402a

Michael 'Micky' L Myrick, University of South Carolina, Presiding

8:30		**Introductory Remarks - Michael 'Micky' L Myrick**
8:35		**Presentation of the 2014 Coblentz Society/ABB - Bomem-Michelson Award to Yukirho Ozaki, Kwsansei Gakuin University, by Michael 'Micky' L Myrick, University of South Carolina**
8:40	(880-1)	**New Development of Far-Ultraviolet Spectroscopy in Solids and Liquids** YUKIHIRO OZAKI, Kwansei Gakuin University
9:15	(880-2)	**Variable-Temperature and Polarization FT-IR/FT-NIR Spectroscopic Imaging of Polymers** HEINZ W SIESLER, University of Duisburg-Essen
9:50	(880-3)	**Vibrational Circular Dichoism Microsampling of Fibrils and Tissues** LAURENCE A NAFIE, Syracuse University
10:25		**Recess**
10:40	(880-4)	**Sampling for Success with Raman Spectroscopy** IAN R LEWIS, Kaiser Optical Systems, Inc., Joe Slater, Jim Tedesco, David J Strachan, Maryann Cuellar, Sean Gilliam, Pat Wiegand, Ron Fairchild
11:15	(880-5)	**Analysis of Molecular Orientation in a Poly-3-Alkylthiophene Thin Film Using Infrared p-MAIRS Spectrometry** TAKESHI HASEGAWA, Kyoto University, Nobutaka Shioya, Takafumi Shimoaka

SYMPOSIUM **Session 890**

ACS DAC: Advances In Our Understanding of Complex Aerosols at the Individual Particle Level
arranged by Kimberly A Prather, University of California, San Diego and Vicki Grassian, University of Iowa

Tuesday Morning, Room S401a

Kimberly A Prather, University of California, San Diego, Presiding
Vicki Grassian, University of Iowa, Presiding

8:30		**Introductory Remarks - Kimberly A Prather and Vicki Grassian**
8:35	(890-1)	**Challenges in Measuring the Chemical Complexity of Individual Atmospheric Particles** KIMBERLY A PRATHER, University of California, San Diego
9:10	(890-2)	**Heterogeneous Reactivity of Mineral Dust and Sea Spray Aerosol Particles Using Micro-\Raman Spectroscopy and Other Single Particle Methods** VICKI GRASSIAN, University of Iowa
9:45	(890-3)	**Probing Phase Transitions within Individual Particles** ALLAN BERTRAM, University of British Columbia, Yuan You, Renbaum-Wolff Lindsay, Mackenzie Smith, Scot Martin
10:20		**Recess**
10:35	(890-4)	**Chemical Microscopy of Individual Submicrometer Particles** ALEXEI V TIVANSKI, University of Iowa
11:10	(890-5)	**Single Particle Variability in Heterogeneous Reaction Kinetics as Determined by X-Ray Microscopy and Mass Spectrometry** TIMOTHY BERTRAM, University of California, San Diego, Olivia Ryder, Kimberly A Prather, Andrew Ault

SYMPOSIUM **Session 900**

Advanced Surface and Materials Analysis by XPS, Spectroscopic Ellipsometry, Nano- and ToF-SIMS, RBS, and Helium Ion Microscopy - The Power of These Techniques Individually and Combined
arranged by Matthew R Linford, Brigham Young University

Tuesday Morning, Room S402b

Matthew R Linford, Brigham Young University, Presiding

8:30		**Introductory Remarks - Matthew R Linford**
8:35	(900-1)	**Application of Combined X-ray Photoelectron Spectroscopy (XPS) and Processing Capabilities in Surface Characterization of Novel Catalysis, Nanostructured, and Battery Electrode Surface Films** MARK H ENGELHARD, Pacific Northwest National Laboratory, Donald R Baer, Wu Xu, Scott A Lea, Suntharampillia Thevuthasan
9:10	(900-2)	**Rutherford Backscattering and Helium Ion Microscopy as Powerful Probes for Both In-Depth and High Resolution Surface Characterization of Materials and Thin Films** VAITHIYALINGAM SHUTTHANANDAN, Pacific Northwest National Laboratory
9:45	(900-3)	**Material Characterization by Spectroscopic Ellipsometry: Exploiting the Optical Response of Matter** NIKOLAS PODRAZA, University of Toledo
10:20		**Recess**
10:35	(900-4)	**Secondary Ion Mass Spectrometry: From Depth Profiling to Nanoscale Chemical Imaging** ZIHUA ZHU, Pacific Northwest National Laboratory
11:10	(900-5)	**The Blind Men and the Elephant as Metaphor for the Multi-Technique Analysis of Surfaces and Materials** MATTHEW R LINFORD, Brigham Young University

SYMPOSIUM **Session 910**

Analysis of Microbiome Contributions to the Human Biomarker Metabolome -
arranged by Joachim Dieter Pleil, US EPA and Wolfram Miekisch, Medical University Rostock

Tuesday Morning, Room S404a

Joachim Dieter Pleil, US EPA, Presiding

8:30		**Introductory Remarks - Joachim Dieter Pleil and Wolfram Miekisch**
8:35	(910-1)	**The Airway Microbiome in Cigarette Smoking Induced Chronic Obstructive Pulmonary Disease (COPD)** MATTHEW C WOLFGANG, University of North Carolina at Chapel Hill
9:10	(910-2)	**Real-Time Gas Analysis as Powerful Tool to Study the Volatile Metabolome** JENS HERBIG, IONICON Analytik, Rene Gutmann, Klaus Winkler, Markus Luchner, Gerald Striedner

webcast sessions

9:45	(910-3)	**A Critical Review on the Comparison of Volatiles in Breath, Urine, Blood, Milk, Saliva, Skin and a Comparison of Volatiles in Stool from Healthy and Diseased Human Volunteers** NORMAN M RATCLIFFE, University of the West of England
10:20		**Recess**
10:35	(910-4)	**Rapid (<30 sec.) Detection of Bacterial Pathogens Using Breath** JANE E HILL, Dartmouth College, Heather D Bean, Jaime Jimenez, Jiangjiang Zhu
11:10	(910-5)	**Contributions to the Human Exposome from Inhalation and Ingestion** JONATHAN BEAUCHAMP, Fraunhofer IVV, Andrea Buettner, Maria Wagenstaller, Frauke Kirsch

SYMPOSIUM **Session 920**

Applications of Live Cell RNA Detection

arranged by Chad A Mirkin, Northwestern University and David Giljohann, AuraSense LLC

Tuesday Morning, Room S405b

David Giljohann, AuraSense LLC, Presiding

8:30		**Introductory Remarks - Chad A Mirkin and David Giljohann**
8:35	(920-1)	**Live Cell RNA Expression Detection in Single Cells** DON WELDON, EMD Millipore, Grace Johnston, Yuko Williams, Alex Ko
9:10	(920-2)	**Detection of Circulating Tumor Cells Using NanoFlare Sensors** DAVID GILJOHANN, AuraSense LLC, Tiffany Halo
9:45	(920-3)	**Studying Tumor Cell Heterogeneity and Cancer Stem Cell Subpopulations** MARY JC HENDRIX, Lurie Children's Research Center, Gina T Kirsammer, Elisabeth A Seftor, Katharine M Hardy, Richard EB Seftor, Don Weldon
10:20		**Recess**
10:35	(920-4)	**Cancer Stem Cell Isolation Using Nanoparticle Based mRNA Detection** STEVE MCCLELLAN, USA Mitchell Cancer Institute, Jaroslav Slamecka, Hollis De Laney, Alex Ketchum, Lee Thompson, Rodney Rocconi, Michael Finan, Laurie Owen
11:10	(920-5)	**Advanced Molecular Probes for Intracellular mRNA Monitoring** WEIHONG TAN, University of Florida

SYMPOSIUM **Session 930**

Design and Application of Smart Materials for Chemical Sensing and Analysis -

arranged by Joel M Harris, University of Utah

Tuesday Morning, Room S404bc

Joel M Harris, University of Utah, Presiding

8:30		**Introductory Remarks - Joel M Harris**
8:35	(930-1)	**Chemical Sensing Platforms Based on Tailored Nanoporous Xerogels** FRANK V BRIGHT, University at Buffalo - SUNY
9:10	(930-2)	**Responsive 2D Crystalline Colloidal Array Materials** SANFORD A ASHER, University of Pittsburgh, Jian-Tao Zhang, Luling Wang
9:45	(930-3)	**Fluorescent and Photoacoustic Based Nanosensors for In Vitro and In Vivo Chemical Analysis** RAOUL KOPELMAN, University of Michigan
10:20		**Recess**
10:35	(930-4)	**Electrospun Fiber-Modified Nitric Oxide-Releasing Glucose Biosensors: Improving Tissue Integration and Analytical Performance** MARK SCHOENFISCH, University of North Carolina at Chapel Hill
11:10	(930-5)	**Particles Designed for 105 -fold Preconcentration and Confocal Raman Microscopy Detection in Femtoliter Volumes** JOEL M HARRIS, University of Utah, Jay P Kitt, Christopher Hardcastle, Jonathan Schaefer

SYMPOSIUM **Session 940**

Imaging Mass Spectrometry of Biological Tissues and Cell Cultures

arranged by Amanda B Hummon, University of Notre Dame

Tuesday Morning, Room S404d

Amanda B Hummon, University of Notre Dame, Presiding

8:30		**Introductory Remarks - Amanda B Hummon**
8:35	(940-1)	**Desorption Electrospray Ionization Mass Spectrometry Imaging of Biological Tissues and Cell Cultures** ROBERT G COOKS, Purdue University, Christina Ferreira, Alan Jarmusch, Valentina Pirro
9:10	(940-2)	**MALDI Mass Spectral Imaging and Profiling of Signaling Molecules in Biological Tissues** LINGJUN LI, University of Wisconsin-Madison, Chuanzi Ouyang, Bingming Chen, Hui Ye, Erin Gemperline, Zichuan Zhang, Shan Jiang
9:45	(940-3)	**High-Resolution Imaging of the Cholesterol and Sphingolipid Distribution in the Plasma Membrane with Secondary Ion Mass Spectrometry** MARY L KRAFT, University of Illinois at Urbana-Champaign
10:20		**Recess**
10:35	(940-4)	**Silver Assisted LDI for High Spatial Resolution Imaging MS of Olefins from Thin Tissue Sections: Application to Atherosclerosis** PIERRE CHAURAND, University of Montreal
11:10	(940-5)	**Imaging Mass Spectrometry of 3D Cell Cultures** AMANDA B HUMMON, University of Notre Dame, Haohang Li, Eric Weaver, Xin Liu, Dorothy Ahlf

SYMPOSIUM **Session 950**

Integrated Microfluidics

arranged by R Scott Martin, Saint Louis University

Tuesday Morning, Room S405a

R Scott Martin, Saint Louis University, Presiding

8:30		**Introductory Remarks - R Scott Martin**
8:35	(950-1)	**Integrated Microfluidic Devices for Studying Adhesion and Aging of Individual Bacteria** STEPHEN C JACOBSON, Indiana University, Seth M Madren, Joshua D Baker, David T Kysela, Yves V Brun
9:10	(950-2)	**Micro-Chromatin Immunocapture (μChIC): A Platform for Automated Detection of Protein-Nucleic Acid Interactions in Small Cell Samples** RYAN C BAILEY, University of Illinois at Urbana-Champaign, Joshua D Tice, Mallika Modak, Jeong Heon Lee, Tamas Ordog
9:45	(950-3)	**3D-Printed Microfluidic Devices: Initial Results, Thoughts, and Potential** DANA SPENCE, Michigan State University, Sarah Y Lockwood, Jayda Erkal, Chengpeng Chen, Bethany Gross
10:20		**Recess**
10:35	(950-4)	**Microfluidic Paper-based Analytical Devices for Personal Exposure Assessment** CHARLES S HENRY, Colorado State University
11:10	(950-5)	**Polystyrene-Based Microfluidic Devices with Integrated Electrodes for Monitoring Cellular Systems** R SCOTT MARTIN, Saint Louis University

SYMPOSIUM **Session 960**

JAIMA: The State-of-the-Art Technologies that Support Safety and Security in Future (I)

arranged by Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Morning, Room S505b

Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding
Takeshi Kawamoto, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding

8:30		**Introductory Remarks - Shigehiko Hattori**
8:35	(960-1)	**Terahertz Technology for Safety and Security in Daily Life** MASANORI HANGYO, Osaka University
9:10	(960-2)	**MeV Gamma Imaging by Fully Reconstructing Compton Scattering** ATSUSHI TAKADA, Kyoto University, Toru Tanimori
9:45	(960-3)	**Development of Scintillation Materials having Nanometer-Scale Structure** MASANORI KOSHIMIZU, Tohoku University
10:20		**Recess**
10:35	(960-4)	**Automated Nuclear Emulsion Readout System and Its Applications** TOSHIYUKI NAKANO, Nagoya University
11:10	(960-5)	**New MS Methods for New Problems...and Old Ones** ROBERT B CODY, JEOL USA, Inc.

SYMPOSIUM **Session 970**

Liquid Chromatography in Microfluidics: A Workhorse Tool is Going Small Scale -

arranged by Adam T Woolley, Brigham Young University

Tuesday Morning, Room S503a

Adam T Woolley, Brigham Young University, Presiding

8:30		**Introductory Remarks - Adam T Woolley**
8:35	(970-1)	**Solid-Phase Extraction of Proteins and Nucleic Acids: Programmable Microfluidics Using Molded Supports** STEVEN A SOPER, University of North Carolina
9:10	(970-2)	**Development of and Applications for a Ceramic Microfluidic UHPLC System** JAMES MURPHY, Waters Corporation, Steven Cohen
9:45	(970-3)	**Integrated Solid-Phase Extraction, Fluorescence Labeling, and Electrophoretic Separation in Microfluidic Systems** ADAM T WOOLLEY, Brigham Young University, Pamela N Nge, Jayson Pagaduan, Rui Yang, Mukul Sonker
10:20		**Recess**
10:35	(970-4)	**Electrochromatography on Monolith in Thermoplastic Microchip: A Robust and Easy-To-Use Technology** KARINE FAURE, Université Lyon 1, Gérard Crétier, Yoann Ladner, Josiane Saade
11:10	(970-5)	**Separation and Analysis of Proteins and Metabolites in Microchip Devices** JED HARRISON, University of Alberta

ORGANIZED CONTRIBUTED SESSIONS **Session 980**

SEAC: The First Student Session in Electroanalysis

arranged by Johna Leddy, University of Iowa and Stephen Maldonado, University of Michigan

Tuesday Morning, Room S503b

Johna Leddy, University of Iowa, Presiding

8:30	(980-1)	**Electron Transfer/Ion Transfer Mode of Scanning Electrochemical Microscopy (SECM): A New Tool for Imaging and Kinetic Studies** YIXIAN WANG, Biodesign Institute at Arizona State University
8:50	(980-2)	**Electrocatalyst Screening with Bipolar Electrochemistry** STEPHEN E FOSDICK, University of Texas at Austin, Richard M Crooks
9:10	(980-3)	**A Kinetic Evaluation of NADH Oxidation at Nitrogen-Doped Carbon Nanotubes and Detection of Dehydrogenase Turnover** JACOB M GORAN, University of Texas at Austin, Carlos A Favela, Keith Stevenson
9:30	(980-4)	**Application of Ion-Selective Electrodes Based on Fluorous Matrixes for Sensing of Environmental Contaminants** LI CHEN, United Science, Chunze Lai, Philippe Buhlmann, Jon Thompson
9:50		**Recess**
10:05	(980-5)	**Cyclic Voltammetry of Lanthanides at Boron-Doped Diamond Electrodes** KRYSTI L KNOCHE, University of Iowa, Johna Leddy
10:25	(980-6)	**In Situ Spectroelectrochemical Investigation of the Reactive Aqueous Electrodeposition of Crystalline III-V Semiconductor Thin Films** ELI FAHRENKRUG, University of Michigan, Stephen Maldonado
10:45	(980-7)	**Photoelectrochemistry Tools for Characterization of Emerging Solar Materials: GaAs Thin-Films Deposited by Close-Spaced Vapor Transport** ANDREW J RITENOUR, University of Oregon, Shannon W Boettcher, Jason W Boucher, Ann L Greenaway
11:05		**Open Discussion**

ORAL SESSIONS **Session 990**

Analysis of Bioagents and Explosives

Tuesday Morning, Room S501a

Hao Chen, Ohio University, Presiding

8:30	(990-1)	**Trace Chemical Profiling of Laboratory Grown and Naturally Cultivated Pathogens** ELIZABETH A LAPATOVICH, Virginia Commonwealth University, Cristina E Stanciu
8:50	(990-2)	**Chemical Profiling of Forensically Relevant Bacterial Threat Agents with Direct Analysis in Real-Time Mass Spectrometry (DART-MS)** MIKAELA ROMANELLI, Virginia Commonwealth University, Kristin Asal, Joseph Turner, Christopher Ehrhardt
9:10	(990-3)	**Measurements of Bioagents at Military Facilities by Using a Field Portable SERS Assay** WAYNE SMITH, Real-Time Analyzers, Inc., Hermes Huang, Stuart Farquharson
9:30	(990-4)	**Cell Surface Fatty Acid Methyl Ester (FAME) Analysis of Bacillus Spores** CRISTINA E STANCIU, Virginia Commonwealth University, Christopher Ehrhardt, Donald Jessup, Elizabeth A Lapatovich, Jessica Goss
9:50		**Recess**
10:05	(990-5)	**Cluster Analysis of Smokeless Powders and Classification by Discriminant Analysis** DANA-MARIE K DENNIS, University of Central Florida, Erin Waddell, Mary R Williams, Michael Sigman
10:25	(990-6)	**Chemical Profiling of Trichloroisocyanuric Acid (TCCA) Based Explosives for Forensic Attribution** ALICIA M ZIMMERMANN, Virginia Commonwealth University, Christopher Ehrhardt
10:45	(990-7)	**STARR: Shortwave-Infrared Targeted Agile Raman Robot for the Identification and Confirmation of Emplaced Explosives** NATHANIEL R GOMER, ChemImage Corporation, Charles W Gardner
11:05	(990-8)	**Auto-sampling Explosives Trace Detection Systems Using Mass Spectrometry** YUICHIRO HASHIMOTO, Hitachi, Ltd., Hisashi Nagano, Yasuaki Takada, Hideo Kashima, Masakazu Sugaya, Koichi Terada, Minoru Sakairi

ORAL SESSIONS **Session 1000**

Environmental Analysis of Non-Metals in Water (Half Session)

Tuesday Morning, Room S501bc

Tyler Davis, West Virginia University, Presiding

8:30	(1000-1)	**Environmental Forensics of Wastewater Samples for Determination of Emerging Contaminants** ADRIENNE BROCKMAN, Pennsylvania State University, Frank Dorman, Jack Cochran, Michelle Misselwitz
8:50	(1000-2)	**Microengineered Tools for Cell-Based Detection of Environmental Water Toxicants** SARA TALAEI, Ecole Polytechnique Federal de Lausanne, Yusaku Fujii, Frederic Truffer, Sher Ahmed, Peter D van der Wal, Nico F de Rooij
9:10	(1000-3)	**Determination of Total Nitrogen and Phosphorus in Environmental Waters by Using Alkaline Persulfate Digestion and Ion Chromatography with Suppressed Conductivity Detection** BRIAN DE BORBA, Thermo Fisher Scientific, Kassandra Oates, Jeffrey Rohrer, Richard Jack
9:30	(1000-4)	**Determination of UV Filter and Biocide Compounds in Surface Water Samples Using High Throughout Solid Phase Microextraction System Coupled with Liquid Chromatography–Tandem Mass Spectrometry** FARDIN AHMADI, University of Waterloo, Janusz Pawliszyn, Chris Sparham

ORAL SESSIONS **Session 1010**

Food and Consumer Products Quality: Analysis Enhancements (Half Session)

Tuesday Morning, Room S501d

William J Long, Agilent Technologies, Inc., Presiding

8:30	(1010-1)	**Novel NMR Technology to Assess Food Quality and Authenticity** MARKUS NORBERT LINK, Bruker BioSpin GmbH, Manfred Spraul, Hartmut Schaefer, Birk Schuetz, Fang Fang
8:50	(1010-2)	**Development and Characterization of Sugar-Based Deep Eutectics** SAMPSON ASARE, South Dakota State University
9:10	(1010-3)	**Single Reaction Chamber Microwave Digestion Studies and Optimized Performance of High Organic Matrices for ICP-OES/ICP-MS Analysis** DAVID GUNN, Milestone
9:30	(1010-4)	**Development and Validation of Dietary Supplement Procedures to Satisfy Section 21CFR111.320 cGMPs** J PRESTON, Phenomenex, Zeshan Aqeel, Steve Baugh, Sky Countryman, Petra Erlandson

ORAL SESSIONS **Session 1020**

Imaging: Advances and Applications (Half Session)

Tuesday Morning, Room S502a

John P Auses, University of Pittsburgh, Presiding

8:30	(1020-1)	**PHOTON for Super-Resolution Imaging of Efflux Functions of Single Membrane Transporters in Single Live Cells** X NANCY XU, Old Dominion University, Kerry J Lee, Tao Huang, Prakash D Nallathamby, Feng Ding
8:50	(1020-2)	**Molecular Imaging of Bacterial Biofilms by Confocal Raman Microscopy** RACHEL N MASYUKO, University Of Notre Dame, Sarah Melton, Jennifer Morrell-Falvey, Mitchel Doktycz, Paul W Bohn
9:10	(1020-3)	**Multiplexed Imaging of Inelastically Scattered Light Using a Digital Micro-Mirror Device** RAJESH MORAMPUDI, Cleveland State University, John F Turner
9:30	(1020-4)	**Radial and Linear Concentration Gradients in Cellulose Paper** VEEREN DEWOOLKARVC, Virginia Commonwealth University, Maryanne Collinson, Kari Norquist

ORAL SESSIONS **Session 1030**

Liquid Chromatography/Mass Spectrometry: Bioanalytical and 'Omics Applications

Tuesday Morning, Room S502b

Richard A Henry, Consultant, Presiding

8:30	(1030-1)	**Ultra-Sensitive Simultaneous LC-MS/MS Quantification of Human Insulin, Glargine, Lispro, Aspart, Detemir and Glulisine in Human Plasma Using 2D-LC and a Novel High Efficiency Column** ERIN CHAMBERS, Waters Corporation, Kenneth J Fountain
8:50	(1030-2)	**Trace Level Neuropeptide Detection by Capillary LC-MS** YING ZHOU, University of Michigan, Robert Kennedy
9:10	(1030-3)	**96-Blade SPME Coating Evaluation for Bacterial Metabolomics Studies** FATEMEH MOUSAVI, University of Waterloo, Janusz Pawliszyn
9:30	(1030-4)	**Nano-LC-MS of Intact Proteins with High Efficiency and Good Repeatability Using Sub-0.5 µm Particles** ZHEN WU, Purdue University, Mary J Wirth
9:50		**Recess**
10:05	(1030-5)	**Utilization of Fluorous Maleimide in Separation and Identification of Thiol Metabolites** CAROLINE ESCH, Saint Louis University, James L Edwards
10:25	(1030-6)	**Bioanalysis of Teriparatide Using a Prototype 150 µm ID Micro-Fluidic Device** ERIN CHAMBERS, Waters Corporation, Mary E Lame, Kenneth J Fountain
10:45	(1030-7)	**100% Efficient, Millisecond ESI/LC/MS Sample Introduction and Analysis** DREW SAUTER, nanoLiter LLC
11:05	(1030-8)	**LC-MS of Glycans Derived from Glycoproteins and Nude Mouse Tissue Sections** YUNLI HU, Texas Tech University, Shiyue Zhou, Tarek Shihab, Sarah I Khalil, Calvin L Renteria, Yehia Mechref

ORAL SESSIONS **Session 1040**

Microfluidics: Bioanalytical

Tuesday Morning, Room S504a

Michelle Bushey, Trinity University, Presiding

8:30	(1040-1)	**Development of a Microfluidic Segmented Flow Based Viscosity Sensor** MICHAEL F DELAMARRE, University of Illinois at Chicago
8:50	(1040-2)	**Thin-Film Microfabricated Nanofluidic Arrays for Size-Selective Protein Fractionation** SURESH KUMAR, Brigham Young University, Jie Xuan, H Dennis Tolley, Milton L Lee, Aaron R Hawkins, Adam T Woolley
9:10	(1040-3)	**Chip-western Blotting for Multiplexed Operation** SHI JIN, University of Michigan, Robert Kennedy
9:30	(1040-4)	**Fluorescent Linear DNA Sequencing by Use of Shear Flow Stretching in Mass Produced Polymer Devices** PETER F ØSTERGAARD, DTU - Technical University of Denmark, Rodolphe Marie, Rafael J Taboryski
9:50		**Recess**
10:05	(1040-5)	**Integrating Microfabrication with Nanoscale Self-Assembly for Membrane Receptor-Based Biomimetic Sensors** CHRISTOPHER A BAKER, University of Arizona, Leonard K Bright, Craig A Aspinwall
10:25	(1040-6)	**On-Line Microdialysis-Microchip Electrophoresis with Electrochemical Detection for the Study of the L-DOPA Metabolic Pathway** RACHEL A SAYLOR, University of Kansas, Susan M Lunte
10:45	(1040-7)	**Optimization of a Method Using Microchip Electrophoresis with Electrochemical Detection for the Analysis of Reactive Nitrogen Species in Macrophage Cells** JOSEPH M SIEGEL, University of Kansas, Dulan B Gunasekara, Christopher T Culbertson, Susan M Lunte
11:05	(1040-8)	**Frequency Encoded Florescence for the Reduction of Optical Complexity in Microfluidic Devices** ADRIAN M SCHRELL, Florida State University, Michael G Roper

ORAL SESSIONS **Session 1050**

Pharmaceutical: LC

Tuesday Morning, Room S504bc

Elizabeth Harris, Mannkind Corporation, Presiding

8:30	(1050-1)	**Ion Chromatography Assays for Ions in Adenosine – Possible Replacement for Color-Based Assays** LIPIKA BASUMALLICK, Thermo Fisher Scientific, Jeffrey Rohrer
8:50	(1050-2)	**Determination of Morpholine in Linezolid by Ion Chromatography** YONGJING CHEN, Thermo Fisher Scientific, Brian De borba, Jeffrey Rohrer
9:10	(1050-3)	**A Platform HPLC Method for Pharmaceutical Counter Ion Analysis** XIAODONG LIU, Thermo Fisher Scientific, Mark Tracy, Christopher Pohl
9:30	(1050-4)	**Development of an Assay for Besylate in Amlodipine Besylate by Ion Chromatography and a Second Assay to Simultaneously Determine Amlodipine and Besylate by HPLC** BRIAN DE BORBA, Thermo Fisher Scientific, Jeffrey Rohrer
9:50		**Recess**
10:05	(1050-5)	**Identification and Quantification of 22 Common Anions in Pharmaceuticals in a Single Run Using HPIC with Suppressed Conductivity and Charge Detection** HUA YANG, Thermo Fisher Scientific, Linda Lopez
10:25	(1050-6)	**A Rapid Novel Gel Filtration Solution for Determining Protein Aggregation** MICHAEL D MCGINLEY, Phenomenex, Ismail Rustamov, Shengbin Zhang
10:45	(1050-7)	**Separation of Nucleotides by Hydrophilic Interaction Chromatography (HILIC) Using the FRULIC-N Column** ZACHARY S BREITBACH, The University of Texas at Arlington, Nilusha L Padivitage, Milan K Dissanayake, Daniel W Armstrong
11:05	(1050-8)	**Coupling Efficiency and Selectivity for Unparalleled Resolving Power to Meet Today's Chromatographic Challenges** LAWRENCE Y LOO, Phenomenex, Thuylinh Tran, Mike Chitty, Art Dixon, Ismail Rustamov, Stuart Kushon, Anna Carpenter

ORAL SESSIONS **Session 1060**

Raman SERS and Imaging

Tuesday Morning, Room S504d

Nathan Chaffin, Bayer MaterialScience LLC, Presiding

8:30	(1060-1)	**Surface-Enhanced Raman Correlation Spectroscopy** STEVEN ASIALA, University of Notre Dame, Zachary D Schultz
8:50	(1060-2)	**Fabrication and Optimization of Aptamer Conjugated Silver Dendrites for SERS Detection of the Pesticide Acetamiprid** SHINTARO PANG, University of Massachusetts Amherst, Lili He
9:10	(1060-3)	**Direct Measurement of Electric Fields Generated by Plasmonic Excitation** JAMES M MARR, University of Notre Dame, Zachary D Schultz
9:30	(1060-4)	**Ultra Low Cu2+ Ion Detection by 4-Mercaptobenzoic Acid Functionalized Silver Nanoparticles with SERS** NARAYANA MUDALIGE S SIRIMUTHU, University of Strathclyde, Samuel B Mabbott, David Thompson, Karen Faulds, Duncan Graham
9:50		Recess
10:05	(1060-5)	**Nanodendrite Structure as a Platform for SERS-Based Sensor** HOEIL CHUNG, Hanyang University, Saetbyeol Kim, Soyoung Yoo
10:25	(1060-6)	**Surface-Enhanced Raman Scattering of Biological Materials: A Performance Evaluation from Protein Detection to Cancer Diagnosis** MUSTAFA CULHA, Yeditepe University
10:45	(1060-7)	**A Non-Destructive Optical Method for the Simultaneous Determination of Physical and Chemical Properties of Biomaterials** JONATHAN R DAMSEL, Cleveland State University, John F Turner
11:05	(1060-8)	**Raman Polarization Spectroscopy and AOTF Chemical Imaging of Poly-L-lactide Bioimplants** VENKATA N K RAO BOBBA, Cleveland State University, John F Turner

ORAL SESSIONS — Session 1070

Sample Preparation: Environmental Water Analysis

Tuesday Morning, Room S505a

Chang Hsu, Florida State University, Presiding

8:30	(1070-1)	**Extraction of Ultra-Trace Level Concentrations of Organic Acids Using Fabric Phase Sorptive Extraction with HPLC-UV Analysis** ABUZAR KABIR, Florida International University, Rodolfo Mesa, Linda Maiben, Kenneth G Furton
8:50	(1070-2)	**New Method US EPA 625 with Solid Phase Extraction for Challenging Wastewaters** DAVID GALLAGHER, Horizon Technology, Michael Ebitson, Zoe Grosser
9:10	(1070-3)	**Ultraviolet Photoiniated On-Fiber Copolymerization of Ionic Liquid Sorbent Coatings for Headspace and Direct Immersion Solid-Phase Microextraction** TIEN D HO, The University of Toledo, Honglian Yu, William T Cole, Jared L Anderson
9:30	(1070-4)	**On-Line Preconcentration of Haloacetic Acids for Analysis by Post-Column Reaction-Ion Chromatography with Nicotinamide Fluorescence in Drinking Water** CHRISTINA M HENSON, The University of Memphis, Patricia Ranaivo, Gary L Emmert, Paul S Simone
9:50		Recess
10:05	(1070-5)	**A Simple Preconcentration Protocol for Semi-Automated Analysis of Total Trihalomethanes and Total Haloacetic Acids in Drinking Water** THOMAS E WATTS, University of Memphis, Yin Yee Choo, Paul S Simone, Gary L Emmert
10:25	(1070-6)	**Evaluation of Fiber/Water Partition Coefficient and Ultra Trace Analysis of Steroids Using Solid Phase Microextraction (SPME) with GC-MS-MS** SHILPI CHOPRA, Seton Hall University, Ramkumar Dhandapani, Nicholas H Snow
10:45	(1070-7)	**A Solid Phase Microextraction Coating Based on Ionic Liquid Sol–Gel Technique for Determination of Benzene, Toluene, Ethylbenzene and O-xylene in Water Samples Using Gas Chromatography Flame Ionization Detector** ALI SARAFRAZ YAZDI, Ferdowsi University of Mashhad
11:05	(1070-8)	**Thin-Film Microextraction Coupled to LC-ESI-MS/MS for Determination of Quaternary Ammonium Compounds in Water Samples** EZEL BOYACI, University of Waterloo, Janusz Pawliszyn, Chris Sparham

POSTER SESSION — Session 1080

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Agriculture

Tuesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1080-1 P)	**Nitrogen Determination in Soils and Plants by Flash Combustion Using Argon as Carrier Gas** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz, Walter Galotta
(1080-2 P)	**Characterization of Flavored Tobacco with GCxGC-TOFMS** ELIZABETH HUMSTON-FULMER, Leco Corporation, Joe Binkley, Jeff Patrick, David E Alonso
(1080-3 P)	**Determination of Rare Earth Elements in Tea Leaves by ICP-AES with Ultrasonic Aerosol Generator** FENG XU, Shimadzu (China) Co., Ltd.
(1080-4 P)	**Prediction of the Starch Content and Ethanol Yields of 44 Inbred Varieties of Sorghum Grain Using Near-Infrared (NIR) Spectroscopy** SHIH-FANG CHEN, University of Illinois, Junhui Li, Song Li, Vijay Singh, Patrick J Brown, Mary-Grace C Danao
(1080-5 P)	**Visible-Near Infrared Spectroscopy of Freeze Dried Chicken Filets at Varying Postmortem Times** SAMANTHA HAWKINS, USDA-ARS, Brian Bowker
(1080-6 P)	**Biodegradation of Polyathalia Longifolia Liter for Production of Value Added Product** HARSHANG V PANDYA, MG Science Institute, Prakruti R Kapadia, Mrugesh D Shukla, Vijaya R Nadagauda, Hyacinth N Highland
(1080-7 P)	**New Sorbent from Agro-Industrial Waste and Its Potential Use in 17 Beta-Estradiol and 17 Alpha-Ethynylestradiol Removal** SUZIMARA ROVANI, Federal University of Rio Grande do Sul (UFRGS), Andreia N Fernandes, Éder C Lima, Renato C Veses
(1080-8 P)	**Reduced Sample Preparation for Fumigants Residues Analysis in Fresh Food and Grains** DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero
(1080-9 P)	**Fast and Fully Automated Multi-Residue Pesticide Screening in Fruit / Vegetable Extracts Using a GC-Q/TOF** PHILIP L WYLIE, Agilent Technologies, Chris Sandy
(1080-10 P)	**Bioavailability of Metals in Some Selected Plants Grown on an Abandoned Coal Mine Overburden Using Energy Dispersive X-Ray** EDMUND OKORIE, Federal Polytechnic Idah, Joseph N Egila
(1080-11 P)	**Trace Analysis of Glycine and its Methylated Derivatives in Small Volume of Plant Fluids by Surface-Enhanced Raman Scattering with a Cylindrical SERS Substrate** HUNGCHEN EMILIE YEN, National Chung Hsing University, Pannerselvam Rajapandiyan, Jyisy Yang

POSTER SESSION — Session 1090

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Clinical Chemistry and Toxicology

Tuesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1090-1 P)	**Ultra-Fast Analysis of Metabolites in Serum in Under 3 Minutes Using Fast-GC/MS/MS** SHUICHI KAWANA, Shimadzu Corporation, Yukihiko Kudo, Haruhiko Miyagawa, Kenji Hara, Laura Chambers, Zhuangzhi "Max" Wang
(1090-2 P)	**Target and Non-target Analysis of Metabolites in Urine Using Scan/MRM and GC/MS/MS** SHUICHI KAWANA, Shimadzu Corporation, Kenichi Obayashi, Katsuhiro Nakagawa, Yuki Hasegawa, Seiji Yamaguchi, Laura Chambers, Zhuangzhi "Max" Wang
(1090-3 P)	**A Comparison of Sample Preparation Approaches for the LC/MS/MS Analysis of EtS and EtG in Urine** MIKE CHANG, Agilent Technologies, Derick Lucas, Trisa Robarge, Irina Diomaeva, Angelica Riemann
(1090-4 P)	**Multi Sensor System for Breath Analysis** MATTHIAS FEINDT, Hamburg University of Technology, Joern Frank, Hendrik Fischer, Andreas Behn, Helge Fielitz, Gerhard Matz
(1090-5 P)	**Pilot Clinical Trial of an Optode-Array-Based Point-of-Care Metabolic Tester Slide** MIKLOS GRATZL, Case Western Reserve University, Punkaj Ahuja, Jeffrey Ustin
(1090-6 P)	**Analysis of Blood Alcohol Content by Headspace** ZHUANGZHI "MAX" WANG, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Laura Chambers, Clifford M Taylor
(1090-7 P)	**Effects of Mulberry Leaves Extract and Jackfruit Leaves on Blood Glucose, Lipid Profile, Oxidative Stress and DNA Damage in STZ/NA-Induced Diabetic Rats** SAMY A ABDEL AZIM, Cairo University, Mohamed T Abdel Rahim, Moustafa A Said, Marwa A Abdeen
(1090-8 P)	**Quantitative Analysis of Opioids Using a Triple-Quadrupole GC/MS/MS** LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Zhuangzhi "Max" Wang, Clifford M Taylor
(1090-9 P)	**Matrix Specific Sample Preparation Strategies for Opioid Analysis** JONATHAN DANACEAU, Waters Corporation, Erin Chambers, Kenneth J Fountain
(1090-10 P)	**Analysis of Gabapentin and Pregabalin in Saliva by Ultra-High Performance Liquid Chromatography Tandem Mass Spectrometry** CONGYING GU, Veritas Laboratories, LLC, Jun He, Marion Lee, Patrick Rainey, Cynara Davis, Beth Bowen
(1090-11 P)	**An Evaluation of Biphenyl Chemistry to Aid in High-Throughput Bioanalytical LC-MS/MS Analyses** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Shun-Hsin Liang, Chris Denicola
(1090-12 P)	**Dried Spots Technique for Quantitative Determination of Pain Management Drugs in Human Oral Fluid Using Liquid Chromatography-Tandem Mass Spectrometry** JUN HE, Veritas Laboratories, LLC, Congying Gu, Patrick Rainey, Marion Lee, Beth Bowen, Cynara Davis
(1090-13 P)	**Analysis of Herbal Remedy Using Various Analytical Techniques to Identify Any Potential Toxic Compounds** HANG P NGUYEN, St. John Fisher College, Irene Kimaru
(1090-14 P)	**Simultaneous Determination of 17 Drugs of Abuse and Organophosphorus Pesticides in Human Blood by GPC/GC/MS** SUN QIAN, Shimadzu (China) Co., Ltd., Dong Hengtao
(1090-15 P)	**Quantitative Analysis of the Most Commonly Used Pain Medications in Urine Using a Reliable Sample Preparation Technique in Combination with an API 5000 LC-MS-MS** J PRESTON, Phenomenex, Shahana Huq, Seyed Sadjadi, Jeff Layne
(1090-16 P)	**Enhanced Resolution and Matrix Interference Reduction for the Analysis of Vitamin D Metabolites** CRAIG R AURAND, Supelco/Sigma-Aldrich, David S Bell, Hugh M Cramer

(1090-17 P) **Selectivity Enhancement of Anions by Kinetic Control Using Pulsed Chronopotentiometry with Asymmetric Cellulose Triacetate Membrane Electrode** JEREMY MEYERS, Northern Kentucky University, Kaitlin Cahill, Kebede L Gemene

(1090-18 P) **Determination of Clinically Relevant Compounds Using Isocratic HPLC and Electrochemical Detection with Boron Doped Diamond Electrode** BRUCE BAILEY, Thermo Fisher Scientific, Ian N Acworth, Marc Plante, Qi Zhang, David Thomas

POSTER SESSION **Session 1100**

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Food Science: Analytical Methods

Tuesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1100-1 P) **A Novel Method for Quantification of Aspartame Using Surface Enhanced Raman Spectroscopy** GÜLIZAR GÖRKEM, Hacettepe University, Akif G Bozkurt, Mehmet Söfôro lu, Ismail H Boyacı, Ugur Tamer

(1100-2 P) **A Novel Automated Liquid/Liquid Extraction Technique for the Determination of Caffeine in Coffee** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, Doug Meece

(1100-3 P) **Analysis of Caffeine and Taurine in Commercial Energy Beverages** JENNIFER MARTIN, St. John Fisher College, Kimberly Chichester

(1100-4 P) **Analysis of Emulsifiers in Foods by High Pressure Liquid Chromatography and Corona Charged Aerosol Detection** MARC PLANTE, Thermo Fisher Scientific, Bruce Bailey, Ian N Acworth, Qi Zhang, David Thomas

(1100-5 P) **Fast Analysis of β-ecdysone in Brazilian Ginseng (Pfaffia glomerata) Extracts by High-Performance Liquid Chromatography Using a Fused-Core Column** MAURICIO A ROSTAGNO, University of Campinas, Isabel CN Debien, Renata Vardanega, Gislaine N Faria, Gerardo F Barbero, M Angela A Meireles

(1100-6 P) **Ultrasound-Assisted Extraction of Curcuminoids from Curcuma Longa** MAURICIO A ROSTAGNO, University of Campinas, J Felipe Osorio-Tobón, Pedro IN Carvalho, M Angela A Meireles

(1100-7 P) **Fast Analysis of FAMEs Using Automated Sample Preparation and GC-FID** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marie-Laure Vicenty, Julien Boye, Marion Bonnefille

(1100-8 P) **Discrimination of Meat Species Using Raman Spectroscopy and Principal Component Analysis** REYHAN SELIN UYSAL, Hacettepe University

(1100-9 P) **Voltammetric Determination of Lactose** TSUNGHSUEH WU, University of Wisconsin-Platteville, Jennifer Yoder

(1100-10 P) **Determination of the Availability of Fluorinated Grease Proofing Agents Using in Vitro Gastrointestinal Digestion** WENDY YOUNG, FDA Center for Food Safety and Applied Nutrition, Gregory Noonan, William Roth, Timothy H Begley

(1100-11 P) **Analysis of Selected Xanthones in Mangosteen Pericarp Using Accelerated Solvent Extraction and Ultra High Performance Liquid Chromatography** QI ZHANG, Thermo Fisher Scientific, Ian N Acworth, Bruce Bailey, Marc Plante, David Thomas

(1100-12 P) **Chemical Tuning Method to Selective Enrichment of Vegetal Selenoproteins Using Synchrotron XANES Techniques** MANUEL VALIENTE, Universitat Autonoma de Barcelona, Beatriz Guerero, Mercè Llugany

(1100-13 P) **Volatile Flavor Markers of Different Rice Cultivar by DHS-GCxGC-TOFMS** DANIELA CAVAGNINO, DANI Instruments SpA, Alessandra Mantegazza, Antonella Siviero

(1100-14 P) **Benzene Contamination in Baby Food and Beverages by New Generation of Static Headspace Autosampler Coupled to Fast GC-TOFMS** DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero

(1100-15 P) **Fast Quantitative Analysis of Astaxanthin in Dietary Supplements Derived from Haematococcus Pluvailis by UPC2 – UV** JACQUELYN RUNCO, Waters Corporation

(1100-16 P) **The Study on the In Vivo Effect of Brassica Oleracea Capitata var. alba L. on the Pharmacokinetic Parameters of Levofloxacin in Male Albino Rats by HPLC** OLAYINKA T ASEKUN, University of Lagos, Chinenye Kalu, Grace Ukpo

POSTER SESSION **Session 1110**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

FTIR/Raman/NIR Applications

Tuesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1110-1 P) **Spectroelectrochemistry Using Polystyrene Microfluidic Devices** MATTHEW BAILEY, University of Notre Dame, Asmira Selimovic, Amber Pentecost, R Scott Martin, Zachary D Schultz

(1110-2 P) **Using Time Resolved FT-IR-ATR to Study Biofuel Diffusion in Flexible Coated Fabrics** JAMES M SLOAN, U.S. Army Research Laboratory

(1110-3 P) **Fourier Transform-Infrared Attestation of the Solid State Interaction Between Levofloxacin and Some Metal Ions** ADERONKE A ADEPOJU-BELLO, University of Lagos, Abiodun G Ayoola

(1110-4 P) **Surface-Enhanced Raman Spectroscopy Platforms for Studying Electrodeposition and Surface Chemistry of Nanostructured Semiconductors** JUNSI GU, University of Michigan, Stephen Maldonado

(1110-5 P) **Probing the Orientation of 2,3-Dichloro-5,8-dimethoxy-1,4-naphthoquinone on Gold Nano-rods by SERS** MARAIZU UKAEGBU, Howard University, Charles Hosten, Oladapo Bakare, Alberto Vivoni, Nkechi Enwerem

(1110-6 P) **Plasmon Enhancements Using Coherent Anti-Stokes Raman Scattering** KAREN A ANTONIO, University of Notre Dame, Lawrence O Itela, Zachary D Schultz

(1110-7 P) **The Role of Different Structural Motifs in the Photophysics of Second Generation Protein Stains Explaining the Feeble Quantum Yield of Epicocconone** SOUMIT CHATTERJEE, Macquarie University, Peter Karuso, Anindya Datta

(1110-8 P) **Direct Analysis of Pure Nitrous Oxide (N2O) Using "Infra Red" Analyzers** ANUJ KUMAR, Air Liquide, Janet Graehling

(1110-9 P) **Single Molecule Spectroscopy Studies of Polarity Gradients Prepared by Infusion-Withdrawal Dip-Coating** DIPAK GIRI, Kansas State University, Daniel A Higgins, Chelsea Hanks

(1110-10 P) **Single Molecule Counting in Nanopores** YAN HU, University of Iowa

(1110-11 P) **A New Combination of Raman and IMS Detection for the Fast Identification of Explosives** ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer, Hainer Wackerbarth

(1110-12 P) **Conformational Stability of Isocyanides from Temperature Dependent Infrared Spectra of Rare Gas Solutions, Structural Parameters and Ab Initio Calculations** BHUSHAN S DEODHAR, University of Missouri-Kansas City, James R Durig

(1110-13 P) **Precipitation from Crude Oil Studied with ATR-FTIR Spectroscopic Imaging** ANTON GABRIENKO, Imperial College London, Sergei G Kazarian

POSTER SESSION **Session 1120**

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New Products at Pittcon 2014

Tuesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1120-1 P) **Construction of a Novel Densitometer that Utilizes a Near-Infrared Laser System** SATORU TSUCHIKAWA, Nagoya University, Ryunosuke Kitamura

(1120-2 P) **Advances in Micro Gas Chromatography (GC) - Applying Temperature Programming in a Micro GC to Achieve Fast, Accurate, and On-Site Analysis of Fixed Gases and Light Hydrocarbons** DEBBIE HUTT, INFICON

(1120-3 P) **New SimDist Software and Applications** ZHUANGZHI "MAX" WANG, Shimadzu Scientific Instruments, Clifford M Taylor, Nicole M Lock, Laura Chambers, Richard R Whitney

(1120-4 P) **Withdrawn**

(1120-5 P) **Comparison of Performance of Innovative Nano Stationary Phase (NSP) and Conventional Stationary Phase GC Capillary Columns for Environmental Applications** KRISHNAT NAIKWADI, J & K Scientific Inc., John MacInnis, Allen Britten

(1120-6 P)	**Fast and Accurate Analysis of Refinery Gas using Micro GC with Column Temperature Programming** REMKO VAN LOON, Agilent Technologies
(1120-7 P)	**Thermogravimetry of Oil Samples with a New Photoionization Time-of-Flight Mass Spectrometer** ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer, Mohamad Saraji-Bozorgzad, Matthias Bente von Frowein, Ralf Zimmermann, Sven Ehlert
(1120-8 P)	**Performance Characteristics of Core-Shell U/HPLC Columns for the Rapid Separation of Peptides and Proteins** HILLEL BRANDES, Supelco/Sigma-Aldrich, David S Bell, Kevin Ray, Roy Eksteen
(1120-9 P)	**HPLC Method Development Guidelines Using Solid-Core Particle Technologies** GAURANG PARMAR, Supelco/Sigma-Aldrich, David S Bell, Richard A Henry, Carmen T Santasania, Wayne K Way, Hugh M Cramer
(1120-10 P)	**Adding Humidity to Trace Concentration Gas Standards** JAMES J MCKINLEY, Kin-Tek Laboratories
(1120-11 P)	**Micro-Mirror Array Device for Floating Image Manufactured by Synchrotron Radiation** TOMOHISA YAMANE, University of Hyogo, Satoshi Maekawa, Yuichi Utsumi, Akinobu Yamaguchi, Takao Fukuoka

POSTER SESSION **Session 1130**

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Physical Measurements

Tuesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1130-1 P)	**A Numerical Evaluation of Iterative Solvers for the Solution of Static Light Scattering Problems** HIROSUKE SUGASAWA, HORIBA, Ltd., Makoto Umezawa, Jeffrey Bodycomb
(1130-2 P)	**Real-Time SPR-Imaging of Adsorption of Single Nanoparticles to Different Surfaces** VLADIMIR M MIRSKY, Brandenburg University of Technology, Shavkat Nizamov
(1130-3 P)	**Withdrawn**
(1130-4 P)	**GAED Provides Activated Carbon Isotherms at any Temperature for any Compound** H GEORGE NOWICKI, PACS Inc., Henry Nowicki
(1130-5 P)	**Counting and Sizing Protein Aggregates Down to 0.15 Microns Using New Focused Light Beam Obscuration Technology** PATRICK OHAGAN, Particle Sizing Systems, David Nicoli, Kerry Hasapidis, Ian Herzberg
(1130-6 P)	**GEI Point Determination Thanks to Microrheology** CHRISTELLE TISSERAND, Formulaction, Roland Ramsch, Gérard Meunier, Giovanni Brambilla

TUESDAY, MARCH 4, 2014 AFTERNOON

AWARDS **Session 1140**

Pittsburgh Spectroscopy Award
arranged by Sanford A Asher, University of Pittsburgh

Tuesday Afternoon, Room S401bc

Sanford A Asher, University of Pittsburgh, Presiding

1:30		**Introductory Remarks - Sanford A Asher**
1:35		**Presentation of the 2014 Pittsburgh Spectroscopy Award to Geraldine L Richmond, University of Oregon, by Manuel R Miller, Chairman, Spectroscopy Society of Pittsburgh**
1:40	(1140-1)	**Line 'Em All Up: Macromolecular and Nanoparticle Assembly at Oil/Water Interfaces** GERALDINE L RICHMOND, University of Oregon
2:15	(1140-2)	**What Can a Retired Industrial Spectroscopist Do? Collaborate!** BRUCE CHASE, University of Delaware
2:50	(1140-3)	**Lipids (and Water) in Mixed Lipid Aggregates: Temperature Effects** SHARON L NEAL, University of Delaware
3:25		**Recess**
3:40	(1140-4)	**Enhancing Molecular Structural Information in Nonlinear Vibrational Spectroscopy** DENNIS K HORE, University of Victoria
4:15	(1140-5)	**Slip Flow at Chemical Interfaces** MARY J WIRTH, Purdue University

SYMPOSIUM **Session 1150**

Clinical Analysis: The Next Frontier in Mass Spectrometry
arranged by Timothy J Garrett, University of Florida

Tuesday Afternoon, Room S402a

Timothy J Garrett, University of Florida, Presiding

1:30		**Introductory Remarks - Timothy J Garrett**
1:35	(1150-1)	**Innovations in Mass Spectrometry for Clinical Analysis** RICHARD A YOST, University of Florida, Timothy J Garrett, Alan Rockwood
2:10	(1150-2)	**Bridging the Gap Between Nanospray and Clinical Analysis: New Approaches for Automated Proteomics** NATHAN YATES, University of Pittsburgh
2:45	(1150-3)	**Imaging Metabolites and Metabolic Pathways in Cancer** LIAM MCDONNELL, Leiden University Medical Center
3:20		**Recess**
3:35	(1150-4)	**MALDI-TOF in Clinical Microbiological Analysis** PREETI PANCHOLI, The Ohio State University Medical Center
4:10	(1150-5)	**Challenges of Newborn Screening: Past, Present and Future** CHERYL L GARGANTA, Tufts Medical Center

SYMPOSIUM **Session 1160**

Current Challenges and New Analytical Techniques in Doping Detection
arranged by Janusz Pawliszyn, University of Waterloo

Tuesday Afternoon, Room S402b

Janusz Pawliszyn, University of Waterloo, Presiding

1:30		**Introductory Remarks - Janusz Pawliszyn**
1:35	(1160-1)	**Ultrasensitive and Chiral Analysis of Performance Enhancing Drugs (PEDs): Stimulants and Steroids** DANIEL W ARMSTRONG, University of Texas at Arlington
2:10	(1160-2)	**Introduction of Solid Phase Microextraction as a Powerful Tool for High-Throughput Sample Preparation in Laboratory Analysis of Prohibited Substances** EZEL BOYACI, University of Waterloo, Krzysztof Gorynski, Angel Rodriguez-Lafuente, Barbara Bojko, Janusz Pawliszyn
2:45	(1160-3)	**Current State of Anti-Doping Analysis –Techniques, Trends and Challenges** VINOD NAIR, Sports Medicine Research and Testing Laboratory
3:20		**Recess**

3:35	(1160-4)	**What are the Challenges of Doping Control in Horses and How Latest Technologies Help to Fight Against the Battle** COLTON H F WONG, Texas A&M University
4:10	(1160-5)	**Direct Immersion Solid-Phase Microextraction as Bioanalytical Tool for Analysis of Human Saliva** VINCENT BESSONNEAU, University of Waterloo, Barbara Bojko, Janusz Pawliszyn

SYMPOSIUM **Session 1170**

Current Status and Trends in the Analysis and Quality Control of Small Molecules, Biologics and Bio-Similars

arranged by Arindam Roy, Novartis

Tuesday Afternoon, Room S401a

Arindam Roy, Novartis, Presiding

1:30		**Introductory Remarks - Arindam Roy**
1:35	(1170-1)	**Analytical QbD: Method Inception to Methods Transfer** ROSARIO LOBRUTTO, TEVA Pharmaceuticals
2:10	(1170-2)	**Current Practices of LC Method Development, Validation, Transfer and Impurity Analysis for Small Molecules** ARINDAM ROY, Novartis, Anthony Wilken, Chad Wieseler, Luis Collazo, Joseph Henry
2:45	(1170-3)	**UHPLC for Bioanalytical Analysis of Monoclonal Antibodies** DELL FARNAN, Genentech, A Member of the Roche Group
3:20		**Recess**
3:35	(1170-4)	**Analytical Strategies in Biosimilar Development** HANSJOERG TOLL, Sandoz Biopharmaceuticals
4:10	(1170-5)	**Characterization of Molecular Isoforms in Protein Therapeutics by Electrophoresis, Liquid Chromatography, and Mass Spectrometry** LI TAO, Bristol-Myers Squibb

SYMPOSIUM **Session 1180**

Engineered Antibody-Mimics with Increased Affinity and Selectivity

arranged by Radislav A Potyrailo, GE Global Research and Rajesh Naik, Air Force Research Laboratory

Tuesday Afternoon, Room S401d

Radislav A Potyrailo, GE Global Research, Presiding

1:30		Introductory Remarks - Radislav A Potyrailo and Rajesh Naik
1:35	(1180-1)	DNA Logic Circuits for Biomedical Applications WEIHONG TAN, University of Florida
2:10	(1180-2)	DNA Aptamer Generation by Genetic Alphabet Expansion ICHIRO HIRAO, RIKEN CLST
2:45	(1180-3)	Peptide-Based Biological Recognition Elements for Sensing Applications RAJESH NAIK, Air Force Research Laboratory
3:20		Recess
3:35	(1180-4)	Epitope Targeted Synthetic Protein Capture Agents JAMES HEATH, Caltech
4:10	(1180-5)	Selective and Reversible Biodetection in Complex Matrices – Synergistic Roles of Biology and Electronics RADISLAV A POTYRAILO, GE Global Research, Nandini Nagraj, Tony Murray, Zhexiong Tang, Li Zhu

SYMPOSIUM **Session 1190**

JAIMA: The State-of-the-Art Technologies that Support Safety and Security in Future (II)

arranged by Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA)

Tuesday Afternoon, Room S505b

Koichiro Matsuda, Japan Analytical Instruments Manufacturers' Association (JAIMA), Presiding
Masanori Hangyo, Osaka University, Presiding

1:30		**Introductory Remarks - Norio Teramae**
1:35	(1190-1)	**Analysis of Pesticides in Food Matrices Using a Triple-Quadrupole GC/MS/MS** LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Clifford M Taylor, Haruhiko Miyagawa
2:10	(1190-2)	**Introduction of the Latest Application of SEM/TEM to Material Sciences for Safety and Security** MAMI KONOMI, Hitachi High-Technologies Corporation, Syunya Watanabe, Yukari Dan, Yasushi Kuroda, Eiko Nakazawa, Hisayuki Takasu, Junzo Azuma
2:45	(1190-3)	**Microspectroscopy for Trace Analysis in Forensic Science** SERGEY MAMEDOV, Horiba Scientific
3:20		**Recess**
3:35	(1190-4)	**X-Ray Analytical Technologies for Nano Particle and Ensuring Safety and Security** KAZUKI ITO, Rigaku
4:10	(1190-5)	**Biochip Device Technology for Safety and Security** SAITO MASATO, Osaka University, Tamiya Eiichi

SYMPOSIUM **Session 1200**

Nanoscale Compounds for Biological Imaging and Bioanalytical Analysis

arranged by Stephane Petoud, CNRS

Tuesday Afternoon, Room S404a

Stephane Petoud, CNRS, Presiding

1:30		**Introductory Remarks - Stephane Petoud**
1:35	(1200-1)	**Imaging Using Porous Silicon-based Nanoparticles** MICHAEL J SAILOR, University of California San Diego
2:10	(1200-2)	**Applications of Carbon Nanotubes for Theranostics** ALEXANDER STAR, University of Pittsburgh
2:45	(1200-3)	**Ln3+ Based Nanoparticles and NIR Quantum Dots for Optical and Magnetic Bioimaging** FRANK CJM VAN VEGGEL, University of Victoria
3:20		**Recess**
3:35	(1200-4)	**Real-Time, In Situ Methods to Measure Kinetics of Cargo Release From Nanoparticles** ADAH ALMUTAIRI, University of California, San Diego, Cathryn McFearin, Mathieu L Viger, Minnie Chan, Sheng Wangzhong, Eric Schopf
4:10	(1200-5)	**Near-Infrared Imaging in Living Cells with Lanthanides: Phenylene Yb3+ Nano-MOFs** STEPHANE PETOUD, CNRS - Center for Molecular Biophysics, Alexandra Foucault-Collet, Kristy Gogick, Kiley A White, Sandrine Villette, Agnes Pallier, Tao Li, Nathaniel L Rosi

SYMPOSIUM **Session 1210**

New Directions in Water Characterization and Monitoring

arranged by Janusz Pawliszyn, University of Waterloo and Chris Le, University of Alberta

Tuesday Afternoon, Room S404bc

Chris Le, University of Alberta, Presiding

1:30		**Introductory Remarks - Chris Le**
1:35	(1210-1)	**Analytical and Toxicological Characterization of Emerging Disinfection Byproducts in Drinking Water** XING-FANG LI, University of Alberta, Minghuo Wu, Wei Wang, Yichao Qian
2:10	(1210-2)	**New Analytical Capabilities of Differential Ion Mobility (FAIMS) in Water Analysis by Mass Spectrometry** WOJCIECH GABRYELSKI, University of Guelph
2:45	(1210-3)	**Monitoring of Organic Pollutants in Sea Water at the Eight Harbor Entrances of Pearl River with SPME Rapid On-Site Sampling Technique** GANGFENG OUYANG, Sun Yat-Sen University
3:20		**Recess**
3:35	(1210-4)	**Recent Advances in Solid-Phase Microextraction for Drinking Water and Wastewater Analysis** ANGEL RODRIGUEZ-LAFUENTE, University of Waterloo, Janusz Pawliszyn
4:10	(1210-5)	**Characterizing Arsenic Speciation and Health Effects** CHRIS LE, University of Alberta, Qingqing Liu, Xiufen Lu, Chenming Cao, Hanyong Peng, Aleksandra Popowich, Xuan Sun

SYMPOSIUM **Session 1220**

Royal Society of Chemistry Session - arranged by May Copsey, Royal Society of Chemistry

Tuesday Afternoon, Room S404d

May Copsey, Royal Society of Chemistry, Presiding

1:30		**Introductory Remarks - May Copsey**
1:35	(1220-1)	**Multiplexed and Sensitive Molecular Diagnostics Using** SERRS KAREN FAULDS, University of Strathclyde, Mhairi Harper, Kirsten Gracie, Kristy McKeating, Jennifer A Dougan, Duncan Graham
2:10	(1220-2)	**SERS in Practice** W E SMITH, Strathclyde University
2:45	(1220-3)	**Detection of Drugs and Drug Metabolites Using SERS** ROY GOODACRE, University of Manchester, Omar Alharbi, Graham Kenyon, Samuel B Mabbott, Yun Xu, Elon Correa, David Cowcher
3:20		**Recess**
3:35	(1220-4)	**Nanoparticle Labeling Strategies as Tools for the Early Diagnosis of Infectious Disease** MARC D PORTER, University of Utah
4:10	(1220-5)	**Nanoparticle Based Analysis of Biomolecules, Cells and Tissue** DUNCAN GRAHAM, University of Strathclyde, Sarah McAughtrie, Derek Craig, Anna Robson, Jonathan Simpson, Karen Faulds

SYMPOSIUM **Session 1230**

Targeting Protein-Protein Interactions

arranged by Steven J Metallo, Georgetown University

Tuesday Afternoon, Room S405a

Steven J Metallo, Georgetown University, Presiding

1:30		**Introductory Remarks - Steven J Metallo**
1:35	(1230-1)	**Protein-Protein Interactions Exploited Through Small Molecules in Plasmodium Falciparum** JÜRGEN BOSCH, Johns Hopkins University
2:10	(1230-2)	**Targeting Gene Regulation in Cancer** QI JUN, Dana Farber Cancer Institute, James E Bradner
2:45	(1230-3)	**Alpha-Helical Proteomimetics: Inhibition of Intracellular Protein-Protein Interactions via Direct Epitope Transfer from Proteins to Designed Small Molecules** NEAL J ZONDLO, University of Delaware
3:20		**Recess**
3:35	(1230-4)	**Inhibiting Protein-Protein Interactions** ADRIAN WHITTY, Boston University
4:10	(1230-5)	**Specificity and Promiscuity in Small Molecule Binding to Intrinsically Disordered Protein Regions** STEVEN J METALLO, Georgetown University

SYMPOSIUM **Session 1240**

Top-Down Mass Spectrometry of Proteins Relevant to Human Health Research -

arranged by Joseph A Loo, University of California, Los Angeles

Tuesday Afternoon, Room S405b

Joseph A Loo, University of California, Los Angeles, Presiding

1:30		**Introductory Remarks - Joseph A Loo**
1:35	(1240-1)	**Elucidating Structures of Protein Assemblies by Top-Down Native Mass Spectrometry** JOSEPH A LOO, University of California, Los Angeles, Huilin Li, Jiang Zhang, Piriya Wongkongkathep
2:10	(1240-2)	**Top Down Proteomics Reveals Epigenetic Modifications Underpinning Tamoxifen Resistance in Breast Cancer** LJILJANA PASA-TOLIC, Pacific Northwest National Laboratory, Zhaorui Zhang, Si Wu, Nikola Tolic, Rui Zhao, Arzu Umar, Maurice Jansen, Xiaowen Liu, Pavel Pevzner, Rosalie K Chu, David L Stenoien
2:45	(1240-3)	**Top-down Mass Spectrometry Enabled Cardiac Proteomics for Understanding Heart Failure** YING GE, University of Wisconsin-Madison
3:20		**Recess**
3:35	(1240-4)	**Ultra High Resolution Top Down Mass Spectrometry for the Study of Proteins Involved in Gene Regulation** NICOLAS L YOUNG, Florida State University
4:10	(1240-5)	**Improving Coverage of the Human Proteome via Whole Protein Mass Spectrometry** NEIL KELLEHER, Northwestern University

WORKSHOPS **Session 1250**

Advances in Protein and Peptide Separations

arranged by Michael D McGinley, Phenomenex

Tuesday Afternoon, Room S504a

Michael D McGinley, Phenomenex, Presiding

1:30		**Introductory Remarks - Michael D McGinley**
1:35	(1250-1)	**Applying Protein Characteristics in Development of Aggregation Assays Using GFC** MICHAEL D MCGINLEY, Phenomenex, Rustamov Ismail, Shengbin Zhang
2:05	(1250-2)	**Analytical Challenges Facing the Characterization of Targeted Monoclonal Antibody-Based Therapies** CARL GERARD KOLVENBACH, Amgen, Inc.
2:35	(1250-3)	**Strategies for Increasing the Sensitivity and Selectivity of LC/MS/MS Techniques** JEFFREY DOUGLAS MILLER, AB SCIEX
3:05		**Recess**
3:20	(1250-4)	**New UHPLC Method to Monitor Fc Oxidation in Monoclonal Antibody Therapeutics** JUSTIN JEONG, Genentech, Inc., Daniel Hewitt, Bing Zhang, Braydon Burgess, Thomas Verniere, Taylor Y Zhang
3:50	(1250-5)	**Automating Protein Sample Preparation** KEVIN MEYER, Perfinity Biosciences

ORGANIZED CONTRIBUTED SESSIONS **Session 1260**

High Throughput Analysis for Food Safety and Cosmetics

arranged by Perry G Wang, U.S. Food and Drug Administration and Mark F Vitha, Drake University

Tuesday Afternoon, Room S504bc

Mark F Vitha, Drake University, Presiding

1:30	(1260-1)	**High Throughput Techniques for Food Analysis** MARK F VITHA, Drake University
1:50	(1260-2)	**Rapid and Simultaneous Determination of Harmful Chemicals in Nail Products by Gas Chromatography-Tandem Mass Spectrometry** WANLONG ZHOU, US FDA, Perry G Wang, Alexander J Krynitsky
2:10	(1260-3)	**Antibiotic Residue Detection by LC/MS/MS in Food** ANGELA CARLSON, SGS North America
2:30	(1260-4)	**Impact of Chronic Ethanol Consumption on Metabolite Profiles of Liver in Mice: A Time Course Study** XIANG ZHANG, University of Louisville, Zhanxiang Zhou
2:50		**Recess**
3:05	(1260-5)	**A Mass Spectroscopic Fingerprinting Method for Authentication and Quality Assessment of Scutellaria lateriflora Based Dietary Supplements** PEI CHEN, USDA, Jianghao Sun
3:25	(1260-6)	**Micro Flow LC and its Application on Food Safety Analysis** JAMES CHANG, Thermo Fisher Scientific
3:45	(1260-7)	**Improving Identification of Pesticides Using Atmospheric Pressure Gas Chromatography Coupled with Mass Spectrometry** KELLY DORWEILER, General Mills/Medallion Laboratories
4:05		**Open Discussion**

ORGANIZED CONTRIBUTED SESSIONS **Session 1270**

QbD Based Development of Analytical Methods for Product Characterization, Release, and Stability Studies - Present Status, Lessons Learned, and the Future -

arranged by Shreekant V Karmarkar, Baxter Healthcare and Richard Verseput, S-Matrix Corporation

Tuesday Afternoon, Room S504d

Shreekant V Karmarkar, Baxter Healthcare, Presiding

1:30	(1270-1)	**Utilizing Design of Experiments (DOE) for Method Robustness Optimization** DAN PRUDHOMME, Gilead
1:50	(1270-2)	**Application of Quality by Design (QbD) to the Development and Validation of Analytical Methods** YUEER SHI, Bristol-Myers Squibb
2:10	(1270-3)	**Use of a Software as a Platform Neutral Tool in the Validation and Development of Analytical Methods for Quantitative NMR, HPLC and GC/MS** TIM ECKERSLEY, Cambridge Isotope Laboratories, Kris Dziewiszek
2:30	(1270-4)	**Leveraging Predictive Software Tools for HPLC Method Development in Pharmaceutical R&D** EMILY E JAMESON, Vertex Pharmaceuticals

2:50		**Recess**
3:05	(1270-5)	**QbD-Aligned Development of a UHPLC-Based High Throughput SEC Method Using Fusion AE Software** MISAL BALI, Millennium: The Takeda Oncology Company
3:25	(1270-6)	**Pursuing the "Perfect" HPLC Method Using Quality by Design** JOSEPH A TURPIN, Eli Lilly and Company
3:45	(1270-7)	**Lessons Learned from QbD Based Analytical Method Development** SHREEKANT KARMARKAR, Baxter Healthcare, Robert Garber
4:05		**Open Discussion**

ORAL SESSIONS **Session 1280**

Bioanalytical Spectroscopy

Tuesday Afternoon, Room S501bc

Ronghu Wu, Georgia Institute of Technology, Presiding

1:30	(1280-1)	**Development and Optimization of a Closed Tube SERS-Based Assay for the Multiplex Detection of Fungal Infections** SAMUEL B MABBOTT, University of Strathclyde, David Thompson, Narayana Mudalige S Sirimuthu, Graeme McNay, Karen Faulds, Duncan Graham
1:50	(1280-2)	**Metal Enhanced Fluorescence on Gold Microhole Arrays Towards a Dual Detection of a PSA Immunoassay** RICHARD HUGO-PIERRE, Université de Montréal, Julien Breault-Turcot, Jean-François Masson
2:10	(1280-3)	**Ultrasensitive Detection of Dyes and Proteins by Surface-Enhanced Raman Spectroscopy (SERS) in Capillary Electrophoresis (CE)** PIERRE NEGRI, University of Notre Dame, Zachary D Schultz
2:30	(1280-4)	**High–Throughput Cell Assay to Characterize GPCR–Ion Channel Fusion Proteins** MARIA F MENDOZA, University of Arizona, Leonard K Bright, S Scott Saavedra, Craig A Aspinwall
2:50		**Recess**
3:05	(1280-5)	**NIR Dyes As Substrates: New Approach to Determine Enzymatic Activity** GABOR PATONAY, Georgia State University, Maged M Henary, Garfield Beckford, Andy Levitz, Holly Ellis
3:25	(1280-6)	**Extracellular, Membrane and Intracellular Proteins that Alter Receptor Cell Membrane Diffusion and Clustering** EMILY SMITH, Iowa State University, Neha Arora, Dipak Mainali, Aleem Syed, Jacob Petrich
3:45	(1280-7)	**Diffusion Characteristics of Polymerizable Lipids Bilayers** KRISTINA OROSZ, University of Arizona, Boying Liang, Benjamin A Heitz, S Scott Saavedra
4:05	(1280-8)	**Peptide-Mediated Ratiometric Sensing of pH Regulation in Trypanosoma Brucei Glycosomes** SHENG LIN, Clemson University, Kenneth A Christensen, Meredith T Morris, James C Morris

ORAL SESSIONS **Session 1290**

Capillary Electrophoresis: New Approaches for Bioanalytical Applications

Tuesday Afternoon, Room S501d

Colin Medley, Genentech, Presiding

1:30	(1290-1)	**Surface Coating Method for Controlling Electroosmotic Flow for CE-ESI-MS** NICHOLAS BATZ, University of North Carolina at Chapel Hill, J S Mellors, J Michael Ramsey
1:50	(1290-2)	**Tunable DNA Sieving With Thermally Responsive Nanogels** BRANDON C DURNEY, West Virginia University, Lisa A Holland
2:10	(1290-3)	**Carrier-Mediated Electromembrane Extraction Combined with Capillary Electrophoresis for Sensitive Determination of Arsenic Species in Drinking Water** DOO SOO CHUNG, Seoul National University, Hongfei Zhang, Xingnan Sun
2:30	(1290-4)	**Strategies for Improving Analytical Performance of Microscale Electrophoresis** KOJI OTSUKA, Kyoto University, Yudai Fukushima, Koichi Kanemori, Toyohiro Naito, Takuya Kubo
2:50		**Recess**
3:05	(1290-5)	**Bile Salt Micelle Chiral Guest-Host Interactions Probed by MEKC and 1H NMR** CLAIRE OUIMET, Bucknell University, Kendall E Sandy, Timothy G Strein, David Rovnyak
3:25	(1290-6)	**Capillary Electrophoretic Separations with Post Capillary Droplet Segmentation and Sample Capture** CHRISTOPHER R HARRISON, San Diego State University, Shih H Lin
3:45	(1290-7)	**Understanding In-Line Mixing and Stacking Dynamics with EMMA Using the Jaffe Reaction** TIMOTHY G STREIN, Bucknell University, Adam R Meier, Maria D Jones
4:05	(1290-8)	**CIEF-ESI-MS/MS and RPLC-ESI-MS/MS for Quantitative Proteomic Analysis of Differentiating PC12 Cells by 8-Plex iTRAQ** GUIJIE ZHU, University of Notre Dame, Liangliang Sun, Richard Keithley, Norman J Dovichi

ORAL SESSIONS **Session 1300**

Clinical Chemistry and Toxicology (Half Session)

Tuesday Afternoon, Room S501a

Alice Chen, The Pittsburgh Conference, Presiding

1:30	(1300-1)	**Illicit Drug Detection in the Saliva of Impaired Drivers** CHETAN SHENDE, Real-Time Analyzers, Inc., Hermes Huang, Stuart Farquharson
1:50	(1300-2)	**Development of a Universal Method for the Quantification of Organic Toxins from Environmental, Biological, and Food Samples** ANDREW J BOGGESS, Duquesne University, HM Skip Kingston
2:10	(1300-3)	**Electronics System for Multimodal Monitoring of Brain Injury Patients** CHU WANG, Imperial College London, Kostas Papadimitriou, Michelle Rogers, Chi Leng Leong, Toby Jeffcote, Emmanuel M Drakakis, Martyn G Boutelle

ORAL SESSIONS **Session 1310**

Environmental Analysis of PAHs (Half-Session)

Tuesday Afternoon, Room S501a

Alice Chen, The Pittsburgh Conference, Presiding

3:05	(1310-1)	**Environmental Forensic Investigation of Polycyclic Aromatic Hydrocarbons: Determination and Apportionment of Possible Sources** ASHLEY GATES, Pennsylvania State University, Jack Cochran, Melinda Pham, Frank Dorman
3:25	(1310-2)	**Application of Polymeric Ionic Liquid/ Multi-Walled Carbon Nanotube-Based Sorbent Coatings for the Determination of Polycyclic Aromatic Hydrocarbons Using Solid-Phase Microextraction** CHENG ZHANG, The University of Toledo, Jared L Anderson
3:45	(1310-3)	**Alkyl Polycyclic Aromatic Hydrocarbons Emissions in Diesel/Biodiesel Exhaust** SERGIO M CORREA, State University of Rio de Janeiro, Carina S Casal
4:05	(1310-4)	**Optimizing Semi-Volatile Analysis to Achieve Improved Sensitivity, Performance, and Lifetime for Active Compounds** KORY KELLY, Phenomenex

ORAL SESSIONS **Session 1320**

Forensic Analysis

Tuesday Afternoon, Room S502a

Anand Mudambi, US Environmental Protection Agency, Presiding

1:30	(1320-1)	**Characterization of Complex Botanicals by Comprehensive High Performance Time of Flight Mass Spectrometry** JOHN RORABECK, Andrews University, David E Alonso, Joe Binkley
1:50	(1320-2)	**Magic Mushroom Secrets Revealed — Analysis by High Resolution Time-of-Flight Mass Spectrometry** DAVID E ALONSO, Leco Corporation, John Rorabeck, Joe Binkley
2:10	(1320-3)	**Investigating the Molecules of "Death"** RACHEL RENEE BOWER, The Pennsylvania State University, Dan G Sykes
2:30	(1320-4)	**Methamphetamine/Pseudoephedrine Detection with a Portable MEMS GC/SAW System** LEE TU, Defiant Technologies, Patrick R Lewis, Douglas Adkins, Robert Sanchez, Gary Fuehrer, George Dulleck, Jacy Gansz
2:50		**Recess**
3:05	(1320-5)	**Rapid Analysis of Explosive Fireballs** MICHAEL WAYNE BLAIR, Los Alamos National Lab, Joseph A Torres, Bryan L Bennett, Graham Walsh
3:25	(1320-6)	**Comparison of Simulated and Casework Arson Debris for the Training of Chemometric Models** JAMES J HARYNUK, University of Alberta, Xiao Qin Lee, Lawrence A Adutwum, P Mark L Sandercock
3:45	(1320-7)	**Error Rates for Classification of Fire Debris as Positive or Negative for Ignitable Liquid Residue** MICHAEL SIGMAN, University of Central Florida, Erin Waddell, Mary R Williams, Jessica Frisch-Daiello
4:05	(1320-8)	**Colorimetric Wax Toner Paper-Based Device for Field Explosive Testing** THIAGO PAIXAO, Universidade de Sao Paulo, Maiara Salles, Eric da Costa, William de Araujo, Gabriel Meloni

ORAL SESSIONS **Session 1330**

Liquid Chromatography/Mass Spectrometry: Pharmaceutical and Environmental Applications

Tuesday Afternoon, Room S502b

David P Myers, Eli Lilly and Company, Presiding

1:30	(1330-1)	**Information Rich Orthogonal Detection to Provide More Complete Characterization of an USP Assay** APARNA CHAVALI, Waters Corporation, Thomas E Wheat, Patricia R McConville
1:50	(1330-2)	**Determination of Sulfite in Food Products Using Liquid Chromatography-Mass Spectrometry** KATHERINE S ROBBINS, US FDA/CFSAN, Shaun A MacMahon, Lowri DeJager, Timothy H Begley
2:10	(1330-3)	**A Proposed Alternative USP Method for the Determination of Glutathione Impurities by LC-MS-MS** NICOLAS J HOUSER, RTC/Sigma-Aldrich, Andy Ommen, Carmen T Santasania
2:30	(1330-4)	**Automated Multimodal Chromatographic Method Development Integrating Complementary Optical and Mass Spectral Detection** DANIEL ROOT, Waters Corporation, Thomas E Wheat, Patricia R McConville
2:50		**Recess**
3:05	(1330-5)	**Orthogonal Detection Techniques for the Identification and Confirmation of Impurities Using an USP Chromatographic Method** APARNA CHAVALI, Waters Corporation, Thomas E Wheat, Patricia R McConville
3:25	(1330-6)	**Improving Stereoisomer Analysis of 1,3-DMAA and 1,4-DMAA in Geranium Plants Using a Chiral Derivatizing Agent with HPLC-MS/MS Detection** HEATHER FLEMING, University of Memphis, Patricia Ranaivo, Paul S Simone
3:45	(1330-7)	**Development and Evaluation of a Chromatographic System Combining UV and MS Detection Used in Separation Development** THOMAS E WHEAT, Waters Corporation, Aparna Chavali, Paula Hong, Daniel Root, Patricia R McConville
4:05	(1330-8)	**Stability-Indicating Method Development and Validation for the Assay of Oxcarbazepine and Determination of Impurities/Degradants in the Oxcarbazepine Raw Material Using Reversed-Phase Liquid Chromatography** JOHN ALBAZI, Northeastern Illinois University, Lubna Masu

ORAL SESSIONS **Session 1340**

Microfluidics: Cells, Bacteria, Viruses

Tuesday Afternoon, Room S503a

Liang Tang, University of Texas at San Antonio, Presiding

1:30	(1340-1)	**Generation of a Chemical Gradient Across an Array of 256 Cell Cultures in a Single Chip** HIMALI J SOMAWEERA, Texas Tech University, Dimitri Pappas, Akif Ibragimov
1:50	(1340-2)	**A Chiral Microchip Electrophoresis-Mass Spectrometric Platform for Studying Stereochemical Preference in Cells** YIMING LIU, Jackson State University, Xiangtan Li
2:10	(1340-3)	**Immune Cell Capture by Negative Dielectrophoretic Attraction to an Ion Enrichment Zone Generated by a Bipolar Electrode** ROBBYN KIMBERLY PERDUE-ANAND, University of Washington, Daniel T Chiu, Eleanor S Johnson
2:30	(1340-4)	**A Microfluidic Localized, Multiple Cell Culture Array Using Vacuum Actuated Cell Seeding: Integrated Anticancer Drug Testing** YAN GAO, Texas Tech University, Dimitri Pappas, Peng Li
2:50		**Recess**
3:05	(1340-5)	**Nanofluidic Circuits for Resistive-Pulse Sensing of Virus Capsids with an Improved Signal-to-Noise Ratio** ANDREW R KNELLER, Indiana University, Zachary D Harms, Daniel G Haywood, Stephen C Jacobson, Lisa Selzer, Adam ZIotnick
3:25	(1340-6)	**Multiplexed Microfluidic Enzyme Assays for Detection of Metabolic Products from Living Cells** COLLEEN DUGAN, University of Michigan, Ormond MacDougald, Robert Kennedy
3:45	(1340-7)	**Functionalized Electrospun Nanofibers for the Concentration and Detection of Pathogenic E.Coli** LAUREN MATLOCK-COLANGELO, Cornell University, Christine L Pitner, Olesja Bauer, Margaret W Frey, Antje Baeumner
4:05	(1340-8)	**Electrical Lysis of Adhered Cells on a Reusable Transparent 3D Printed Fluidic Device Via Removable Electrodes for In Vitro Thrombus Formation** BETHANY GROSS, Michigan State University, Dana Spence

ORAL SESSIONS **Session 1350**

Neurochemistry: Dopamine and Serotonin

Tuesday Afternoon, Room S503b

Leslie Sombers, North Carolina State University, Presiding

1:30	(1350-1)	**Electrochemical Measurements to Study Mechanisms of Neurodegeneration and Neurotoxicity** SAM KAPLAN, University of Kansas, Ryan Limbocker, Maxwell Newby, Michael A Johnson
1:50	(1350-2)	**Evoked Dopamine Overflow in the 6-OHDA-Lesioned Rat Striatum** ZHAN SHU, University of Pittsburgh, Amy Rupert, Michael Zigmond, Adrian C Michael
2:10	(1350-3)	**Optogenetic Control of Serotonin Release in Drosophila** NING XIAO, University of Virginia, B Jill Venton
2:30	(1350-4)	**Withdrawn**
2:50		**Recess**
3:05	(1350-5)	**Simultaneously Monitoring the Effects of Levodopa Treatment on Dopamine and H2O2 Dynamics In Vivo with Fast-Scan Cyclic Voltammetry** LINGJIAO QI, North Carolina State University, Leslie A Sombers
3:25	(1350-6)	**Measurement of Stimulated Dopamine Exocytosis and Electrochemical Imaging of Differentiated PC12 Cells via Scanning Electrochemical Microscopy-Atomic Force Microscopy** KIRSTIN C MORTON, Indiana University, Maksymilian A Derylo, Lane A Baker
3:45	(1350-7)	**A Novel Kinetic Model of Voltammetric Dopamine Measurements in the CNS** SETH H WALTERS, University of Pittsburgh, Adrian C Michael
4:05	(1350-8)	**Lingering Neurochemical Effects of Acute Escitalopram: An In-Vivo Voltammetric Serotonin Study in Mice** DAVID E CEPEDA, Wayne State University, Parastoo Hashemi

ORAL SESSIONS **Session 1360**

Separation Science: Novel Approaches to Improve Chromatographic Analysis

Tuesday Afternoon, Room S505a

Cecil Dybowski, University of Delaware, Presiding

1:30	(1360-1)	**Evaluation of Enhanced Fluidity Mobile Phases in Hydrophilic Interaction and Ion Exchange Separations** MARTIN J BERES, The Ohio State University, Susan V Olesik
1:50	(1360-2)	**The Next Generation of Hydrolytically Stable Packing Materials: Organic/Inorganic Hybrids** MATTHIAS IDE, Ghent University, Frédéric Lynen, Pascal Van Der Voort
2:10	(1360-3)	**Evaluation and Applications of a HILIC/Cation Exchange/Anion Exchange Trimodal Column** XIAODONG LIU, Thermo Fisher Scientific, Mark Tracy, Christopher Pohl
2:30	(1360-4)	**Considerations for Choosing a Different Carrier Gas in Gas Chromatography** JAAP DEZEEUW, Restek
2:50		**Recess**
3:05	(1360-5)	**Analyses of Fat-Soluble Vitamins, Carotenoids and Lipids by Supercritical Fluid Chromatography with Sub-2µm Particle Columns** JINCHUAN YANG, Waters Corporation, Giorgis Isaac, Rui Chen, Joe Romano
3:25	(1360-6)	**Continuing Investigation of Polyionic Ionic Liquid Stationary Phases for Capillary GC** LEONARD M SIDISKY, Supelco/Sigma-Aldrich, Greg A Baney, James L Desorcie, Daniel Shollenberger, Gustavo Serrano
3:45	(1360-7)	**Pyrolysis-GC/MS Used to Study Dyes in Textile Fibers** KAREN SAM, CDS Analytical, Thomas Wampler, Steve Wesson, Ben Peters, Gary Deger
4:05	(1360-8)	**Hand-Portable Liquid Chromatography** SONIKA SHARMA, Brigham Young University, Paul B Farnsworth, Milton L Lee, Stanley D Stearns, Alex Plistil, Robert S Simpson

POSTER SESSION **Session 1370**

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Drug Discovery

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1370-1 P)	**Fraction Collection Using Sub 2 µm UHPLC Separations: Challenges and Solutions** ANDREW AUBIN, Waters Corporation, Jo-Ann Jablonski, Wendy Harrop
(1370-2 P)	**Isolation of a Bioactive Compound from Tillandsia Recurvata Plant Extract Using Supercritical Fluid Extraction and Mass Directed Preparative Liquid and Supercritical Fluid Chromatography** JOHN P MCCAULEY, Waters Corporation, Jo-Ann Jablonski, Jacquelyn Runco, Yun Alelyunas, Rui Chen
(1370-3 P)	**Antifungal Fractions Isolated from the Root-Bark Essential Oil of Morinda Lucida (L)** OLAYINKA T ASEKUN, University of Lagos, Taiwo Olayinka, Sunday O Okoh
(1370-4 P)	**Analysis of Drugs: Single Fast Approach for the Determination of Most Common Drugs and their Metabolites Using GC-TOF-MS** ILARIA FERRANTE, DANI Instruments, Chiara Abate
(1370-5 P)	**GC/MS Constituents and Physico-Chemical Properties of Crude and Refined Azadirachta Indica Seed Oils** OMOBOLA O OKOH, University of Fort Hare, Aroke S Ahmed, Sunday Okoh
(1370-6 P)	**Study of Novel Pyrrole Derivatives TARUN** PATEL, MR Science College
(1370-7 P)	**Synthesis and Biological Screening of Novel Heterocyclic Compounds** AMIT PATEL, Shri M, R Science College
(1370-8 P)	**Synthesis and Characterization of Some Novel Chalcone Compounds having Benzyloxydibromo Resacetophenone Moiety** SANJAYKUMAR S SHAH, Pilvai College, Kirtikumar Goswami
(1370-9 P)	**Application of Soya Based Nanosponges for Monitoring Thermal Degradation Products of Epoxy Insulators in Electrical Transformers** CARLO M ROGGERO, Missouri University of Science and Technology, Shubhender Kapila, Vander Tumiatti, Michela Tumiatti
(1370-10 P)	**Artemether: A Potential Agent for the Treatment of Cervico-Uterine and Colorectal Tumor/Cancer** NICHOLAS C OBITTE, University of Nigeria, Nsukka, Bridget C Obitte, Damian C Odimegwu, Therea Odoh, Oliver U Eze, Innocent O Ajawobu, Dominic C Ibe
(1370-11 P)	**Formulation and Evaluation of Diltiazem Sustained Release Tablets** VIVEK C MODI, Cadila Pharmaceutical Ltd.
(1370-12 P)	**Synthesis and Antimicrobial of Some New Substituted Pyrido[3',2':4,5]Thieno[3,2-d]Pyrimidinone Derivatives** MOHAMED A AL-OMAR, King Saud University, Ahmed Fayed, Abd El-Galil E Amr, Elsayed E Mostafa
(1370-13 P)	**Use of Entrapment to Prepare Columns Containing Alpha1-Acid Glycoprotein for Rapid Studies of Drug-Protein Binding by High-Performance Affinity Chromatography** CONG BI, University of Nebraska-Lincoln, Rong Li, David S Hage
(1370-14 P)	**Study of Atypical Tetracyclines Fragmentation with LC-MS** MARTIN SALA, National Institute of Chemistry Slovenia, Drago Kocar, Tadeja Lukezic, Gregor Kosec, Hrvoje Petkovic
(1370-15 P)	**Rapid Determination of Rate Constants and Binding Constants for Solution-Phase Drug-Protein Interactions by Ultrafast Affinity Chromatography** XIWEI ZHENG, University of Nebraska-Lincoln, Zhao Li, Maria Podariu, David S Hage

POSTER SESSION **Session 1380**

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Environmental Analysis of Toxic and Persistent Compounds

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1380-1 P)	**Withdrawn**
(1380-2 P)	**GC-PID for In-Situ Soil Investigation** JOERN FRANK, Hamburg University of Technology, Hendrik Fischer, Ivaylo Radev, Axel Baermann, Gerhard Matz
(1380-3 P)	**The Use of RP-HPLC Technique for Determining Polycyclic Aromatic Hydrocarbons (PAH's) in Marine and Seaside Sediments Collected from the Gulf of Mexico** ANTONIO ROJAS, Mexican Petroleum Institute, Berenice A Nolasco, Zoraya Carbajal, Gerardo Zavala, Alma Martínez, Camilo Ponce
(1380-4 P)	**Single Column Analysis of PBDEs, Including BDE 209** KORY KELLY, Phenomenex
(1380-5 P)	**Selective and Sensitive Detection and Quantification of Stockholm Convention POPs Including Dioxins, Using Atmospheric Pressure Gas Chromatography MS/MS** DOUGLAS STEVENS, Waters Corporation, Kenneth J Rosnack, Kendon Graham, Jody Dunstan, Michael McCullagh, Bert van Bavel, Ingrid Ericson Jogsten, Jessika Hagberg
(1380-6 P)	**Analysis of Pesticides in Baby Food Using a Triple-Quadruple GC/MS/MS** LAURA CHAMBERS, Shimadzu Scientific Instruments, Richard R Whitney, Nicole M Lock, Zhuangzhi "Max" Wang, Clifford M Taylor
(1380-7 P)	**Determination of Paraquat and Diquat in Environmental Samples Using a Sub-2-µm, Solid-core Particle HILIC Column** KENNETH J FOUNTAIN, Waters Corporation, Jeremy C Shia, Michael S Young
(1380-8 P)	**Development and Evaluation of Novel NSP-EUPAH GC Column for EU and EPA Priority PAH** KRISHNAT NAIKWADI, J & K Scientific Inc., Allen Britten
(1380-9 P)	**The Determination of Hexavalent Chromium in Soil by HPLC/ICP-MS** ANITA HSOUNA, High-Purity Standards, Erica Cahoon
(1380-10 P)	**Separation and Chemical Speciation of Chromium(III & VI) in Water by Clay Packed Column Prior to Inductively Coupled Plasma Optical Emission Spectrometry** SALIH S AL-JUAID, King Abdulaziz University, Mohammead S El-Shahawi
(1380-11 P)	**Comparative Analysis of PCDD/Fs in Sediments by Gas Chromatography Coupled with HRMS, LRMS and MS/MS** ZHUONA LI, University of Illinois at Chicago, Jiehong Guo, An Li, Karl J Rockne, John P Giesy, Neil C Sturchio
(1380-12 P)	**Analysis of Odorous Consumer Products Using Gas Chromatography Coupled to Mass Spectrometry and Olfactory Detection** AMY PORTER, Impact Analytical, Karen Griffin
(1380-13 P)	**Use of Bis(1-pyrenyl)azine in the Separation and Detection of Select Heavy Metals** HILLARY ASBERRY, Western Kentucky University, Darwin Dahl
(1380-14 P)	**Label-Free Impedimetric Aptasensor for the Sensitive Detection of the Marine Toxin Okadiac Acid** SHIMAA EISSA, INRS-EMT, Mohamed Siaj, Mohammed Zourob, Ana Tavares, Andy Ng
(1380-15 P)	**Method for the Estimation of Heavy Metal Deposit Range of Spotlike Metal Sources** MARTTI KALERVO HAGFORS, Finnish Defence Forces Technical Research Centre (PVTT), Mervi Hokkanen
(1380-16 P)	**Microfluidic Paper-Based Devices for Titration of Cadmium** SHENGXI JIN, Tennessee Tech University
(1380-17 P)	**In-Situ Electrochemistry of Extreme Environments on Earth** DON NUZZIO, Analytical Instrument Systems, Inc.
(1380-18 P)	**Speciation of Some Selected Heavy Metals in Coal Bottom Ash from Okaba Coal, Ankpa, Nigeria** EDMUND OKORIE, Federal Polytechnic Idah, Joseph N Egila
(1380-19 P)	**Multi-Element Analysis of Acid Mine Water by Using ICP-ORC-MS** VIERA VOJTEKOVA, University of PJ Safarik, Zuzana Popernikova, Daniel Kupka, Rastislav Serbin, Daniela Sabolova
(1380-20 P)	**GC-MS Separation and Determination of Cocaine and Benzoylecgonine in Paper Currencies and Sewage Water** YUEGANG ZUO, University of Massachusetts Dartmouth, Tian Shi

POSTER SESSION — Session 1390

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Environmental: Air Analysis

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1390-1 P) **Ease of Use and Low Detection Limits of a New Dry Sampler for Determination of Vapor Phase and Particulate Isocyanate Derivatives** OLGA I SHIMELIS, Supelco/Sigma-Aldrich, Emily Barrey, Michael Halpenny, Jamie Brown

(1390-2 P) **Multivariate Statistical Analysis of Chicago Air Pollution and Meteorological Data** KATRINA BINAKU, Loyola University Chicago, Martina Schmeling, Tim O'Brien, Tinamarie Fosco

(1390-3 P) **Development of an Airborne Proton-Transfer-Reaction Time-of-Flight Mass Spectrometry (PTR-TOFMS) Instrument for Atmospheric Research** GERNOT HANEL, IONICON Analytik GmbH., Alfons Jordan, Armin Wisthaler, Markus Mueller, Tomas Mikoviny, Jim H Crawford, Eugen Hartungen, Christian Lindinger, Lukas Maerk, Jens Herbig, Simone Juerschik, Philipp Sulzer, Tilmann D Maerk

(1390-4 P) **Monitoring Odorous Sulfur Compounds by Thermal Desorption (TD)–GC–MS** NICOLA M WATSON, Markes International, Stephen Davies, Peter Grosshans

(1390-5 P) **Recoveries of 65 VOCs Over a 30 Day Period in Dry and Humid Conditions in Two Silicon-Lined Canister Types** JASON S HERRINGTON, Restek, Gary Stidsen, Jack Cochran, Chris English, Joe Konschnik, Steve Kozel

(1390-6 P) **Detection of Combustion Effluents in Atmospheric Particulate Matter 2.5 (PM2.5)** SHIORI OTA, Tokai University, Yoshika Sekine, Naoko Hirayu, Junji Yoshitake, Hikaru Sakuramoto

(1390-7 P) **Enhance Your Direct Mercury Analysis: Sorbent Tube Gas Analysis** SUMEDH P PHATAK, Milestone, David Gunn

(1390-8 P) **Method Development for Determination of Trace Concentrations of Aldehydes and Carboxylic Acids in Particulate Matter** JANA ROUSOVA, University of North Dakota, Manikyala Chintapalli, Jana Stavova, Alena Kubatova, Josef Beranek

(1390-9 P) **Monitoring Siloxanes in Biogas Using Thermal Desorption Tube Sampling** NICOLA M WATSON, Markes International, Paul Morris, Peter Grosshans

(1390-10 P) **A New TRAP-GC-MS-FID Instrument for Ambient Air Monitoring Designed for Industrial Applications** DAMIEN BAZIN, Chromatotec, Michel Robert, Franck Amiet

(1390-11 P) **Characterization of Low and Non-Volatile Organics in Particulate Matter Using Thermal Extraction Followed by Pyrolysis with Gas Chromatography Mass Spectrometry** ALENA KUBATOVA, University of North Dakota, Richard Cochran, Josef Beranek, Jeong Haewoo, Evguenii Kozliak

POSTER SESSION — Session 1400

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Environmental: Water

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1400-1 P) **Potential Contamination of Fluoroquinolones in Water-Bodies During the Production of Broiler Chicken** LEILA A FIGUEIREDO, Universidade de Sao Paulo, Denis H Silva, Jeane G Francisco, Sergio H Monteiro, Thais F Campion, Rodrigo F Pimpinato, Carlos A Dorelli, Valdemar L Tornisielo

(1400-2 P) **Cyanide Analysis of Aqueous Samples Containing Elevated Levels of Surfactants** WILLIAM C LIPPS, Xylem/OI Analytical, Libby A Badgett, Gary Engelhart

(1400-3 P) **Determination of Geosmin and 2-Methylisoborneol in Environmental Matrices by Dynamic Headspace/P&T-Time of Flight GC/MS** ILARIA FERRANTE, DANI Instruments, Roberta Lariccia

(1400-4 P) **Analysis of Micro Nutrients (Anions and Cations) in Water by Ion Chromatography** JAY GANDHI, Metrohm USA, Anne Shearrow

(1400-5 P) **Screening Environmental Samples for a Diverse Range of Compound Classes and Structures with Accurate Mass LC-MS and an Integrated Scientific Information System** KENNETH J ROSNACK, Waters Corporation, Gareth Cleland, Lauren Mullin, Claude Mallet, Jennifer Burgess

(1400-6 P) **Revisiting the Indirect Colorimetric Determination of Sulfate Using a Barium/Chromate Reagent and a Barium/Sulfonazo III Chelate: Application to Abandoned Mine Drainage** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg

(1400-7 P) **Determination of 16 Environmental Protection Agency Polycyclic Aromatic Hydrocarbons in Water Samples via Solid-phase Nanoextraction and Gas Chromatography - Mass Spectrometry** WALTER B WILSON, University of Central Florida, Udienza Hewitt, Mattheu Miller, Andres D Campiglia

(1400-8 P) **Gold Nanorods Functionalized Substrates for Surface Plasmon Resonance Detection of Mercury in Flow Injection Analysis** KHANG TRIEU, University of Central Florida, Emily Heider, Andres D Campiglia

(1400-9 P) **Improved Efficiencies In TOC Wastewater Analysis for Standard Method 5310B and EPA Method 415** KRISTINA M MASON, Teledyne Tekmar, Tammy Rellar, Roger Bardsley, Joy Osborne

(1400-10 P) **Analysis of Surface and Wastewaters for Phase II Metabolites via Tandem Mass Spectrometry** MATTHEW REICHERT, Loyola University Chicago, Deepika Panawennage, Gergana Georgieva, M Paul Chiarelli

(1400-11 P) **A Single Calibration Method for Water And Soil Samples Performing EPA Method 8260** ANNE JUREK, EST Analytical, Lindsey Pyron, Justin Murphy, Doug Meece

(1400-12 P) **Determination of Inorganic Mercury in Petroleum Production Water by Photochemical Vapor Generation Coupled to ICP OES** BARBARA B FRANCISCO, UFF, Anderson A Araujo, Ricardo A Cassella, Patricia Grinberg, Ralph Sturgeon

(1400-13 P) **Multimodal Cartridges for Automated Solid Phase Extraction of Emerging Contaminants in Drinking Water** WILLIAM R JONES, Horizon Technology, Alicia J Cannon, Brian LaBrecque, Robert S Johnson

(1400-14 P) **Development of Visual Analysis for Fluoride Ion with ON-OFF Color Change Reaction by the Assistance of Image Processing Technology** ATSUSHI MANAKA, Toyama National College of Technology, Shukuro Igarashi, Tihiro Sakagami, Yu Sato

(1400-15 P) **Measurement of Fluoride Ions in Drinking Water and Environmental Samples at Normal pH of Sample by Pulsed Chronopotentiometry with Ion-Selective Electrodes** KAITLIN CAHILL, Northern Kentucky University, Jeremy Myers, Kebede L Gemene

(1400-16 P) **Utility of Charge Detector in Ion Chromatography Applications** MRINAL K SENGUPTA, Thermo Fisher Scientific, Sheetal Bhardwaj, Kannan Srinivasan, Christopher Pohl, Purnendu K Dasgupta

(1400-17 P) **Use of Flow Analytical Method on the Evaluation Test of Visible Light Responded N/Si Co-Doped TiO2 Sheet in Aqueous Phase** TSUYOSHI SUGITA, Gunma University, Katayama Katayama, Masanobu Mori, Akinori Mase, Hideyuki Itabashi, Shinji Iwamoto

(1400-18 P) **Evaluation of Microbiological Qualities of Tyume River Located in Amatole District, Eastern Cape Province, South Africa** ANTHONY OKOH, University of Fort Hare, Timothy Sibanda

(1400-19 P) **Increased Throughput for VOCs** JOY OSBORNE, Teledyne Tekmar, Nathan Valentine, Kristina M Mason

(1400-20 P) **Preliminary Performance Study on a New Sample Processor for GC-MS Analysis of Volatile Organic Compounds (VOCs) in Water and Soil Matrices** J GARRETT SLATON, Xylem/OI Analytical, Douglas A Toschlog, Gary Engelhart

(1400-21 P) **Inline Dual Element Sample Treatment with Automated Back Flush** BERNARD G SHELDON, Thermo Fisher Scientific

(1400-22 P) **Perchlorate and Bromate Analysis in Various Water Matrices Using Suppressed Ion Chromatography** JAY GANDHI, Metrohm USA

(1400-23 P) **Ion Chromatographic Separation of Divalent Cations by Lewis Base-Coated Zirconia Stationary Phase Column** MORI MASANOBU, Gunma University, Masuno Tomoe, Itabashi Hideyuki, Tanaka Kazuhiko

(1400-24 P) **Assessment of the Effects of Low Density Polyethylene Packaging Materials on the Content of Sachet Water Marketed in Mushin Local Government Area, Lagos, Nigeria** CHUKWUEMEKA P AZUBUIKE, University of Lagos, Cecilia I Igwilo, Olusina S Olayode

(1400-25 P) **An Inexpensive Semi-Automated Method for On-Site Process Monitoring of Total Trihalomethanes and Total Haloacetic Acids in Drinking Water** YIN YEE CHOO, Southeast Missouri State University, Thomas E Watts, Paul S Simone, Gary L Emmert

(1400-26 P) **Using Agricultural Byproduct Rice Hull as Biosorbent to Remove and Recover Metal Ions in Water** YONGBO DAN, Missouri University of Science and Technology, Honglan Shi

(1400-27 P) **On-Site Detection of Semi-volatile Contaminants in Water Using Stir Bar Sorptive Extraction Combined with Portable GC-MS Analysis** LINDSAY ANN HARRINGTON, INFICON

(1400-28 P) **Utility of a New ERS Suppressor for IC Applications** RONG LIN, Thermo Fisher Scientific, Sheetal Bhardwaj, Kannan Srinivasan, John Madden, Christopher Pohl

(1400-29 P) **Investigation of PPCPs and Their Degradates in Missouri Drinking Water System** RUIPU MU, Missouri University of Science and Technology, Honglan Shi, Craig Adams, Todd Eichholz, Yinfa Ma

(1400-30 P) **A Laboratory Controlled Study of the Uptake and Release of Vanadium by Oysters** JOSEPH SNEDDON, McNeese State University, Joel C Richert, Cary J Hardaway

(1400-31 P) **Free Chlorine and Peracetic Acid Disinfectant Treatment Study for N-nitrosamine Formation Potential in Drinking Water Utilizing Isotope Dilution Gas Chromatography – Mass Spectrometry** DANIELLE WEST, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma, John Yang, Bin Hua, Enos Inniss, Craig Adams, Todd Eichholz

(1400-32 P) **Determination of N-Nitrosamines Precursors in Drinking Water System Using Ultra-Fast Liquid Chromatography-Tandem Mass Spectrometry** QIHUA WU, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma, Craig Adams, Todd Eichholz, Terry Timmons

(1400-33 P) **Ammonia Removal from Drinking Water System Using Zeolite** RUNMIAO XUE, Missouri University of Science and Technology, Honglan Shi, Yinfa Ma, John Yang, Bin Hua, Enos Inniss, Craig Adams, Todd Eichholz

(1400-34 P) **Ultra-Sensitive Conductometric Biosensor for Online Measurement of Organophosphate Insecticide in an Aqueous Medium** NEDJLA ZEHANI, Université Claude Bernard-Lyon1

(1400-35 P) **Analysis and Treatment of Goldmine Effluent in Colombia by CVASS and Heterogeneous Photocatalysis with TiO2 and Solar Radiation** SIDAY MARRUGO MADRID, University of Cordoba, Jose Marrugo Negrete, Jose Pinedo Hernandez

(1400-36 P) **Determination of Mercury (Hg) in Water by Hand-Held, Portable Cold Vapor Atomic Fluorescence Spectrometry** JAMES A MOORE, Arizona Instrument, Garrett M Rowe, Chris J Altamirano

(1400-37 P) **Spectroscopic Study of Green Remediation of Lead (II) Chloride in Aqueous Medium Using Quercetin Pentaphosphate** FRANCIS J OSONGA, Binghamton University, Veronica A Okello, Michael T Knipfing, Omowunmi A Sadik

(1400-38 P) **Gemfibrozil, Ibuprofen and Triclosan Profiling in Tuscaloosa Waste Water Treatment Facility Using SPE and HPLC Analysis** SAM SUBRAMANIAM, Miles College, Robert Pitt, Aaron Ladet

(1400-39 P) **Effects of Fertilization on Bodies of Water Near Agricultural Fields** MICHELLE TOWNSEND, Saint John Fisher College

(1400-40 P) **Removal of Metals from Aqueous Solution Using Functionalized Magnetic Nanoparticles** HANDE YONDEMLI, Selcuk University, Betul Ertekin, Mustafa Ozmen

(1400-41 P) **A Rapid High Performance Liquid Chromatography (HPLC) for Determination of Trace Nitrate and Nitrite in Snow and Drinking Water Samples** YUEGNAG ZUO, University of Massachusetts Dartmouth, Lu Xiaofei, Yiwei Deng

(1400-42 P) **Heavy Metal Elements Pre-Concentration by Solid Phase Extraction and Rapid Detection** ARIEL DONOVAN, Missouri University of Science and Technology

POSTER SESSION **Session 1410**

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Food Science: Flavors

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1410-1 P) **Application of Solid Phase Extraction with Gas Chromatography-Mass Spectrometry in Geographical Profiling and Characterization of Volatile Organic Compounds in Kenyan Honey** ONDITI O ANAM, Jomo Kenyatta University of Agriculture and Technology, Fredrick N Munga

(1410-2 P) **Detection of Low-Level Sulfur Compounds in Spearmint Oil Using the Pulsed Flame Photometric Detector (PFPD)** GARY ENGELHART, OI Analytical, Hank Hahn

(1410-3 P) **Antioxidant Stability of Coffee and Tea Products Using the TEAC Method** XIAOPING LI, Georgia Gwinnett College, Jessie Conejo, Mai Moua

(1410-4 P) **Comparison of Different Direct Mass Spectrometric Approaches for the Quality Control of Virgin Olive Oil** ANTONIO MOLINA-DIAZ, University of Jaen, Felipe J Lara-Ortega, José Robles-Molina, Bienvenida Gilbert-López, Juan F Garcia-Reyes

(1410-5 P) **Evaluation of the Essential Elements Behavior in Raw and Cooked Beans (Phaseolus vulgaris L.)** JULIANA NAOZUKA, UNIFESP, Alessandra S T Ferreira, Gislayne A R Kelmer, Pedro V Oliveira

(1410-6 P) **Antioxidant Activities of Rosmarinus Officinalis L. Essential Oil Obtained by Hydro-Distillation and Solvent Free Microwave Extraction** OMOBOLA O OKOH, University of Fort Hare, Alexandra P Sadimenko, Anthony J Afolayan

(1410-7 P) **Batch to Batch Sensory Quality Control of Ranch Sauce Using a Gas Chromatography Electronic Nose and Olfactometry** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marion Bonnefille, Herve Lechat, Fatma Ayouni, Valerie Vabre

(1410-8 P) **Quantification of the Bitterness Level of Olive Oils with an Electronic Tongue** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marie-Laure Vicenty, Marion Bonnefille

(1410-9 P) **Flavor Profiles of Imported and Domestic Beers by Purge and Trap Thermal Desorption GC/MS** RONALD EDWARD SHOMO, Scientific Instrument Services, Robert S Frey, Christopher Baker, John J Manura

(1410-10 P) **Vegetable Oils and Their Thermal Stability Under Frying Process** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Izabel Cristina Freitas Moraes

(1410-11 P) **Essential Oils Authenticity Assessment in Food and Beverages Products by Static Headspace and Chiral Fast GC-TOF-MS** DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero

POSTER SESSION **Session 1420**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Food Science: Screening Strategies

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1420-1 P) **Use of a Voltammetric Electronic Tongue for Discrimination of Milk Adulteration with Urea, Formaldehyde and Melamine** LIGIA BUENO, Universidade de Sao Paulo, Maiara Salles, William de Araujo, Thiago Paixao

(1420-2 P) **Nitrogen/Protein Determination in Starch by Flash Combustion Using Large Sample Weight in Alternative to Kjeldahl Method** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(1420-3 P) **Multivariate Analysis for Corbicular Bee Pollen Classification Using Physicochemical Properties** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, July Alexandra M Hérnandez López, Nelson Rodriguez Arias

(1420-4 P) **Method Development for Modifying QuEChERS in Modern Applications** DERICK LUCAS, Agilent Technologies, Trisa Robarge, Mike Chang, Irina Diomaeva

(1420-5 P) **Electrical Conductivity, Color, Water Activity, Ash and Specific Rotatory Power in Selected Colombian Honeys** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Laura María M Reyes Méndez, Paulo Jose Amaral do Sobral

(1420-6 P) **Very Large Range Pesticide Screening in Food Using GC Triple Quadrupole MS** MASSIMO SANTORO, Thermo Fisher Scientific, David Steiniger, Juan Carmona, Paul Silcock, Jason Cole

(1420-7 P) **Identification of Fraudulent Truffle Oil Adulterants by Thermal Desorption GC/MS** RONALD EDWARD SHOMO, Scientific Instrument Services, Christopher Baker, John J Manura, Robert S Frey

(1420-8 P) **Analysis of PAHs in Olive Oil Using a New Dual-Layer SPE Cartridge** KATHERINE K STENERSON, Supelco/Sigma-Aldrich, Olga I Shimelis, Ken Espenschied, Michael Halpenny

(1420-9 P) **Veterinary Drug Residue Analysis Using an Automated Solution to QuEChERS** TYLER TRENT, Teledyne Tekmar

(1420-10 P) **The Applications of SHINERS Technology in Food Safety** HUAIZHI KANG, Xiamen University, Zhongqun Tian

(1420-11 P) **Fast and Accurate Automated Method for Wine SO2 Free Analysis** ERIC NAIGEON, Thermo Fisher Scientific, Marco Rastetter, Mari Klemm, Annu Suoniemi-Kähärä

(1420-12 P) **Utilizing HPLC and HPLC-MS for the Characterization, Isolation, and Quantitation of Capsacinoids in Chili Peppers and Hot Sauces** J PRESTON, Phenomenex, Seyed Sadjadi, Sky Countryman, Zeshan Aqeel

(1420-13 P) **Ion Exclusion Ultra-High Performance Liquid Chromatography of Aliphatic and Aromatic Acids** JENNIFER D FASCIANO, Miami University, Fotouh R Mansour, Neil D Danielson

(1420-14 P) **A New Chemometric Graphical Software for the Non-Chemometricians** CHRISTOPHE CORDELLA, INRA

(1420-15 P)	**Are Your Cornflakes Stale? Hexanal Formation in Grain Products** ANNE JUREK, EST Analytical, Justin Murphy, Lindsey Pyron
(1420-16 P)	**Selective Analysis of Patulin in Apple Juice Using the Acquity UPLC H-Class with the Acquity QDA Detector** KENNETH J ROSNACK, Waters Corporation, Jennifer Burgess, Brian Tyler, Joe Romano
(1420-17 P)	**Withdrawn**
(1420-18 P)	**Withdrawn**
(1420-19 P)	**Innovations for Edible Materials, Medicines, Green Chemistry, Sustainability, Etc** YASUYUKI YAMADA, Nagoya Naikaseikeisanfujinka Hospital, Keiko Yamada

POSTER SESSION **Session 1430**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Sensors: General Interest and Others

Tuesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1430-1 P)	**A Highly Sensitive, Real Time LSPR Sensor** DANIEL WILLETT, Clemson University, George Chumanov
(1430-2 P)	**Nitrite-Selective Optical Sensors Based on Co(III) Corrole and Rh(III) Porphyrin as Ionophores** SI YANG, University of Michigan, Mark E Meyerhoff
(1430-3 P)	**SERS Active Three Dimensional Gold Nanostructure** TAKAO FUKUOKA, University of Hyogo/Archilys, Ryo Takahashi, Yuichi Utsumi, Akinobu Yamaguchi
(1430-4 P)	**Disposable Microelectrode Ensembles Fabricated with Toner Masks for Hydrogen Peroxide Determination** ANA PAULA R DE SOUZA, Universidade de Sao Paulo, Luiza M F Dantas, Mauro Bertotti
(1430-5 P)	**Determination of Fe(III) in Water Samples Using a Ruthenium Oxide Hexacyanoferrate Modified Microelectrode** ROSELYN C PEÑA, Universidade de Sao Paulo, Ana Paula R de Souza, Mauro Bertotti
(1430-6 P)	**Total Biosensing System Based on Newly Proposed Surface Plasmon Resonance** TOSHIKAZU KAWAGUCHI, Hokkaido University, Katsuaki Shimazu, Kinichi Morita
(1430-7 P)	**Highly Sensitive and Reproducible SERS Sensors Based on AuNps/SPIONs Composites** JONNATAN J SANTOS, Universidade de Sao Paulo, Sergio H Toma, Henrique E Toma, Koiti Araki
(1430-8 P)	**Hydrogen Ion-Selective Poly(Vinyl Chloride) Membrane Electrode for the Use in Highly Acidic Solutions Containing Hydrofluoric Acid** DAISAKU YANO, Organo Corporation, Koji Suzuki
(1430-9 P)	**Functionalized Magnetic Nanoparticles for Homogeneous SERS Assay Platforms** UGUR TAMER, Gazi University, Aykut Onal, Hakan Cifticico, Adem Zengin, Demet Cetin, Zekiye Suludere, Ismail H Boyacı
(1430-10 P)	**Research and Development of Tl – Sensitive Solid State Sensor with Tll–Ag2S–As2S3 Glass Membrane** YURY VLASOV, Saint-Petersburg State University, Yuri E Ermolenko, Igor E Alekseev, Dmitrii Kaliagin
(1430-11 P)	**Plasmonic Assembly Turning on Fluorescence in Surface Plasmon-Coupled Emission for Biosensing** YAO-QUN LI, Xiamen University, Shuo-Hui Cao, Wei-Peng Cai, Qian Liu, Kai-Xin Xie, Yu-Hua Weng, Si-Xin Huo
(1430-12 P)	**Reversible Sensor Based on a Meta-Stable Photoacid Polymer Activated by Visible Light** PARTH PATEL, University of Central Florida, Johns Valentine, Percy Calvo-Marzal, Shelly Hassett, Karin Chumbimuni-Torres
(1430-13 P)	**PID Instrumentation for Long Term Membrane Monitoring** JOERN FRANK, Hamburg University of Technology, Hendrik Fischer, Torsten Ollesch, Gerhard Matz
(1430-14 P)	**Robust Cyclohexanone Selective Chemiresistors Based on Single- Walled Carbon Nanotubes** KELVIN FRAZIER, Massachusetts Institute of Technology (MIT), Timothy M Swager
(1430-15 P)	**Ion Sensor Properties of Sol-Gel-Derived Membranes Modified Chemically with Molecular Tweezer-Type Trifluoroacetophenone Derivative as Carbonate Ionophore** HIROMASA ISHIGAKI, Wakayama University, Setsuko Yajima, Keiichi Kimura
(1430-16 P)	**Determination of Cellulose Crystallinity by Terahertz Time Domain Spectroscopy** CELIO PASQUINI, UNICAMP, Francisco S Vieira
(1430-17 P)	**Ellipsometry and Surface Plasmon Resonance-Based Sensors for Determination of Specific Antibodies** ARUNAS RAMANAVICIUS, Vilnius University, Asta Kausaite-Minkstimiene , Zigmas Balevicius, Yasemin Oztekin, Asta Makaraviciute, Julija Baniukevic, Almira Ramanaviciene
(1430-18 P)	**A Redox-Based Fluorescent Probe for Homocysteine** KE WANG, Georgia State University, Hanjing Peng, Chaofeng Dai, Binghe Wang

WEDNESDAY, MARCH 5, 2014 MORNING

AWARDS **Session 1440**

ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science

arranged by Brian Bidlingmeyer, Agilent Technologies

Wednesday Morning, Room S401a

Brian Bidlingmeyer, Agilent Technologies, Presiding

8:30		**Introductory Remarks - Brian Bidlingmeyer**
8:35		**Presentation of the 2014 ACS Division of Analytical Chemistry Award for Young Investigators in Separation Science to Michael G Roper, Florida State University, by Brian Bidlingmeyer, Agilent Technologies**
8:40	(1440-1)	**Microscale Separation Methods to Monitor Dynamics of Biological Systems** MICHAEL G ROPER, Florida State University
9:15	(1440-2)	**Petroleomics: GCxGC and LC to Separate Functional Groups and/or Isomers and Increase Dynamic Range to Complement Elemental Compositions Resolved and Identified by Ultra-High Resolution FT-ICR Mass Spectrometry** ALAN G MARSHALL, Florida State University, Amy C Clingenpeel, Jacqueline M Jarvis, Jie Lu, Amy M McKenna, Winston K Robbins, Ryan P Rodgers, Steven M Rowland
9:50	(1440-3)	**Electroosmotic Perfusion of Tissue Coupled to On-Chip Derivatization, Separation, and Quantitation - Analysis of Extracellular Biochemistry of Thiols** STEPHEN G WEBER, University of Pittsburgh, Juanfang Wu, Bocheng Yin, Jerome P Ferrance, Kerui P Xu, James P Landers, Erin Redman, Jean P Alarie, J Michael Ramsey, Mats Sandberg
10:25		**Recess**
10:40	(1440-4)	**Microchip Electrophoresis with Electrochemical Detection for Monitoring Markers of Oxidative/Nitrosative Stress in Cells** SUSAN M LUNTE, University of Kansas, Dulan Gunesekara, Joseph M Siegel, Christopher T Culbertson
11:15	(1440-5)	**Capillary Electrophoresis for High Throughput Proteomics** NORMAN J DOVICHI, University of Notre Dame

SYMPOSIUM **Session 1450**

ACS DAC: Chemometrics for Modeling and Analyzing Chemical Systems

arranged by Frank Vogt, University of Tennessee

Wednesday Morning, Room S401bc

Frank Vogt, University of Tennessee, Presiding

8:30		**Introductory Remarks - Frank Vogt**
8:35	(1450-1)	**OPLS Methods for Improved Model Interpretation and Multi-Block Data Integration** JOHAN TRYGG, Umeå University
9:10	(1450-2)	**Geospatial Pattern Recognition: What Can Be Deduced From Geolocated Chemical Data Sets?** STEVEN D BROWN, University of Delaware, Liyuan Chen, Yushan Liu
9:45	(1450-3)	**Multivariate Modeling and Chemometric Resolution of Mixture Spectra in Dynamic Reaction Systems** PAUL GEMPERLINE, East Carolina University, Chun Hsieh, David Joiner, Julien Billeter, Mary Ellen McNally, Ronald Hoffman
10:20		**Recess**
10:35	(1450-4)	**Fusing Spectroscopic Data to Improve Protein Structure Analysis** RENEE D JIJI, University of Missouri Columbia, Olayinka O Oshokoya
11:10	(1450-5)	**Mass Spectrometry-Based Oncometabolomics** FACUNDO M FERNANDEZ, Georgia Institute of Technology, Xiaoling Zang, Maria Eugenia Monge, Christina Jones, Tran Quoc Long, Alex Gray, John McDonald, Jaeyeon Kim, Martin Matzuk

SYMPOSIUM **Session 1460**

ACS DAC: Nanofabrication and Nanoconstructs for Chemical Separations

arranged by Lisa A Holland, West Virginia University

Wednesday Morning, Room S401d

Lisa A Holland, West Virginia University, Presiding

8:30		**Introductory Remarks - Lisa A Holland**
8:35	(1460-1)	**Nanostructured Materials for Liquid Chromatographic Separations** SUSAN V OLESIK, The Ohio State University, Toni Newsome, Xin Fang, Dmytro Kulyk
9:10	(1460-2)	**Carbon-Based Nanomaterials for Chemical Separations** LUIS A COLON, University at Buffalo - SUNY, John C Vinci, Zuqin Xue, Lisandra Santiago-Capeles
9:45	(1460-3)	**2D Microfluidic Separation of DNA by Length and Sequence** LINDA B MCGOWN, Rensselaer Polytechnic Institute, Xingwei Tepke, Xueru Zhang, Steven Cramer
10:20		**Recess**
10:35	(1460-4)	**Nano-Scaffolds for Construct of Biocompatible Coatings in Capillary Electrophoresis** CHARLES A LUCY, University of Alberta, Mahmoud F Bahnasy, Nathan Paisley
11:10	(1460-5)	**Reversible Nanogels for Microscale Separations with Tunable Selectivity** LISA A HOLLAND, West Virginia University, Brandon C Durney, Tyler Davis, Srikanth Gattu, Cassandra L Crihfield

SYMPOSIUM **Session 1470**

Applications of the Newest Light Sources

arranged by Roland Felix Hirsch, Office of Science, US Dept of Energy, SC-23.2 and Andrzej Joachimiak, Argonne National Laboratory

Wednesday Morning, Room S402a

Roland Felix Hirsch, Office of Science, US Dept of Energy, SC-23.2, Presiding

8:30		**Introductory Remarks - Roland Felix Hirsch and Andrzej Joachimiak**
8:35	(1470-1)	**Technologies and Applications of Synchrotrons and X-Ray Free-Electron Lasers** KEITH O HODGSON, Stanford/SLAC
9:10	(1470-2)	**XFP: A National Resource for X-ray Footprinting at the NSLS-II to Probe Nucleic Acids and Protein Structure and Dynamics** MARK CHANCE, Case Western Reserve University, Jen Bohon, Michael Sullivan
9:45	(1470-3)	**Synchrotron-Based X-Ray Crystallography Approach to Antibiotic Resistance and Infectious Diseases** ANDRZEJ JOACHIMIAK, Argonne National Laboratory
10:20		**Recess**
10:35	(1470-4)	**Infrared Spectromicroscopy: The Chemistry of Living Cells** HOI-YING N HOLMAN, Lawrence Berkeley National Laboratory
11:10	(1470-5)	**Advances in the Use of Newest Synchrotron X-Ray Sources in Biology** MATTHIAS WILMANNS, EMBL

SYMPOSIUM **Session 1480**

Biological TERS: Instrumentation Development and Applications

arranged by Volker Deckert, University of Jena and Igor K Lednev, University at Albany, SUNY

Wednesday Morning, Room S402b

Volker Deckert, Institut für Photonische Technologien, Presiding

8:30		**Introductory Remarks - Volker Deckert and Igor K Lednev**
8:35	(1480-1)	**Single Molecule and Low Temperature Tip-Enhanced Raman Spectroscopy** RICHARD P VAN DUYNE, Northwestern University
9:10	(1480-2)	**Scratching the Surface - Limits in High Resolution Raman** VOLKER DECKERT, University of Jena
9:45	(1480-3)	**Application of TERS to Extracellular Matrix Components** LAURENT KREPLAK, Dalhousie University
10:20		**Recess**
10:35	(1480-4)	**Membrane Receptors Probed with Tip Enhanced Raman Scattering** ZACHARY D SCHULTZ, University of Notre Dame
11:10	(1480-5)	**TERS is Uniquely Suitable for Structural Characterization of the Surface of Amyloid Fibrils** IGOR K LEDNEV, University at Albany - SUNY, Dmitry Kurouski, Tanja Deckert-Gaudig, Volker Deckert

SYMPOSIUM **Session 1490**

IAEAC: Label-Free Biosensing: Impedance-Based Biosensors for Environmental Applications

arranged by Joachim Wegener, Regensburg University
and Antje Baeumner, Cornell University

Wednesday Morning, Room S404a

Joachim Wegener, Regensburg University, Presiding

8:30		**Introductory Remarks - Joachim Wegener and Antje Baeumner**
8:35	(1490-1)	**A Biosensor Using Living Cells** IVAR GIAEVER, BioPhysics
9:10	(1490-2)	**Field Portable Impedance-Based Water Toxicity Sensor Using Fish Cells on Fluidic Biochips** MARK W WIDDER, US Army Center for Environmental Health Research, Linda Brennan, David E Trader, Lucy E Lee, William H van der Schalie
9:45	(1490-3)	**Impedance Based Microfluidic Devices to Monitor Cell Volume of Adherent Cells in Real Time and the Interconnections between Cells** SUSAN HUA, SUNY-Buffalo
10:20		**Recess**
10:35	(1490-4)	**Electrochemical Aptasensors for Microbial and Viral Pathogens** MAXIM V BEREZOVSKI, University of Ottawa, Mahmoud Labib
11:10	(1490-5)	**Hyphenated Impedimetric Sensors: A New Route to a Non-Imaging, Label-Free High Content Screening?** JOACHIM WEGENER, Universitaet Regensburg

SYMPOSIUM **Session 1500**

Recent Advances in Laser Induced Breakdown Spectroscopy

arranged by Jagdish P Singh, Mississippi State University
and Rick Russo, Lawrence Berkeley National Laboratory

Wednesday Morning, Room S404bc

Jagdish P Singh, Mississippi State University, Presiding

8:30		**Introductory Remarks - Jagdish P Singh and Rick Russo**
8:35	(1500-1)	**LIBS on Mars: ChemCam's First 100,000 Spectra from the Red Planet** ROGER C WIENS, Los Alamos National Lab, Sylvestre Maurice, Olivier Forni, Sam Clegg, Ryan B Anderson, M Darby Dyar, Cecile Fabre, Jeremie Lasue, MSL Science Team
9:10	(1500-2)	**Laser-Induced Breakdown Spectroscopy (LIBS) as an Emerging Tool: Figures, Facts and Future** MOHAMAD SABSABI, National Research Council, Paul Bouchard, Francois R Doucet, Lutfu C Ozcan, André Moreau, Aïssa Harhira, Alain Blouin
9:45	(1500-3)	**Laser Induced Breakdown Spectroscopy: Applications to Gas Sample Analysis** JAGDISH P SINGH, Mississippi State University, Fang Y Yueh, Kemal E Eseller
10:20		**Recess**
10:35	(1500-4)	**Application of Laser Induced Breakdown Spectroscopy (LIBS) for Monitoring CO2 Storage Permanence** DUSTIN MCINTYRE, USDOE NETL
11:10	(1500-5)	**Laser-Induced Breakdown Spectroscopy in Life Science** AWADHESH K RAI, Allahabad University, Ashok K Pathak, Pradeep Kumar Rai, Pramod Kumar Rai

SYMPOSIUM **Session 1510**

Refining Chemical Analysis in the Central Nervous System

arranged by Adrian C Michael, University of Pittsburgh and Martyn Boutelle, Imperial College London

Wednesday Morning, Room S404d

Adrian C Michael, University of Pittsburgh, Presiding

8:30		**Introductory Remarks - Adrian C Michael and Martyn Boutelle**
8:35	(1510-1)	**In-Vivo, Real-Time Chemical Characterization of Brain Tumour Tissues by Rapid Evaporative Ionization Mass Spectrometry** ZOLTAN TAKATS, Imperial College London
9:10	(1510-2)	**A Biosensor-Based Microfluidic Analysis System for Monitoring Brain Injury** MICHELLE ROGERS, Imperial College London, Chi Leng Leong, Sally Gowers, Xize Niu, Andrew De Mello, Martyn G Boutelle
9:45	(1510-3)	**Brain Tissue Response to Intra-Cortical Microelectrode Arrays** TRACY CUI, University of Pittsburgh
10:20		**Recess**
10:35	(1510-4)	**Micro-electrode Array Biosensors for Neurotransmitter Detection During Operant Conditioning** NIGEL T MAIDMENT, University of California, Los Angeles, Kate M Wassum, Hal G Monbouquette
11:10	(1510-5)	**Electrochemical Recordings in Animals and Humans: WINCS, MINCS, and Harmoni** KENDALL LEE, Mayo Clinic

SYMPOSIUM **Session 1520**

Science without Borders: Analytical Chemistry Opportunities in Brazil

arranged by Doriane Barreto, NurnbergMesse Brasil

Wednesday Morning, Room S405a

Lucio Angnes, University of Sao Paulo, Presiding

8:30		**Introductory Remarks - Lucio Angnes**
8:35	(1520-1)	**Analytical Chemistry and Quality of Life: Brazilian Contributions** CLÉSIA C NASCENTES, Federal University of Minas Gerais
9:10	(1520-2)	**Research Opportunities at Sao Paulo State (Brazil)** LUCIO ANGNES, Universidade de Sao Paulo
9:45	(1520-3)	**Analytical Chemistry Opportunities in Areas of Interest** MARIA LUIZA BRAGANCA TRISTAO, Petrobras
10:20		**Recess**
10:35	(1520-4)	**Opportunities in Analytical Chemistry** CRISTINA MARIA SCHUCH, Rhodia-Solvay Group
11:10	(1520-5)	**Brazil Scientific Mobility Program and New Opportunities in Analytical Chemistry** NATACHA CARVALHO FERREIRA SANTOS, CNPq -Brazil

ORGANIZED CONTRIBUTED SESSIONS **Session 1530**

New Technologies and Methods in Protein Quantitation for Biotherapeutics and Clinical Diagnostics

arranged by Mike Lee, Milestone Development Services and Gary A Valaskovic, New Objective

Wednesday Morning, Room S405b

Mike Lee, Milestone Development Services, Presiding

8:30	(1530-1)	**Enabling Label-Free Quantitation for Top Down Proteomics** PAUL M THOMAS, Northwestern University, Kyunggon Kim, Ryan T Fellers, John P Savaryn, Neil Kelleher, Ioanna Ntai
8:50	(1530-2)	**The Rapid Development and Integration of LC-MS-Based Bioanalytical Methods to Quantify Therapeutic and Target Proteins in Early Drug Discovery** TIMOTHY V OLAH, Bristol-Myers Squibb, John Mehl, Bogdan Sleczka, Eugene Ciccimaro, Celia D' Arienzo, Yongxin Zhu
9:10	(1530-3)	**Opening the Quant Faucet: Meeting the New Challenges of Protein and Small Molecule Quantitation — With High Performance, Robust Microflow LC-MS Solutions** SUBODH NIMKAR, AB SCIEX
9:30	(1530-4)	**Next Generation Plasma Collection Technology for Clinical and Pharmaceutical Applications** ROBERT E BUCO, Shimadzu Corporation, Fred Regnier, Jinhee Kim, Tim Woenker, Scott Kuzdzal, Jeff Dahl, Jeremy Post, Faith Hays
9:50		**Recess**
10:05	(1530-5)	**Validation of a Micro Flow LC-MS/MS Method for Large Molecule Bioanalysis** CASEY JOHNSON, Alturas Analytics, Inc., Chad Christianson, Jennifer Zimmer, Shane Needham
10:25	(1530-6)	**Breaking the Barriers for Sensitivity and Throughput with Nanospray Based Mass Spectrometry** GARY A VALASKOVIC, New Objective Inc.

ORGANIZED CONTRIBUTED SESSIONS **Session 1540**

Novel Application of Terahertz and Millimeter Waves in Spectroscopy and Imaging -

arranged by Anis K Rahman, Applied Research & Photonics
and Nachappa "Sami" Gopalsami, Argonne National Laboratory

Wednesday Morning, Room S501a

Anis K Rahman, Applied Research & Photonics, Presiding

8:30	(1540-1)	**Dendrimer Based Terahertz Spectroscopy Applications With Examples in Fullerenes and Single Nucleotide Polymorphism** ANIS K RAHMAN, Applied Research & Photonics, Aunik K Rahman
8:50	(1540-2)	**Millimeter Wave Remote Sensing of Nuclear Signatures NACHAPPA** "SAMI" GOPALSAMI, Argonne National Laboratory, Shaolin Liao, Thomas W Elmer, Eugene R Koehl, Sasan Bakhtiari, Apostolos C Raptis
9:10	(1540-3)	**Terahertz Sub-Surface 3D Nano-Scale Imaging for Semiconductor Inspection** AUNIK K RAHMAN, Applied Research & Photonics, Anis K Rahman
9:30	(1540-4)	**Application of Millimeter-Wave Technology to Remote Sensing of Biometric Signatures–A Review** SASAN BAKHTIARI, Argonne National Laboratory, Thomas W Elmer, Shaolin Liao, Nachappa "Sami" Gopalsami, Apostolos C Raptis, Ilya Mikhelson, Alan V Sahakian
9:50		**Recess**
10:05	(1540-5)	**Towards Microwave and Millimeter Wave 3D Real-Time Imaging** REZA ZOUGHI, Missouri University of Science and Technology, MT Ghasr, JT Case
10:25	(1540-6)	**A Novel Millimeter Wave and Terahertz Wave Interferometric Radar Architecture** SHAOLIN LIAO, Argonne National Laboratory, Sasan Bakhtiari, Thomas W Elmer, Nachappa "Sami" Gopalsami, Paul Raptis
10:45	(1540-7)	**Applications of Microwave and Millimeter Wave for Nondestructive Testing and** Evaluation (NDT&E) REZA ZOUGHI, Missouri University of Science and Technology
11:05	(1540-8)	**Novel Approaches to Significantly Enhance THz Emission and Detection Efficiency** HOOMAN MOHSENI, Northwestern University

ORAL SESSIONS **Session 1550**

Application of Bioanalytical Sensors

Wednesday Morning, Room S501bc

William R LaCourse, University of Maryland Baltimore County, Presiding

8:30	(1550-1)	**Rapid and Sensitive Detection of DPA Using a Nanopore Probe** SHUO ZHOU, Illinois Institute of Technology, Liang Wang, Yujing Han, Guihua Wang, Xiyun Guan
8:50	(1550-2)	**Enhanced Stability of Suspended Lipid Bilayers for Ion Channel Recordings and Biosensor Development** LEONARD K BRIGHT, University of Arizona, Christopher A Baker, Craig A Aspinwall
9:10	(1550-3)	**Cross-platform Optical and Mass Spectrometric Analysis with Calcinated Plasmonic Materials** SAMUEL HINMAN, University of California, Riverside, Chih-Yuan Chen, Quan Cheng
9:30	(1550-4)	**Surfactant-Induced Wetting of Hydrophobic Nanopores by Aqueous Solutions** ANGIE S MORRIS, University of Iowa, Yulia Skvortsova, M Lei Geng
9:50		**Recess**
10:05	(1550-5)	**Nanopore Stochastic Sensing of HIV-1 Protease** YUJING HAN, Illinois Institute of Technology, Liang Wang, Shuo Zhou, Xiyun Guan
10:25	(1550-6)	**Signal Amplification Strategies on Nucleic Acid-Based Lateral Flow Biosensors** GUODONG LIU, North Dakota State University
10:45	(1550-7)	**Directly Probing Key Protein-Lipid Interactions Mediating the Blood Coagulation Cascade Using Silicon Photonic Microring Resonators** ELLEN M MUEHL, University of Illinois at Urbana-Champaign, Ryan C Bailey, Jim H Morrissey, Courtney D Sloan, Josh M Gajsiewicz
11:05	(1550-8)	**Development of Radioluminescent pH Sensor Films for In Vivo Bacterial Infection Detection through Tissue** FENGLIN WANG, Clemson University, Yash Raval, Tzuen-Rong J Tzeng, John D DesJardins, Jeffrey N Anker

ORAL SESSIONS **Session 1560**

Biospectroscopic Methods for Binding Studies (Half Session)

Wednesday Morning, Room S501d

Paul Simone, The University of Memphis, Presiding

8:30	(1560-1)	**Highly Efficient Peptide Self-Assembled Monolayers to Reduce Non Specific Adsorption of Crude Cell Lysate on SPR Biosensors** ALEXANDRA AUBÉ, Université de Montréal, Julien Breault-Turcot, Jean-François Masson
8:50	(1560-2)	**Second Harmonic Correlation Spectroscopy: A New Method for Determining Surface Binding Kinetics and Thermodynamics** KRYSTAL L SLY, University of Utah, John C Conboy, Sze-Wing Mok
9:10	(1560-3)	**Rotation Dynamics of Gold Nanorods on Cell Membrane Studied with Confocal Resonance Scattering Microscopy** GUFENG WANG, North Carolina State University, Bhanu Neupane, Yaqing Zhao
9:30	(1560-4)	**Molecular Recognition and Dynamics of Dihydrofolate Reductase Studied with Atomic Force Microscopy** HOLLY MORRIS, University of Iowa

ORAL SESSIONS **Session 1570**

Chemometrics

Wednesday Morning, Room S502a

Stephen L Morgan, University of South Carolina, Presiding

8:30	(1570-1)	**Search Prefilters Coupled with a Cross Correlation Library Search Algorithm for Identification of Infrared Spectra of Clear Coat Paint Smears** BARRY K LAVINE, Oklahoma State University, Ayuba Fasasi, Nikhil Mirjankar, Matthew Allen
8:50	(1570-2)	**Chemometric Modeling of Microalgal Adaptations to Chemical Shifts in Marine Environments** FRANK VOGT, University of Tennessee, Lauren H White
9:10	(1570-3)	**Passive Acoustic Monitoring for Inhalation Device Performance Analysis** LARS KARLSSON, AstraZeneca R&D
9:30	(1570-4)	**Interpretation of NIR Spectra Using 1H-NMR and Sequential PLS** AMR S ALI, Biogen Idec, Maureen Lanan
9:50		**Recess**
10:05	(1570-5)	**Impact of Fluctuations in the First Dimension Sampling Phase on Peak Area Quantitation by PARAFAC Based Methods in Fast On-Line LC x LC** ROBERT C ALLEN, University of Minnesota, Marcelo R Filgueira, Peter W Carr, Sarah C Rutan
10:25	(1570-6)	**Removing Correlation Degeneracies in Spectral Angle-Based Hyperspectral Image Analyses** LEANNA N ERGIN, Cleveland State University, John F Turner
10:45	(1570-7)	**Unique Ion Filter: A Strategy for GC-MS Data Processing Prior to Chemometric Analysis** JAMES J HARYNUK, University of Alberta, Lawrence A Adutwum
11:05	(1570-8)	**Comprehensive Two-Dimensional Gas Chromatography – Mass Spectrometry Combined to Chemometric Analysis for Detection of Disease-Resistant Clones of Eucalyptus** LEANDRO WANG HANTAO, University of Campinas, Bruna Toledo, Alves de Lima Ribeiro Fabiana, Marilia Pizetta, Caroline Geraldi Pierozzi, Edson Luiz Furtado, Fabio Augusto

ORAL SESSIONS **Session 1580**

Environmental Analysis of Persistent and Toxic Compounds

Wednesday Morning, Room S502b

Jinesh Jain, URS Corporation, Presiding

8:30	(1580-1)	**Monitoring Endocrine Disruption in Japanese Medaka Fish Using Capillary Electrophoresis and Egg Hatching** VINCENT T NYAKUBAYA, West Virginia University, Brandon C Durney, Lisa A Holland
8:50	(1580-2)	**Graphene Oxide Based Sensors for Environmental Applications** PETER SHANTA, University of California, Riverside, Quan Cheng
9:10	(1580-3)	**Evaluation of a Single-Stage Consumable-Free Thermal Modulator for Comprehensive Two-Dimensional Gas Chromatography** MATTHEW EDWARDS, University of Waterloo, Tadeusz Gorecki, Alina Muscalu
9:30	(1580-4)	**GCxGC–TOFMS Investigation of Mixed-Halogen Dioxins and Furans Generated During Combustion** KARI L ORGANTINI, Pennsylvania State University, Elizabeth Humston-Fulmer, Joe Binkley, Mark Merrick, Frank Dorman
9:50		**Recess**
10:05	(1580-5)	**Rapid Separation of Hexabromocyclododecane Diastereomers and Tetrabromobisphenol-A Using a Novel Method Combining Convergence Chromatography and MS/MS Detection** DOUGLAS STEVENS, Waters Corporation, Lauren Mullin, Kenneth J Rosnack, Andrew Aubin, Jennifer Burgess, Bert van Bavel, Ingrid Ericson Jogsten, Dawei Geng
10:25	(1580-6)	**New Levels of Mass Spectral Selectivity for Pesticide Residue Analysis: GC/Q-TOF in the MS/MS Mode with Chemical Ionization** PHILIP L WYLIE, Agilent Technologies, Chris Sandy
10:45	(1580-7)	**Analysis of Cytostatic and Cytotoxic Agents in Wastewater, Surface Water and Drinking Water** JORDAN STUBLESKI, Pennsylvania State University, William H Campbell, Philip Smith, Frank Dorman

ORAL SESSIONS **Session 1590**

Food Science: Impurity Analysis and Content Determination

Wednesday Morning, Room S503a

Kenneth J Rosnack, Waters Corporation, Presiding

8:30	(1590-1)	**Pesticide Residues Analysis of Beer, Wine and their Agricultural Constituents (Hops, Grapes, Grains) Using QuEChERS Extraction and High-Throughput Sample Preparation** PATRICIA L ATKINS, SPEX CertiPrep, Matt Snyder
8:50	(1590-2)	**A Novel Approach to the Reduction of False Positive and Negative Identifications in Screening of Pesticide Residues in Food Analysis** KENNETH J ROSNACK, Waters Corporation, Severine Goscinny, Michael McCullagh, Kieran Neeson, Jeff Goshawk, David Eatough, Sara Stead, Ramesh Rao, Dominic Roberts
9:10	(1590-3)	**Characterization of Adulterated Olive Oils in Cases of Food Fraud by Comprehensive Two-dimensional Gas Chromatography with Time-of-Flight Mass Spectrometry** (GCxGC-TOFMS) ELIZABETH HUMSTON-FULMER, Leco Corporation, Jeff Patrick, Joe Binkley
9:30	(1590-4)	**Applications of Surface Enhanced Raman Spectroscopy in Food Science** LILI HE, University of Massachusetts Amherst
9:50		**Recess**
10:05	(1590-5)	**Impurity Isolation from Synthetic Dyes Using Mass-Directed Preparative Liquid Chromatography** RUI CHEN, Waters Corporation, Jo-Ann Jablonski, John P McCauley
10:25	(1590-6)	**Quantification and Stability Studies of Allicin in Fresh Garlic Extracts** YAN LIU, California State Polytechnic University Pomona, Kenneth Chong, Martha P Zamora, Dileshni A Tilakawardane, Nancy E Buckley
10:45	(1590-7)	**Speciation Analysis of Arsenic in Prenatal and Children's Dietary Supplements** MESAY WOLLE, Duquesne University, Mizanur Rahman, HM Skip Kingston, Matt Pamuku
11:05	(1590-8)	**The Determination of Benzo(a)pyrene in Vegetable Oil By Solid Phase Extraction** WANG RUYI, Bonna-Agela Technologies Inc., Wang Wan, Lu Guotao

ORAL SESSIONS **Session 1600**

FTIR/Raman Analytical Applications

Wednesday Morning, Room S503b

Richard W Bormett, Renishaw, Inc., Presiding

8:30	(1600-1)	**Surface Selection Rule of Infrared Diffuse Reflection Spectrometry for Analysis of Molecular Adsorbates on a Rough Surface of a Non-Absorbing Medium** TAKESHI HASEGAWA, Kyoto University, Seiya Morimine, Shingo Norimoto, Shimoaka Takafumi
8:50	(1600-2)	**Spectroscopic Assessment of a Full-Scale Collective Protection Filter System against Chemical Warfare Agents and Toxic Industrial Chemicals** SUN H MCMASTERS, US Army
9:10	(1600-3)	**Attenuated Total Reflectance Infrared Spectroscopy Applied to Forensic Analysis of Automotive Paints** BARRY K LAVINE, Oklahoma State University, Ayuba Fasasi, Nikhil Mirjankar, Koichi Nishikida
9:30	(1600-4)	**High Throughput Virtual Slit Technology: Benefits for Chemical Identification** JEFFREY T MEADE, Tornado Spectral Systems, Bradford B Behr, Yusuf Bismilla, Andrew T Cenko, Brandon DesRoches, Arie Henkin, Elizabeth A Munro, Jared Slaa, Scott Baker, David Rempel, Arsen R Hajian
9:50		**Recess**
10:05	(1600-5)	**Effect of Varying Balance Gas for FTIR Analysis** MONACA MCNALL, Air Liquide
10:25	(1600-6)	**A Novel Infrared Imaging Spectroscopy Equipped with a Near Common Light Path Interferometer** RYUJI TAO, Kagawa University, Akira Nishiyama, Kenji Wada, Ishimaru Ichiro, Toshihide Tani, Hiroki Hayashi
10:45	(1600-7)	**A Polarization Difference Technique for Surface-Enhanced Infrared Absorption Spectroscopy** TARO UCHIDA, Kitasato University, Takeshi Hasegawa, Masatoshi Osawa
11:05	(1600-8)	**Interrogation of the Structure of Polyglutamine Fibrils Using UV Resonance Raman Spectroscopy (UVRR)** DAVID PUNIHAOLE, University of Pittsburgh, Sanford A Asher

ORAL SESSIONS **Session 1610**

Mass Spectroscopy: 'Omics, Environmental and High Throughput Analytical

Wednesday Morning, Room S504a

Charles L Wilkins, University of Arkansas, Presiding

8:30	(1610-1)	**Identification of Bacteria in Complex Double-Blind Microorganism Mixtures by LC-ESI-MS/MS** A PETER SNYDER, Private Citizen, Rabih E Jabbour, Samir V Deshpande
8:50	(1610-2)	**High Resolution Matrix-Assisted in Vacuum (MAIV) by Fourier Transform Mass Spectrometry** CHARLES L WILKINS, University of Arkansas, Beixi Wang, Evgenia Akhmetova, Rohanna Liyanage, Sarah Trimpin
9:10	(1610-3)	**High Speed Capillary Electrophoresis Coupled to ESI-MS for the Analysis of Metabolites** SCOTT SARVER, University of Notre Dame, Norman J Dovichi, Nicole M Schiavone, Carlos Gartner, Roza Wojcik
9:30	(1610-4)	**Identification and Quantification of Hypocretin-1 in Cerebospinal Fluid of Narcoleptic Patients Using Nanoparticles and Isotope Dilution Mass Spectrometry** HEMASUDHA CHATRAGADDA, Duquesne University, HM Skip Kingston, Matt Pamuku, Birgitte R Kornum, Emmanuel Mignot
9:50		**Recess**
10:05	(1610-5)	**High Pressure Mass Spectrometry with Microscale Cylindrical Ion Trap Arrays** KENION BLAKEMAN, University of North Carolina at Chapel Hill, Craig A Cavanaugh, Kevin P Schultze, J Michael Ramsey
10:25	(1610-6)	**High Throughput Screening for Modulators of Sirtuin 1 Using Mass Spectrometry Plate Reader** SHUWEN SUN, University of Michigan, Robert Kennedy
10:45	(1610-7)	**A Microionizer for High Pressure Mass Spectrometry Using Air Buffer Gas** CRAIG A CAVANAUGH, University of North Carolina at Chapel Hill, Kenion Blakeman, Tina E Stacy, Stanley Pau, J Michael Ramsey
11:05	(1610-8)	**Oxidative Stress Diseases: A New Targeting Scheme** AO ZENG, Purdue University, Mary J Wirth, Fred E Regnier

ORAL SESSIONS **Session 1620**

Mass Spectroscopy: Bioanalytical

Wednesday Morning, Room S504bc

Sean Breyer, Breyer Foundation, Presiding

8:30	(1620-1)	**Building Supported Lipid Bilayers (SLBs) for Laser-Based Mass Spectrometry Imaging (MSI) of Lipid Domain Formation** VICTORIA L BROWN, North Carolina State University, Lin He, Tara N Moening
8:50	(1620-2)	**In Situ Protein Identification and Visualization Using Multiply Charged MALDI Mass Spectrometry Imaging** BINGMING CHEN, University of Wisconsin-Madison, Christopher B Lietz, Chuanzi Ouyang, Lingjun Li
9:10	(1620-3)	**Near-Field Laser Ablation Sample Capture for Mass Spectrometry Imaging** KERMIT K MURRAY, Louisiana State University, Suman Ghorai, Chinthaka Seneviratne
9:30	(1620-4)	**Nanopipettes as Sampling Tools and Reaction Vessels for MS Analysis** ALICIA K FRIEDMAN, Indiana University, Elizabeth M Yuill, Steven J Ray, Lane A Baker
9:50		**Recess**
10:05	(1620-5)	**Standard Curve Generation in MALDI and LC-MS Analyses by Isotopic N, N-Dimethylated Leucine (iDiLeu) Reagents for Absolute Quantitation of Peptides** TYLER J GREER, University of Wisconsin-Madison, Feng Xiang, Nicole Woodards, Lingjun Li
10:25	(1620-6)	**Cysteine-Focused Combined Precursor Isotopic Labeling and Isobaric Tagging (cPILOT) Enhanced Multiplexing** LIQING GU, University of Pittsburgh, Adam R Evans, Rena A Robinson
10:45	(1620-7)	**N,N-Dimethyl Leucine Tags for De Novo Peptide Sequencing: Neutron Encoding and Fragmentation Dynamics** CHRISTOPHER B LIETZ, University of Wisconsin-Madison, Ling Hao, Tyler J Greer, Dustin Frost, Zhidan Liang, Robert Cunningham, John Rogers, Lingjun Li
11:05	(1620-8)	**Molecular Imaging with C60 SIMS: Sample Preparation and Application to Single Neuron Analysis** ERIC J LANNI, University of Illinois at Urbana-Champaign, Jonathan V Sweedler, Stanislav S Rubakhin

ORAL SESSIONS **Session 1630**

Materials Science

Wednesday Morning, Room S504d

Sam Subramaniam, Miles College, Presiding

8:30	(1630-1)	**Novel Engineered Carbon Adsorbents Utilizing a Bonded Fullerene Phase Enable Unique SPE Efficacy** CONOR SMITH, United Science Corporation, Dwight Stoll, Jon Thompson
8:50	(1630-2)	**Particle Size Measurement Errors and Refractive Index Selection in Laser Diffraction** JEFFREY BODYCOMB, HORIBA Scientific, Ian Treviranus, Amy Hou, Kiwan Park, Brian Sears, Hirosuke Sugasawa, Shigemi Tochino, Makoto Umezawa
9:10	(1630-3)	**Nanoscale Infrared Spectroscopy of Fiber Composite Materials** MICHAEL LO, Anasys Instruments, Curtis Marcott, Qichi Hu, Craig B Prater, Kevin Kjoller
9:30	(1630-4)	**Filling in the Holes: Nanoscale Insight into Anti-Fouling Hybrid Xerogel Materials by Co-localized Atomic Force, Scanning Kelvin Probe and Confocal Raman Microscopies** JOEL F DESTINO, University at Buffalo - SUNY, Michael R Detty, Frank V Bright
9:50		**Recess**
10:05	(1630-5)	**Experimental and Theoretical Studies on Molecular Weight Determination of Organic Vapors Using a Quartz Crystal Microbalance with Dissipation Monitoring** BISHNU P REGMI, Louisiana State University, Isiah M Warner, Nicholas Speller, Susmita Das
10:25	(1630-6)	**Development of ECL Electrospun Nanofibers** MICHAEL BEILKE, The Ohio State University, Susan V Olesik
10:45	(1630-7)	**Modifications to Known Cationic Conjugated Polythiophenes for Improved Fluorescence Detection of MicroRNA** THOMAS E CHASE, North Carolina State University, Shantan Krovvidi, Lin He
11:05	(1630-8)	**Photoelectrochemical Studies of Bare and Modified TiO2 Nanoparticles** MARIO ALPUCHE-AVILES, University of Nevada, Reno, Ashantha Fernando, Suman Parajuli, Pushpa Chhetri

ORAL SESSIONS **Session 1640**

Pharmaceutical: Others (Half Session)

Wednesday Morning, Room S501d

Paul Simone, The University of Memphis, Presiding

10:05	(1640-1)	**Pharmaceutical Solid-State Stressed Stability Investigation by Using Moisture-Modified Arrhenius Equation and JMP Statistical Software** MINGKUN FU, Millennium: The Takeda Oncology Company, Michael Perlman
10:25	(1640-2)	**Accurate Determination of Proteins Diffusion Coefficient by Fast Fourier Transformation with Whole Column Imaging Detection (WCID)** ATEFEH SADAT ZARABADI, University of Waterloo, Janusz Pawliszyn
10:45	(1640-3)	**3D Printed Fluidic Devices: Revolutionizing Automated, In Vitro Pharmacokinetic Studies** SARAH Y LOCKWOOD, Michigan State University, Dana Spence
11:05	(1640-4)	**Impact of Hydration State and Molecular Oxygen on the Chemical Stability of Levothyroxine Sodium** MAZEN L HAMAD, University of Hawaii at Hilo, William Engen, Ken Morris

ORAL SESSIONS **Session 1650**

X-Ray Techniques

Wednesday Morning, Room S505a

Dean Tzeng, The Pittsburgh Conference, Presiding

8:30	(1650-1)	**Potential Applications of X-Ray Photoelectron Spectroscopy (XPS) for Forensic Science** BRIAN R STROHMEIER, Thermo Fisher Scientific
8:50	(1650-2)	**High Resolution X-Ray (hiRX) Characterization of Pu Content in High Salt Matrices** GEORGE J HAVRILLA, Los Alamos National Lab, Kathryn G McIntosh, Velma Montoya, Eli J Berg
9:10	(1650-3)	**Characterization of Metal Doped Polymer Capsules Using Confocal Micro X-ray Fluorescence Spectroscopy and X-Ray Computed Tomography** NIKOLAUS CORDES, Los Alamos National Lab, George J Havrilla, Kimberly Obrey, Igor Usov, Brian M Patterson
9:30	(1650-4)	**Analysis for Metals in Nail Polish by Wavelength Dispersive X-ray Fluorescence (WDXRF)** ANDREA MCWILLIAMS, Research Triangle Institute, Michael Levine, Lauren Felder, Al Martin
9:50		**Recess**

10:05 (1650-5) **Remember the Colors: XRF and SEM Analysis of Fresco Pigment from the Alamo** NICOLE FELDMAN, Trinity University, Pamela J Rosser, Michelle M Bushey

10:25 (1650-6) **Integrated Platform for Combined XRD and SHG/TPE-UVF Measurements for Identification and Centering of Protein Crystals** CHRISTOPHER M DETTMAR, Purdue University, Garth J Simpson, Justin Newman, Scott Toth, Michael Becker, Robert Fischetti

POSTER SESSION — Session 1660

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

General Interests: Lab Informatics, Validation, Software and Process Analytics

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1660-1 P) **Safety Management in Multidisciplinary Shared Facilities** SHUYOU LI, Northwestern University, Suresh V Mallipeddi, Steven Karlman, Tera Moskal, Vinayak P Dravid

(1660-2 P) **Direct Access to Chromatography Data System through Smart Device** TOSHINOBU YANAGISAWA, Shimadzu Corporation, Masatoshi Takahashi, Ken Matama, Takeshi Yoshida, Yuji Watanabe, Ryuji Nishimoto

(1660-3 P) **FT-IR Method Validation for Measuring PPB Level Moisture in Phosphine Cylinders** WENWEN ZHANG, Matheson Trigas, Joshua Cooper, Mitch Owens, Dan Chase

(1660-4 P) **"Stealth" Nanobeacons for Preventing Counterfeit Products** TAKAO FUKUOKA, University of Hyogo/Archilys, Yasushige Mori

(1660-5 P) **Universal Analyzer for Fluidic Systems** HENDRIK FISCHER, Hamburg University of Technology, Joern Frank, Uwe Grosse-Wortmann, Gerhard Matz

(1660-6 P) **Spot the Difference: Novel Software Developments for Comparative Analysis of Complex Mixtures** NICOLA M WATSON, Markes International, Vanessa Frost Barnes, Charlie Haws, Laura McGregor, Nick Bukowski, Patrick Henry, Joe Blanch, Steve Smith

(1660-7 P) **Convolution of Currents at Electroinactive Films on Electrodes** JEFFREY LANDGREN, University of Iowa, Heung Chan Lee, Krysti L Knoche, Johna Leddy

(1660-8 P) **New Laser Technology to be Used for Biogas, Biosyngas and Biomethane Analysis** ONY RABETSIMAMANGA, GDF SUEZ - CRIGEN, Jean-Philippe Leininger, Etienne Basset, Alice Vatin, Cyrille Levy

(1660-9 P) **Surface-Enhanced Raman Spectroscopy Based on Nanoporous Waveguide Resonance for Biosensing** WEIQING XU, Jilin University, Fu Cuicui, Gu Yujiao, Xu Shuping

(1660-10 P) **Automated On-Line UHPLC Analysis Enabled by a Novel Process Sample Manager** AARON D PHOEBE, Waters Corporation, Sara Sadler, Graham B Jones, Robert J Tinder, Craig H Dobbs, Charles H Phoebe

(1660-11 P) **Quantitative Analysis of Hydrogen Peroxide Down to 1 µg/L in Ultrapure Water Using Palladium Catalysts for Preparing Blank Water** MASAMI MURAYAMA, Organo Corporation, Daisaku Yano, Koji Yamanaka

(1660-12 P) **Automatic Twin Vessel Recrystallizer: Absolute Purity Evaluation by Determination of Criterial T0 Value for 100% Pure Compound by DSC** OSAMU NARA, Tohoku Pharmaceutical University

(1660-13 P) **Baseline Water Analysis Measurements of Zurich Bog, New York** BENJAMIN J HAYWOOD, St. John Fisher College, Kimberly Chichester, Kenneth H Townsend

(1660-14 P) **Flow-Through System for the Generation of Standard Aqueous Solution of UV Filters and Biocides** FARDIN AHMADI, University of Waterloo, Janusz Pawliszyn, Chris Sparham

(1660-15 P) **Formation Constant of Transition Metal Chelates with 2,2′ Bipyridly Amine, 1-3 and 1-2 Diamino Propane** MANISH PRAVINCHANDRA BRAHMBHATT, Sheth M N Science College

(1660-16 P) **Novel Ion-Exchange Resin based on Styrene-Maleic Anhydride Copolymer** JAYANTIBHAI A CHAUDHARI, Shri R K Parikh Arts and Science College

(1660-17 P) **Electronic Wireless Sensing of Chemical Vapors and Temperature with a Smartphone** JOSEPH M AZZARELLI, Massachusetts Institute of Technology (MIT), Katherine A Mirica, Jens B Ravnsbaek, Timothy M Swager

(1660-18 P) **A Novel Software Simulation Package for 3D Modeling of Linear Ion Traps** BORIS BRKIC, University of Liverpool, John R Gibson, Stamatios Giannoukos, Stephen Taylor

(1660-19 P) **Matrix Effects on Boron Containing Materials Due to Laser Ablation Molecular Isotopic Spectrometry (LAMIS)** STACI R BROWN, Florida A & M University, Charlemagne A Akpovo, Jorge Martinez, Alan Ford, Kenley Herbert, Lewis Johnson

(1660-20 P) **Chemical Adsorption Methods for CeO2 and ZrO2 Oxides** ANDREW D DAMICO, Micromeritics, Onjae LaMont, Sarah Schimming, Carsten Sievers

POSTER SESSION — Session 1670

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Liquid Chromatography/Mass Spectrometry Applications

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1670-1 P) **Using the 2nd HPLC Dimension to Add the Power of Accurate Mass to Traditionally Non MS Applications** SUSAN DANTONIO, Agilent Technologies, Lynne Marshall, Rita Steed, Patrick Coleman

(1670-2 P) **Withdrawn**

(1670-3 P) **Parameters Affecting the Performance of LC-HRMS Screening Methods for Multiclass Screening of 600 Organic Contaminants in Food Based on Accurate-Mass Database** JUAN F GARCIA-REYES, University of Jaen, Patricia Perez-Ortega, Antonio Molina-Diaz

(1670-4 P) **Coupling MS to Fast Online Comprehensive Two-Dimensional Liquid Chromatography: Potential of Using 1 mm vs 2.1 mm id Columns** IMAD A HAIDAR AHMAD, University of Minnesota, Brian B Barnes, Allen C Robert, Peter W Carr

(1670-5 P) **A Reversed-Phase LC-MS/MS Method for the Quantitation of Ethyl Glucoronide and Ethyl Sulfate in Human Urine** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Chris Denicola, Paul Connolly

(1670-6 P) **Simultaneous Determination of an Anti-Cancer Drug Temozolomide Capsules Dosage Form in Pharmaceutical Preparation by High-Performance Liquid Chromatography** RAKESHKUMAR V MEHTA, L M College of Pharmacy

(1670-7 P) **The Determination of Caffeic Acid in Tobacco Filler of Cigarettes by High-Performance Liquid Chromatography – Tandem Mass Spectrometry** PHUONG NGAC, Centers for Disease Control and Prevention, Roberto Bravo, Clifford H Watson

(1670-8 P) **Mix-Mode Chromatographic Separation of 12 Mono-Hydroxylated Brominated Biphenyl Ethers in Human Serum** SYRAGO (SISSY) PETROPOULOU, Cal EPA/DTSC, Wendy Duong, Zachary T Smith, Myrto Petreas, June-Soo Park

(1670-9 P) **LC-MS/MS Analysis of Bisphenol A and Other Brominated Phenols in Human Serum Using 96 Well Plate Phospholipid Removal Plate and No Additional SPE** SYRAGO (SISSY) PETROPOULOU, Cal EPA/DTSC, Zachary T Smith, Myrto Petreas, June-Soo Park

(1670-10 P) **Determination of Perfluorooctanoic Acid (PFOA) from the Surface of Cookware Under Simulated Cooking Conditions Using Accelerated Solvent Extraction (ASE) and LC/MS/MS** CHANGLING QIU, South Dakota State University, Douglas Raynie

(1670-11 P) **LC/UV/MS Analysis of Monitoring Bioethanol Manufacturing Process Using Polymer Based Multi-solvent SEC Column** JUNJI SASUGA, Showa Denko KK, Melissa Turcotte, Ronald Benson

(1670-12 P) **LC/MS Analysis of Choline and Acetylcholine in Living Organisms Using Polymer-Based Cation IC Column** JUNJI SASUGA, Showa Denko KK, Ritsuko Wakayama, Melissa Turcotte, Ronald Benson

(1670-13 P) **Degradation-Resistant Peptides: Do They Contain D-Amino Acids?** HUA-CHIA TAI, University of Illinois at Urbana-Champaign, Itamar Livnat, Stanislav S Rubakhin, Jonathan V Sweedler

(1670-14 P) **Downscaling Proteome Profiling: Toward Single Cell Proteomics** MASAKI WAKABAYASHI, University of Illinois at Urbana-Champaign, Jordan Aerts, Stanislav S Rubakhin, Yasushi Ishihama, Jonathan V Sweedler

(1670-15 P) **Hepatocyte Spheroid Array Kit as a Tool for Predicting In Vivo Drug Metabolism** TATSUYUKI KANAMORI, National Research Institute of Police Science, Yamamuro Tadashi, Kuwayama Kenji, Tsujikawa Kenji, Iwata Yuko, Inoue Hiroyuki

(1670-16 P) **Studying Cell Signaling By Using a Microfluidic Device Coupled With HPLC-MS/MS** CASSANDRA DIANE MCCULLUM, Jackson State University, Xiangtan Li, Yiming Liu, Paul B Tchounwou

(1670-17 P) **Comparative Proteomic Analysis of Secretome in Vascular Smooth Muscle Cells by Label-free Quantitation via Data-Independent Acquisition (DIA) Mass Spectrometry** CHENXI YANG, University of Wisconsin-Madison, Di Ma, Xudong Shi, Craig Kent, Lingjun Li

(1670-18 P) **Formulation and Development of In Situ Forming Thermosensitive Injectable Hydrogel for the Delivery of PEGylated Melphalan Conjugate** AMIT ALEXANDER, Ravishankar Shukla University, Swarnlata Saraf, Shailendra Saraf

(1670-19 P) **Simultaneous Detection of Eight Urinary Pteridines and Creatinine by Ultra-Fast Liquid Chromatography – Tandem Mass Spectrometry** CASEY BURTON, Missouri University of Science and Technology, Henok Abshiro, Sanjeewa Gamagedara, Honglan Shi, Yinfa Ma

(1670-20 P) **Using Atmospheric Pressure Chemical Ionization High Resolution Mass Spectrometry as a Tool for the Detection and Identification of Nitrated and Oxygenated Polycyclic Aromatic Hydrocarbons** RICHARD COCHRAN, University of North Dakota, Alena Kubatova

(1670-21 P) **Carbohydrate Profiling of Therapeutic Glycoproteins by Mass Spectrometry and Anion Exchange Chromatography Coupled with Pulsed Amperometric Detection** ANDREA GRAY, University of Maryland, Baltimore County, Shaunak Uplekar, William LaCourse, Govind Rao

(1670-22 P) **Molecular Weight Analysis of Macromolecular Complexes by macroIMS** ELISABETH LOECKEN, TSI, Inc., Axel Zerrath

(1670-23 P) **Rapid, Minimally Invasive Metabolomic Study of Amazonian Plants Using In Vivo Microextraction and LC-MS** MARCEL FLORIN MUSTEATA, Albany College of Pharmacy and Health Sciences, Manuel Sandoval, Juan M Ruiz, William Millington

(1670-24 P) **Curtain Flow Chromatography - Improve Sensitivity and Efficiency in HPLC** LUISA PEREIRA, Thermo Fisher Scientific, Anthony Edge, Dafydd Milton, Harald Ritchie, Andrew Shalliker

(1670-25 P) **Withdrawn**

(1670-26 P) **Per- and Polyfluoroalkyl Substances in Selected Sewage Sludge in Nigeria** OMOTAYO K SINDIKU, University of Ibadan, Nigeria

(1670-27 P) **Progress Towards the Determination of Protein Bound 3-Nitrotyrosine (P-3NY)** JOSHUA WOODS, University of Kansas, Jordan Stobaugh, Todd Williams, James W Jorgenson, Christian Schoneich, John Stobaugh

(1670-28 P) **A Novel Method for Identification and Relative Quantification of N-terminal Peptides Using Metal Element Chelated Tags Coupled with Mass Spectrometry** YANGJUN ZHANG, Beijing Institute of Radiation Medicine, Hui Yan, Nannan Li, Feiran Hao, Jiabin Li, Fang Tian, Xiaohong Qian

POSTER SESSION — Session 1680

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Mass Spectroscopy: General Interest

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1680-1 P) **Proton-Transfer-Reaction Time-of-Flight Mass Spectrometry (PTR-TOFMS): Latest Improvements in Selectivity and Sensitivity** ALFONS JORDAN, IONICON Analytik GmbH., Lukas Maerk, Christian Lindinger, Eugen Hartungen, Matteo Lanza, Simone Juerschik, Gernot Hanel, Jens Herbig, Lukas Fischer, Philipp Sulzer, Tilmann D Maerk

(1680-2 P) **Simultaneous Detection with Different Compensation Voltages of FAIMS Using an Array Ion CCD Detector** YUICHIRO HASHIMOTO, Hitachi, Ltd., Masao Suga, Hideki Hasegawa, Hiroyuki Satake

(1680-3 P) **Determination of Tetracyclines in Surface Water by Ultra High Performance Liquid Chromatography/Tandem Mass Spectrometry** DONG HENGTAO, Shimadzu

(1680-4 P) **Pulsed Desorption Electrospray Ionization Mass Spectrometry** TROY COMI, University of Illinois at Urbana-Champaign, Richard Perry

(1680-5 P) **Withdrawn**

(1680-6 P) **Improved ESI-MS Detection of Phosphorothioate Pesticides Through Complexation with Ag+ and Cu2+** ADETAYO M MUSTAPHA, University of Idaho, Sofie P Pasilis

(1680-7 P) **Enhanced Characterization of Hydrocarbons by Selective Ionization** NICOLA M WATSON, Markes International, Charlie Haws, Vanessa Frost Barnes, Laura McGregor, Nick Bukowski, Joe Blanch, Steve Smith, Pierre Schanen, Gerhard Horner

(1680-8 P) **Determination of Multiple Pesticide Residues in Animal Foods by On-Line Gel Permeation Chromatography/Gas Chromatography/Mass Spectrometry** YE YING, Shimadzu (China) Co., Ltd.

(1680-9 P) **Determination of Dithiocarbamate Pesticide Residues in Fruits and Vegetables by SHS-GC-TOFMS According to Method EN 12396-2** DANIELA CAVAGNINO, DANI Instruments SpA, Antonella Siviero

(1680-10 P) **Characterization of Eco-Friendly Cutting Fluid Derived from Cottonseed Oil via Electrospray Ionization Tandem Mass Spectrometry** VIVIANE F SILVA, INMETRO, Maíra Fasciotti, Luciano N Batista, Maurício G Fonseca, Luiz C Santa Maria, Valnei S Cunha

(1680-11 P) **A New Splitting Method for Both Analytical and Preparative LC/MS** HAO CHEN, Ohio University, Yi Cai

(1680-12 P) **Determination of Internal Energy Distributions for Laser Electrospray Mass Spectrometry Using Thermometer Ions and Other Biomolecules** PAUL M FLANIGAN, Temple University, Fengjian Shi, Johnny J Perez, Santosh Karki, Conrad Pfeiffer, Chris Schafmeister, Robert J Levis

(1680-13 P) **Rapid Identification of Microorganisms by Touch Spray and Paper Spray Ambient Ionization** AHMED M HAMID, Purdue University, Alan K Jarmusch, Kevin S Kerian, Robert G Cooks

(1680-14 P) **Collision Induced Dissociation at 1 Torr in a Microscale Ion Trap Mass Spectrometer** ANDREW HAMPTON, University of North Carolina at Chapel Hill, J Michael Ramsey

(1680-15 P) **Using Ion Mobility Measurements to Determine the Water Content of a Drift Gas in Ion Mobility Spectrometry** BRIAN C HAUCK, Washington State University, Aurora E Clark, William F Siems, Charles S Harden, Herbert H Hill

(1680-16 P) **Liquid Sample Desorption Electrospray Ionization Mass Spectrometry (DESI MS) of Analytes in Aqueous Solutions** WEN DONQ LOOI, University of Florida, Anna Brajter-Toth

(1680-17 P) **On-Plate Selective Enrichment and Self-Desalting of Peptides/Proteins for Direct MS Analysis** NAN LU, Jilin University, Yandong Wang, Feng Liu

(1680-18 P) **Preparation of Aflatoxin B1-Lysine for Analytical Purposes** CARLOS A OLIVEIRA, University of São Paulo, Daiane C Sass, Alessandra V Jager, Fernando G Tonin, Roice E Rosim, Maurício G Constantino

(1680-19 P) **Surface Analysis of Coated Papers by ToF SIMS** PIETER SAMYN, University of Freiburg

(1680-20 P) **Customized Vacuum Systems- Transferring an Idea to an Optimized Vacuum Solution** TOBIAS STOLL, Pfeiffer Vacuum, Jan Hofmann, Michael Schweighofer

(1680-21 P) **Gas-Phase Studies on the Reactivity of Aromatic Biradicals Towards Amino Acids** WEIJUAN TANG, Purdue University, George O Pates, Huaming Sheng, Asheley R Wittrig, John J Nash, Hilkka I Kenttamaa

(1680-22 P) **Combining DESI-MS Imaging with Multivariate Statistical Tools: A Novel Approach for the Analysis of Paper Degradation** THOMAS ZWECKMAIR, BOKU Vienna, Ute Henniges, Thomas Rosenau, Antje Potthast

POSTER SESSION — Session 1690

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Polymer and Plastic Analysis

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1690-1 P) **Addressing the Challenges: Improving Polymer Characterization by Size Exclusion Chromatography** AMANDAA K BREWER, Tosoh Bioscience LLC

(1690-2 P) **Surface Spectroscopic Study of New Anti-Bio Fouling Polymers** CHUAN LENG, University of Michigan, Zhan Chen

(1690-3 P) **Capillary Channeled Polymer (C-CP) Fibers Modified with Cibacron Blue Dye for the Removal of Bovine Serum Albumin** MARISSA PIERSON, Clemson University, R Kenneth Marcus

(1690-4 P) **Analysis of Clear Finishes for Wood Using Pyrolysis-GC/MS** THOMAS WAMPLER, CDS Analytical, Karen Sam, Steve Wesson

(1690-5 P) **Development of a Simple and Rapid Ultra High Pressure Liquid Chromatography (UHPLC) Method to Determine Formic Acid, Acetic Acid and Citric Acid Leaching from Medical Device Plastics** DUJUAN LU, Fresenius Kabi, Jianfeng Hong, Robert Payton

(1690-6 P) **Polymerized Poly(ethylene glycol) Diacrylate Microfluidic Membrane Valves** CHAD ROGERS, Brigham Young University, Joseph Oxborrow, Long-Fang Tsai, Gregory Nordin, Adam T Woolley

(1690-7 P) **Effect of Pressure on the Catalytic Hydrogenation of Pyrolysis Products** THOMAS WAMPLER, CDS Analytical, Karen Sam, Steve Wesson

(1690-8 P) **Synthesis and Characterization of Novel Azo Polyurea Dyes with Good Dyeing Properties** SMITA M JAUHARI, Sardar Vallabhbhai National Institute of Technology, Kishor M Desai, Medha M Joshi

(1690-9 P) **Topology Optimization of Super Hydrophobic Surfaces** NIS KORSGAARD, Technical University of Denmark, Andrea Cavalli, Rafael Taboryski

(1690-10 P) **Simultaneous TG-DSC-FT-IR-GC-MS Measurements on Polyacrylnitrile (PAN)** ROBERT PIEPER, NETZSCH Instruments North America, LLC, Ekkehard Post, Peter Vichos

(1690-11 P) Withdrawn

(1690-12 P) **A Multiple GC-MS and LC-MS Approach for the Identification and Quantitation of Polymer Additives** JOHN THOMAS ROY, Impact Analytical, Amy Porter

POSTER SESSION — Session 1700

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Process Analytical Chemistry

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1700-1 P) **Ultrapure Methylene Chloride for Interference-Free Analytical Work** SUBHRA BHATTACHARYA, Thermo Fisher Scientific, Eric Oliver, Mark Jasco, Deva Puranam, Stephen Roemer

(1700-2 P) **Reaction Mechanism Determination with React NMR Coupled with On-Line HPLC and HR-MS** BRADLEY CAMPBELL, Eli Lilly and Company, Jonas Y Buser, Lauren E Click, Todd D Maloney, Adam D McFarland

(1700-3 P) **Determination of Clopyralid Levels in Local Community Composts** DANIELLE M KIECK, St. John Fisher College, Kimberly Chichester

(1700-4 P) **SERS Investigation of pH Effect on the Adsorption Behavior of 4-Carboxythiophenol on Ag Surface** SZETSEN LEE, Chung Yuan Christian University, Chun-Hsien Ho

(1700-5 P) **Characterization of Coal and Its By-Products Using Borate Fusions and ICP-OES Analyses** MARIE-EVE PROVENCHER, Claisse, Corporation Scientifique, Janice Pitre, Melanie Bedard, John A Anzelmo

(1700-6 P) **Spectrophotometric Determination of Copper Using 2-Hydroxy-4-Isobutoxy Acetophenone Oxime** SANJAYKUMAR S SHAH, Shri VI Shah Commerce College, Janakkumar R Shukla

(1700-7 P) **Determination of Critical Micelle Concentration of Cationic Surfactants by Surface-Enhanced Raman Scattering** YAM SHRESTHA, North Carolina Central University

(1700-8 P) **Transmission Measurement and Diffuse Reflectance Measurement of Tablet in Very Short-time by Using Compact, High-Speed and High-Sensitive Near Infrared Spectrometer** KODAI MURAYAMA, Yokogawa Electric Corporation, Ditaro Ishikawa, Takuma Genkawa, Hiroyuki Sugino, Makoto Komiyama, Takashi Tsuneoka, Ozaki Yukihiro

(1700-9 P) **2-Hydroxy-4-Isobutox-5-Bromo Acetophenone Tiosemicarbezone (Hibbat) as a Spectrophotometric Reagent for Copper** SANJAYKUMAR S SHAH, Pilvai College, Milin A Shah, Kalpesh S Parikh

(1700-10 P) **Real-Time Determination of Metal Concentrations in Liquid Flows Using Micro-Plasma Emission Spectroscopy** KALLE BLOMBERG VON DER GEEST, University of Oulu

(1700-11 P) **Direct Headspace Analysis of VOCs in Water Using MRR Spectroscopy** BRENT J HARRIS, BrightSpec, Justin L Neill, Matthew T Muckle, Robin L Pulliam, Dave A McDaniel, Roger L Reynolds, Brooks H Pate

(1700-12 P) **New Techniques for Direct Analysis of Gas Mixtures based on MRR Spectroscopy** JUSTIN L NEILL, BrightSpec, Brent J Harris, Matt T Muckle, Robin L Pulliam, Dave A McDaniel, Roger L Reynolds, Brooks H Pate

(1700-13 P) **The Power of Spatial Resolution, Pixel I.D., and Pixel Counting in Quantitative Chemical Imaging with Vibrational Microspectroscopy** DAVID L WETZEL, Kansas State University, Mark D Boatwright

POSTER SESSION — Session 1710

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SEAC: Society for Electroanalytical Chemistry Poster Session

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1710-1 P) **Nanomolar Detection of Cd2+, Ag+, and K+ Using Paper-Strip Ion-Selective Electrodes** SAMANTHA T MENSAH, University of Central Florida, Percy Calvo-Marzal, Karin Chumbimuni-Torres

(1710-2 P) **Interfacial Electron Transfer Kinetics across Single Layer Graphene** JINGSHU HUI, University of Illinois at Urbana-Champaign, Joaquin Rodriguez-Lopez, Adam Chinderle

(1710-3 P) **Observation and Quantification of Electrogenerated Chemiluminescence at Single Layer Graphene Electrodes Using Scanning Electrochemical Microscopy** TERESA C CRISTAELLA, University of Illinois at Urbana-Champaign, Jingshu Hui, Adam Chinderle, Daniel Ziegler, Mei Shen, Joaquin Rodriguez-Lopez

(1710-4 P) **Study of Degradation of Bimetallic Nanoparticle Electrocatalysts Using Micro-ITIES Interfaces as SECM Probes** BURTON H SIMPSON, University of Illinois at Urbana-Champaign, Colin B Kramer, Garrett Hoepker, Mei Shen, Paramaconi B Rodriguez, Joaquin Rodriguez-Lopez

(1710-5 P) **Investigation and Characterization of Potentiometric-Scanning Ion Conductance Microscopy** ANNA E WEBER, Indiana University, Yi Zhou, Lushan Zhou, Lane A Baker

(1710-6 P) **Elimination of the Light Sensitivity of Ionophore-Based Ion-Selective Electrodes** XU ZOU, University of Minnesota, Koichi Nishimura, Li D Chen, Philippe Buhlmann

(1710-7 P) **Development of Novel Cations to Extend the Electrochemical Window of Ionic Liquids: Improving the Energy Density of Nanostructured Supercapacitors for Electrical Energy Storage** MARAL PS MOUSAVI, University of Minnesota, Philippe Buhlmann

(1710-8 P) **Highly Fluorinated Polymers for Ion-Selective Electrodes** JESSE L CAREY, University of Minnesota, Philippe Buhlmann

(1710-9 P) **Biofouling of Ion-Selective Electrode Membranes: The Role of Ionic Site Leaching into Biological Samples** ADAM J DITTMER, University of Minnesota, Philippe Buhlmann

(1710-10 P) **Complexation of Silver Ions by Natural Organic Matter as Studied Using Fluorous-Phase Ion-Selective Electrodes** CARLOS E PÉREZ DE JESÚS, University of Puerto Rico at Mayagüez, Maral PS Mousavi, Ian Gunsolus, Christy L Haynes, Philippe Buhlmann

(1710-11 P) **Electrochemical Nanosampler** YUN YU, Queens College—CUNY, Jean-Marc Noël, Michael V Mirkin, Yang Gao, Gary Friedman, Yury Gogotsi

(1710-12 P) **CNTs Based Disposable Potentiometric Sensor for Urea Detection** EWA JAWORSKA, Warsaw University, Agata Michalska, Krzysztof Maksymiuk

(1710-13 P) **Electrochemical and Spectroscopic Characterization of Safranin O and Their Analytical Utilization** MIAN JIANG, University of Houston Downtown, Henry Largo, Andrew Jones, Alexis Woodlard

(1710-14 P) **Donnan Failure of Ion-Selective Electrodes with Hydropholic Ion-Exchanger Membranes** SHOGO OGAWARA, University of Minnesota, Xu Zou, Jesse L Carey, Philippe Buhlmann

POSTER SESSION **Session 1720**

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Separation Sciences: Bioanalytical and Pharmaceutical

Wednesday Morning, Exposition Floor, Back of Aisles 1000-2500

(1720-1 P)	**High Resolution Separation of Proteins Using Two-Dimensional Capillary Electrophoresis** RYAN FLAHERTY, University of Notre Dame, Bonnie J Huge, Norman J Dovichi
(1720-2 P)	**Protein A Modification of Capillary-Channeled Polymer (C-CP) Fibers for the Capture and Recovery of Immunoglobulin G (IgG)** ABBY SCHADOCK-HEWITT, Clemson University, R Kenneth Marcus
(1720-3 P)	**Cyclodextrin Polymer/Fe3O4 Nanocomposites as Solid Phase Extraction Material Coupled with UV-VIS Spectrometry for the Analysis of Rutin** ZHU XIASHI, Yangzhou University
(1720-4 P)	**2D-LC-CAD-MS Method for the Characterization and Stability Study of Polysorbate 20 in Protein Formulations** YI LI, Genentech, Daniel Hewitt, Andrea Ji, Taylor Y Zhang, Kelly Zhang
(1720-5 P)	**The Development of Unique HPLC and SFC Stationary Phases that Utilize Advanced Particle Technologies** MATTHEW PRZYBYCIEL, ES Industries, David Kohler
(1720-6 P)	**A Study of Four Stress Conditions on the Degradation of Bisphenol A (BPA)** KIMBERLY CHICHESTER, St. John Fisher College, Edward Freeman
(1720-7 P)	**High Resolution Separation Media for High Throughput Monoclonal Antibody Analysis** SRINIVASA RAO, Thermo Fisher Scientific, Julia Baek, Ilze Birznieks, Yury Agroskin, Christopher Pohl
(1720-8 P)	**Ultraviolet Radiation Enhances the Glycation of Human Serum Albumin: A Study Involving Quantification of Carboxylmethyl Lysine Derivatives** WEIXI LIU, University of Rhode Island, Menashi A Cohenford, Leslie Frost, Joel A Dain
(1720-9 P)	**Separation of Half-mAb and Half-mAb Equivalents with High Resolution Using Size Exclusion Chromatography Packed with a Unique Controlled Pore Technology** JUSTIN STEVE, Tosoh Bioscience LLC, Atis Chakrabarti
(1720-10 P)	**Stability Indicating Method Development and Validation for the Determination of Prednisolone Acetate in Raw Material and Degradant Products Utilizing Reversed-Phase Liquid Chromatography** MONIKA BOBA, Northeastern Illinois University, John Albazi
(1720-11 P)	**Separation of Coumarin, Vanillin and Ethyl Vanillin by Using Subcritical Water Chromatography** BERKANT KAYAN, Aksaray University, Mehmet Odaba ı, Sema Akay
(1720-12 P)	**New Stationary Phase for Separation of Coumarin Derivates by Using HTLC** BERKANT KAYAN, Aksaray University, Mehmet Odaba ı, Sema Akay, Murat Sener
(1720-13 P)	**Analysis of the Metabolic Effects of Diabetes on the Structure and Function of Glycated Human Serum Albumin** RYAN E MATSUDA, University of Nebraska-Lincoln, Krina Joseph, Jeanethe Anguizola, Omar Barnaby, Venkata Kolli, Eric D Dodds, Ronald Cerny, David S Hage
(1720-14 P)	**Enantiomeric Separation of Novel Bioactive Analogs of Indole Phytoalexins Using Cyclofructan-Based Chiral Stationary Phase** MARIANNA MOSKA OVÁ, PJ Šafárik University, Rastislav Serbin, Ján Petrovaj, Mariana Budovská, Daniel W Armstrong, Ta ána Gondová
(1720-15 P)	**Protein Dielectrophoresis Using Insulator-Based Devices: Implications at Nanoconstrictions** ASUKA NAKANO, Arizona State University , Fernanda Camacho-Alanis, Alexandra Ros
(1720-16 P)	**Chromatographic Studies of Drug Interactions with Lipoproteins by High Performance Affinity Chromatography** MATTHEW R SOBANSKY, University of Nebraska-Lincoln, David S Hage
(1720-17 P)	**Initial Column Screening for Rapid HPLC Method Development Using C18 and Phenyl Columns** KEN TSENG, Nacalai, Toshi Ono, Tsunehisa Hirose, Kazuhiro Kimata
(1720-18 P)	**High Performance Liquid Chromatography (HPLC) Determination of Vitamin D2 and D3 in Supplement and Mushroom Samples – A Chemical Separation Course Project** YUEGANG ZUO, University of Massachusetts Dartmouth, Zhuo Zhu, Xiaofei Lu, Mohammed Alshanqiti, Biqin Song, Jingjing Xie, Joseph Michael

WEDNESDAY, MARCH 5, 2014 AFTERNOON

AWARDS **Session 1730**

Ralph N Adams Award - arranged by Julie Stenken, University of Arkansas

Wednesday Afternoon, Room S401a

Julie Stenken, University of Arkansas, Presiding

1:30		**Introductory Remarks - Julie Stenken**
1:35		**Presentation of the 2014 Ralph N Adams Award to Mark E Meyerhoff, University of Michigan, by Julie Stenken, University of Arkansas**
1:40	(1730-1)	**Advanced Electrochemical Sensors/Devices for Medical Applications** MARK E MEYERHOFF, University of Michigan
2:15	(1730-2)	**Monitoring Neurotransmitter Control of Cerebral Blood Flow** R MARK WIGHTMAN, University of North Carolina at Chapel Hill, Elizabeth S Bucher
2:50	(1730-3)	**New Approaches to High Throughput Analysis of Protein Function by MS and Microfluidics** ROBERT KENNEDY, University of Michigan
3:25		**Recess**
3:40	(1730-4)	**In Situ Bioanalytical Measurements with Near Infrared Spectroscopy** MARK ARNOLD, University of Iowa
4:15	(1730-5)	**Modulating the Macrophage Towards Improved Wound Healing at "Sensor" Implant Sites** JULIE STENKEN, University of Arkansas, Geetika Bajpai, Geoff Keeler, Cynthia Sides, Liping Tang, Jeannine Durdik

AWARDS **Session 1740**

The Coblentz Society - Williams-Wright Award

arranged by Douglas L Elmore, 3M Corporate Research Analytical Laboratory

Wednesday Afternoon, Room S401bc

John Coates, Coates Consulting LLC, Presiding

1:30		**Introductory Remarks - John Coates**
1:35		**Presentation of the 2014 Coblentz Society - Williams-Wright Award to Walter (Mike) M Doyle, Axiom Analytical, Inc., by John Coates, Coates Consulting LLC - The Coblentz Society**
1:40	(1740-1)	**Random Walk Through 50 Years of Optics and Spectroscopy** WALTER (Mike) M DOYLE, Axiom Analytical, Inc.
2:15	(1740-2)	**Fifty Years of FT-IR Spectrometry** PETER R GRIFFITHS, Griffiths Consulting LLC
2:50	(1740-3)	**FTIR: Prehistory and Early History** GERALD AUTH, Midac Corporation
3:25		**Recess**
3:40	(1740-4)	**The Interactions Between IR Instrumentation Development and Industrial Sampling Methods Over Time** D WARREN VIDRINE, Vidrine Consulting
4:15	(1740-5)	**Learning to Think Inside the Box: Spectroscopy and Chemometrics Come of Age Together** RICHARD KRAMER, Applied Chemometrics, Inc.

SYMPOSIUM **Session 1750**

ACS DAC: Lifelong Teaching and Learning in Separation Science

arranged by Charles A Lucy, University of Alberta

Wednesday Afternoon, Room S401d

Charles A Lucy, University of Alberta, Presiding

1:30		**Introductory Remarks - Charles A Lucy**
1:35	(1750-1)	**Approaches to Teaching Separations at Primarily Undergraduate Institutions, with an Emphasis on the Use of a Web-Based HPLC Simulator** DWIGHT STOLL, Gustavus Adolphus College, Mark F Vitha, Paul Boswell
2:10	(1750-2)	**Technology for Analytical Chemistry Instruction Inside and Outside of the Classroom** CHRISTOPHER R HARRISON, San Diego State University
2:45	(1750-3)	**Teaching Separation Science at the Graduate Level** CHARLES A LUCY, University of Alberta
3:20		**Recess**
3:35	(1750-4)	**Old School vs. New School: A Survey of Recent Efforts in Analytical Chemistry Education** KEVIN A SCHUG, University of Texas at Arlington
4:10	(1750-5)	**50 Years of an ACS Short Course** HAROLD MCNAIR, Virginia Tech

SYMPOSIUM **Session 1760**

Advances in Mass Spectrometry Based on Ultrashort Pulse Laser Technology -
arranged by Martin E Fermann, IMRA America Inc.

Wednesday Afternoon, Room S402a

Martin E Fermann, IMRA America Inc., Presiding

1:30		**Introductory Remarks - Martin E Fermann**
1:35	(1760-1)	**Femtosecond Laser Ablation ICP-MS: Ultra-Short Pulse Performance** RICHARD E RUSSO, Lawrence Berkeley National Laboratory, Vassilia Zorba, X L Mao, JJ Gonzalez, Jong Yoo
2:10	(1760-2)	**Ultrafast Lasers Enable Non-Statistical Ion Activation and Sub-Cellular Atmospheric Pressure Chemical Imaging** MARCOS DANTUS, Michigan State University
2:45	(1760-3)	**High Pressure Femtosecond Laser Ionization Mass Spectrometry** DAVID M RAYNER, National Research Council
3:20		**Recess**
3:35	(1760-4)	**Quantitative Protein Analysis via Femtosecond Laser Vaporization-ESI-MS** ROBERT J LEVIS, Temple University
4:10	(1760-5)	**DIVE-PI: Towards Fundamental Limits in Biodiagnostics and Spatial Mapping with MS** RJ DWAYNE MILLER, Max Planck/University of Toronto

SYMPOSIUM **Session 1770**

Analytical Innovations for Metabolomics
arranged by Richard A Yost, University of Florida

Wednesday Afternoon, Room S402b

Richard A Yost, University of Florida, Presiding

1:30		**Introductory Remarks - Richard A Yost**
1:35	(1770-1)	**Bioinformatic and Chemometric Innovations fro Metabolomics** ELAINE HOLMES, Imperial College London
2:10	(1770-2)	**Isotopic Ratio Outlier Analysis (IROA) and Imaging Mass Spectrometry in Metabolomics** TIMOTHY J GARRETT, University of Florida, Richard A Yost, Robert Menger, Yu-Hsuan Tsai, Candice Ulmer
2:45	(1770-3)	**Progress Toward Rapid Throughput Quantitative Glycomics** CARLITO LEBRILLA, University of California, Davis
3:20		**Recess**
3:35	(1770-4)	**Microbial Metabolomics: Chemical Biology at the Intersection of Pathogen Biology and Intrabacterial Pharmacology** KYU RHEE, Weill Cornell Medical School
4:10		**Open Discussion**

SYMPOSIUM **Session 1780**

Bioinformatics: Metabolite Identification and Quantification
arranged by Xiang Zhang, University of Louisville

Wednesday Afternoon, Room S404a

Xiang Zhang, University of Louisville, Presiding

1:30		Introductory Remarks - Xiang Zhang
1:35	(1780-1)	Identifying the 'Dark Matter' in GC/MS and LC/MS Experiments STEVE STEIN, National Institute of Standards and Technology
2:10	(1780-2)	Similarity Difference-Based False Discovery Compound Identification in GC-MS based Metabolomics SEONGHO KIM, Karmanos Cancer Institute/Wayne State University, Xiang Zhang
2:45	(1780-3)	ADAP-GC 2.0: Deconvolution of Co-Eluting Metabolites from GC/TOF-MS Data for Metabolomics Studies XIUXIA DU, University of North Carolina at Charlotte
3:20		Recess
3:35	(1780-4)	Strategies to Improve High-Throughput Identification in Untargeted Metabolomics GARY J PATTI, Washington University
4:10	(1780-5)	A Computational Platform for Analysis of Comprehensive Two-Dimensional Gas Chromatography Mass Spectrometry-Based Metabolomics Data XIANG ZHANG, University of Louisville

SYMPOSIUM **Session 1790**

Biosensors and Single Cells: Speed, Sensitivity, Spatial Resolution
arranged by Andrew G Ewing, University of Gothenburg

Wednesday Afternoon, Room S404bc

Andrew G Ewing, University of Gothenburg, Presiding

1:30		**Introductory Remarks - Andrew G Ewing**
1:35	(1790-1)	**Sensing Neuropeptides at Slices and Maybe Single Cells** LESLIE A SOMBERS, North Carolina State University, Andreas C Schmidt, Lars Dunaway, Gregory McCarty
2:10	(1790-2)	**Electrochemical Sensing of Acetylcholine Release from an Artificial Secretory Cell** ANN-SOFIE CANS, Chalmers University of Technology, Jacqueline Keighron, Michael Kurczy, Joakim Wigström
2:45	(1790-3)	**Nanopipettes: A Versatile Tool for Biosensing and Single Cell Manipulation** NADER POURMAND, University of California Santa Cruz
3:20		**Recess**
3:35	(1790-4)	**FEEM Imaging of Dynamic Cellular Events with Nanoscale Resolution** BO ZHANG, University of Washington, Stephen Oja, Chris Gunderson, Stephen J Percival, Joshua Guerrette
4:10	(1790-5)	**Measuring Spatial Release Across a Single Cell with Array Electrodes and Biosensors** ANDREW G EWING, Chalmers University and University of Gothenburg

SYMPOSIUM **Session 1800**

Global Challenges in Food Safety
arranged by Lowri S DeJager, US Food and Drug Administration

Wednesday Afternoon, Room S405a

Lowri S DeJager, US Food and Drug Administration, Presiding

1:30		**Introductory Remarks - Lowri S DeJager**
1:35	(1800-1)	**The Impact of Globalization of the Food Supply on the Analytical Laboratory** STEVEN MUSSER, FDA
2:10	(1800-2)	**Chasing Zero-How Changes in Methodology Complicate Food Safety Challenges** JONATHAN DEVRIES, Medallion Laboratories/General Mills Inc.
2:45	(1800-3)	**Challenges in Monitoring Chemical Contaminants in Food** STEVEN LEHOTAY, USDA Agricultural Research Service
3:20		**Recess**
3:35	(1800-4)	**Food Contamination - Taints, Off-Flavours and Looking for Unknowns** KATHY RIDGWAY, Reading Scientific Services, Ltd.
4:10	(1800-5)	**Analytical Challenges in Emergency Response to Chemical Contamination Events in Foods** DOUGLAS HEITKEMPER, Food and Drug Administration

SYMPOSIUM **Session 1810**

New Enabling Analytical Techniques for Electrochemical Energy Materials
arranged by Joaquin Rodriguez-Lopez, University of Illinois at Urbana-Champaign

Wednesday Afternoon, Room S404d

Joaquin Rodriguez-Lopez, University of Illinois at Urbana-Champaign, Presiding

1:30		**Introductory Remarks - Joaquin Rodriguez-Lopez**
1:35	(1810-1)	**Combinatorial Techniques for the Discovery of New Catalysts for Solar Fuel Production** BRUCE A PARKINSON, University of Wyoming
2:10	(1810-2)	**Understanding Spatial and Temporal Heterogeneities of Electrochemical Events Using Combined Optical and Electrochemical Methods** SHANLIN PAN, The University of Alabama, Caleb Hill, Jia Liu, Daniel Clayton
2:45	(1810-3)	**Selective Electrocatalysis** MARC KOPER, Leiden University
3:20		**Recess**
3:35	(1810-4)	**Quantitative Multi-Scale Imaging of Electrochemical and Ionic Reactivity in Ion-Battery Interfaces Using Novel Amperometric Probes** JOAQUIN RODRIGUEZ-LOPEZ, University of Illinois at Urbana-Champaign, Zachary J Barton, Simpson H Burton, Mei Shen
4:10		**Open Discussion**

PITTCON 2014 TECHNICAL PROGRAM

SYMPOSIUM **Session 1820**

Quantitative Glycomic and Glycoproteomic Strategies

arranged by Yehia Mechref, Texas Tech University

Wednesday Afternoon, Room S405b

Yehia Mechref, Texas Tech University, Presiding

1:30		**Introductory Remarks - Yehia Mechref**
1:35	(1820-1)	**Development of the INLIGHT Strategy for Relative Quantification of N-Linked Glycans in Complex Biospecimens** DAVID C MUDDIMAN, North Carolina State University
2:10	(1820-2)	**Methods for High-Throughput Glycosylation Analysis of Biopharmaceutical and Clinical Samples** MANFRED WUHRER, VU University Amsterdam
2:45	(1820-3)	**Carbonyl-Reactive Tandem Mass Tags for MS-Based Quantitative Glycomics** SERGEI I SNOVIDA, Thermo Fisher Scientific
3:20		**Recess**
3:35	(1820-4)	**Quantitative N-Glycosylation Analysis of Therapeutic Antibodies** ANDRAS GUTTMAN, The Scripps Research Institute
4:10	(1820-5)	**Quantitative Glycomics by High Temperature LC-MS of Permethylated N-Glycans** YEHIA MECHREF, Texas Tech University, Hu Yunli, Shiyue Zhou, Ahmed Hussein

SYMPOSIUM **Session 1830**

SAS: Applications of Vibrational Spectroscopy in Medical Diagnostics

arranged by Max Diem, Northeastern University

Wednesday Afternoon, Room S502a

Max Diem, Northeastern University, Presiding

1:30		**Introductory Remarks - Max Diem**
1:35	(1830-1)	**Infrared Spectral Pathology: Data Acquisition and Analysis on a Practical Clinical Timescale** PETER GARDNER, University of Manchester, Paul Bassan, Jonathan Shanks, Michael D Brown, Noel W Clarke
2:10	(1830-2)	**Clinical Diagnosis via Raman Spectroscopic Approaches** JUERGEN POPP, Friedrich-Schiller University Jena
2:45	(1830-3)	**Molecular Vision – Measuring the Chemical Content of Tissue for Pathology Using Vibrational Spectroscopic Imaging** ROHIT BHARGAVA, University of Illinois
3:20		**Recess**
3:35	(1830-4)	**What Lies Beneath: Probing Disease in Sub-surface Tissues Using Novel Raman Techniques** NICK STONE, University of Exeter, Pavel Matousek
4:10	(1830-5)	**Infrared Spectral Diagnostics: What are the Limits?** MAX DIEM, Northeastern University

WORKSHOPS **Session 1840**

Current Trends in Pharmaceutical Dissolution Testing

arranged by Gregory Webster, AbbVie and J Derek Jackson, Cubist Pharmaceuticals

Wednesday Afternoon, Room S502b

Gregory Webster, AbbVie, Presiding

1:30		**Introductory Remarks - Gregory Webster and J Derek Jackson**
1:35	(1840-1)	**Implementing Enhanced Mechanical Qualification for Dissolution Apparatus** BRYAN CRIST, Agilent Technologies
2:05	(1840-2)	**Fully Automated Dissolution Systems** GEOFFREY GROVE, SOTAX Corporation
2:35	(1840-3)	**HPLC and Automated Tablet Dissolution Testing Come Together** IAN HIBBERT, Gilson, Inc., Matthew Smith
3:05		**Recess**
3:20	(1840-4)	**Fiber Optic Dissolution Systems: Novel Applications** KONSTANTIN TSINMAN, Pion Inc., Oksana Tsinman
3:50	(1840-5)	**Importance of Visual Observations in Dissolution Testing** ADITYA A MARFATIA, Electrolab, Kavita Singh
4:20	(1840-6)	**Vertical Diffusion Cell Testing** ROYAL HANSON, Hanson Research

ORAL SESSIONS **Session 1850**

Advances in Renewable Energy Research: Devices and Analyses

Wednesday Afternoon, Room S501a

John P Baltrus, Presiding

1:30	(1850-1)	**Electrochemical Analysis of Photosystem I Integrated with Carbon-Based Materials** GABRIEL LEBLANC, Vanderbilt University, Evan A Gizzie, Kevin M Winter, Kane G Jennings, David E Cliffel
1:50	(1850-2)	**Electrochemical and Spectroscopic Characterization of Sn as an Alternative Anode in Lithium-Ion Batteries** DANNY X LIU, The Ohio State University, Amy Casaday, Anne Co
2:10	(1850-3)	**Development of Polyoxometalate-Ionic Liquid Compounds for Processing Cellulosic Biomass** JUDE ABIA, Northeastern State University, Ruya Ozer, Taimoor Khan
2:30	(1850-4)	**New Methods and Developments on Syngas Pollutants Analysis** ETIENNE BASSET, GDF SUEZ - CRIGEN, Marianne Andre-Gallardo
2:50		**Recess**
3:05	(1850-5)	**Fractionation, Characterization, and Toxicity of a Spirulina Hydrothermal Liquefaction Wastewater** JOHN W SCOTT, Illinois Sustainable Technology Center, Jonathan Byer, Joe Binkley, Mai Pham, Nandakishore Rajagopalan, Michael Plewa, Lance Schideman
3:25	(1850-6)	**Analysis of Biodiesel Feedstock Using GCMS and Unsupervised Chemometric Classification Methods** AMBER M HUPP, College of the Holy Cross, Mariel E Flood, Julian Goding, Jack O'Connor, Dorisanne Ragon
3:45	(1850-7)	**Near Real-Time Determination of Inhibitors in the Production of Renewable Cellulosic Biofuels** LEE N POLITE, Helios Scientific, LLC, Harold M McNair
4:05	(1850-8)	**Electrochemical Studies of Photosystem I/Polymer/Semiconductor Interfaces for Biohybrid Solar Energy Conversion** EVAN A GIZZIE, Vanderbilt University, Gabriel LeBlanc, Kane G Jennings, David E Cliffel

ORAL SESSIONS **Session 1860**

Developments of Bioanalytical Sensors

Wednesday Afternoon, Room S501bc

Yinfa Ma, Missouri University of Science and Technology, Presiding

1:30	(1860-1)	**Making Silver Nanoparticles Biocompatible** X NANCY XU, Old Dominion University, Kerry J Lee, Lauren M Browning, Prakash D Nallathamby
1:50	(1860-2)	**Multiplexed Detection of Cardiac Troponin Biomarkers Using Silicon Photonic Microring Resonators** WINNIE W SHIA, University of Illinois at Urbana-Champaign, James H Wade, Ryan C Bailey
2:10	(1860-3)	**Development of Proximity Ligation Assays for Picomolar-Range Quantitation of Insulin and Leptin in Complex Matrices** JESSICA C BROOKS, Auburn University, Leah A Godwin, Christopher J Easley, Joonyul Kim, Michael Greene
2:30	(1860-4)	**Rapid Discrimination of Epigenetic Modifications within Double-Stranded DNA in a Nano-Channel** GUIHUA WANG, Illinois Institute of Technology, Gupta Jyoti, Xiyun Guan
2:50		**Recess**
3:05	(1860-5)	**In Vivo Toxicology Study of Ions on Embryonic Development** MARTHA S JOHNSON, Old Dominion University, Amanda K Swain, Lauren M Browning, X Nancy Xu
3:25	(1860-6)	**A Label-Free Real-Time cDNA Sensor for Infectious Diseases by Nanopore Analysis** LIANG WANG, Illinois Institute of Technology, Yujing Han, Shuo Zhou, Guihua Wang
3:45	(1860-7)	**Development of Au Nanorod Biochip for Label-free Biological Detection** YANYAN WANG, University of Texas at San Antonio, Liang Tang
4:05	(1860-8)	**Design of In Vivo Assays for the Study of Toxicity of Silver Cations** MARTHA S JOHNSON, Old Dominion University, Lauren M Browning, X Nancy Xu

ORAL SESSIONS **Session 1870**

Environmental Analysis: Petrochemicals (Half Session)

Wednesday Afternoon, Room S501d

Susan S Marine, Miami University Middletown, Presiding

1:30	(1870-1)	**Automated Fractionation of Extractable Petroleum Hydrocarbons Using a 6 mL Silica Gel Cartridge** WILLIAM R JONES, Horizon Technology, Brian LaBrecque, Alicia J Cannon, Robert S Johnson
1:50	(1870-2)	**Automated, Rapid, Reliable Determination of Dissolved Gases in Water by Static Headspace – Gas Chromatography** MASSIMO SANTORO, Thermo Fisher Scientific, Andrea Caruso, Richard Jack
2:10	(1870-3)	**Oil and Grease Analysis Around the World** ZOE GROSSER, Horizon Technology, David Friedman
2:30	(1870-4)	**Air Quality Gas Analysis Using Widely Scanning Mid-Infrared Laser Sources Combined with Cantilever Enhanced Photoacoustic Detection** ISMO KAUPPINEN, Gasera Ltd., Sauli Sinisalo, Jussi Raittila

ORAL SESSIONS **Session 1880**

Food Science: Bulk and Matrix Composition Analysis

Wednesday Afternoon, Room S503a

Michael Woodman, Agilent Technologies, Presiding

1:30	(1880-1)	**Sensory Benchmarking of Sausages Using E-Sensing Instruments** JOHN SHEA, Alpha MOS, Jean-Christophe Mifsud, Arash Rashtchian, Marion Bonnefille, Herve Lechat, Fatma Ayouni, Valerie Vabre
1:50	(1880-2)	**Determinations of Inorganic Anions and Organic Acids in Beverages Using Suppressed Conductivity and Charge Detection** TERRI TOYOKO CHRISTISON, Thermo Fisher Scientific, Alexander Zhang, Cathy Tanner, Linda Lopez
2:10	(1880-3)	**Investigation of "Dry Hop Index" as an Indicator for Hop Oxidation via UV-VIS Spectrometry and GC-TOF MS** ELIZABETH HUMSTON-FULMER, Leco Corporation, Carolyn Stordeur, Lauren Torres, Kevin Payne, Lucas R Chadwick, Joe Binkley
2:30	(1880-4)	**Determination of Natural Vitamin E and Benzopyrene by High Performance Liquid Chromatography** ZHANG JINRAN, Bonna-Agela Technologies Inc., Su Xuan, Lu Guotao
2:50		**Recess**
3:05	(1880-5)	**The Importance of GC-TOFMS and GC-HR-TOFMS for Flavor and Off-Flavor Analysis for Packaging Related Issues** RAY THOMAS MARSILI, Marsili Consulting Group
3:25	(1880-6)	**Multi Target Detection Using Total Surface Plasmon Resonance Sensing System** TOSHIKAZU KAWAGUCHI, Hokkaido University, Su Herman, Katsuaki Shimazu, Kinichi Morita
3:45	(1880-7)	**Management of Food Processes with Cantilever Microphone Based Photoacoustic Sensor Combined with Widely Scanning Mid-infrared Laser Sources** ISMO KAUPPINEN, Gasera Ltd., Aleksi Helle, Sauli Sinisalo, Jussi Raittila

ORAL SESSIONS **Session 1890**

Gas Chromatography: Carrier Gases, Capillary Techniques (Half Session)

Wednesday Afternoon, Room S501d

Susan S Marine, Miami University Middletown, Presiding

3:05	(1890-1)	**Optimizing and Improving Carrier Gas Systems Enables You to Reduce Your Gas Usage** REGINALD J BARTRAM, Bartram Consulting
3:25	(1890-2)	**Unintended Consequences with Conversion to Hydrogen Carrier in Gas Chromatography** RANDALL BRAMSTON-COOK, Lotus Consulting
3:45	(1890-3)	**Using Large Volume Injection (LVI) on Conventional Split / Splitless Inlets to Improve Sensitivity or Reduce Sample Preparation** KORY KELLY, Phenomenex
4:05	(1890-4)	**How to Manage Helium Shortage? Let's Use Hydrogen to Measure THT in Natural Gas with Micro-Chromatographs** ONY RABETSIMAMANGA, GDF SUEZ - CRIGEN, Etienne Basset

ORAL SESSIONS **Session 1900**

High-Throughput Chemical Analysis (Half Session)

Wednesday Afternoon, Room S503b

Fu-mei Lin, The Pittsburgh Conference, Presiding

1:30	(1900-1)	**Open Probe Fast GC-MS – Real Time Analysis with Separation** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Uri Keshet, Tal Alon
1:50	(1900-2)	**Design and Fabrication of Multiplexed Plasmonic Nanorod Biochip for High Throughput Biological Assay** YANYAN WANG, University of Texas at San Antonio, Liang Tang
2:10	(1900-3)	**Electrochemical Determination of As(III) by Subtractive Anodic Stripping Coulometry in a Micro-Fabricated Platform** MOHAMED M MAREI, University of Louisville, Thomas J Roussel, Robert S Keynton, Richard P Baldwin
2:30	(1900-4)	**Innovative Approach to Helium Carrier Gas Conservation in Analytical Gas Chromatography** MASSIMO SANTORO, Thermo Fisher Scientific, Edward B McCauley, Paolo Magni, Alexander N Semyonov

ORAL SESSIONS **Session 1910**

Mass Spectroscopy: Bioanalytical and Biomedical

Wednesday Afternoon, Room S504a

Alexandre A Shvartsburg, Pacific Northwest National Laboratory, Presiding

1:30	(1910-1)	**New Derivatization Reagents to Optimize Retention and Response for Quantitative Analysis by LC-ESI-MS/MS** ROSS M WOODS, University of Texas at Arlington, Daniel W Armstrong, Kevin A Schug
1:50	(1910-2)	**Mapping N-Glycoproteomics in Cells by an MS-Based Novel Chemical Deglycosylation Method** RONGHU WU, Georgia Institute of Technology
2:10	(1910-3)	**Internal Energy Transfer for Thermometer Molecules and Ions Desorbed from Multilayers by Femtosecond Pulse Laser Desorption** LUKE HANLEY, University of Illinois at Chicago, Slobodan Milasinovic, Yang Cui, Robert J Gordon
2:30	(1910-4)	**Controlled Proteolysis in Trypsin-modified Membrane to Obtain Large Peptides for Mass Spectrometry** WENJING NING, Michigan State University, Jinlan Dong, Weihan Wang, Yujing Tan, Li Cui, Gavin Reid, Merlin Bruening
2:50		**Recess**
3:05	(1910-5)	**Fundamentals of ESI-MS from Nanopipette Emitters** ELIZABETH M YUILL, Indiana University, Niya Sa, Alicia K Friedman, Steven J Ray, Gary M Hieftje, Lane A Baker
3:25	(1910-6)	**Systematic Mechanistic Exploration of Negative Ion Electron Capture Dissociation (niECD) with Synthetic Peptides** NING WANG, University of Michigan, Kristina Hakansson
3:45	(1910-7)	**Development of a Sampling Technique for Single Cell MALDI Mass Spectrometry** ANUMITA SAHA, Indiana University, Lane A Baker, Steven J Ray
4:05	(1910-8)	**Continuous Real-Time Breath Gas Monitoring in Mechanically Ventilated Patients by Means of Proton-Transfer-Reaction-Time of Flight-Mass Spectrometry** PHILLIP TREFZ, University Medicine of Rostock, Beate Brock, Jochen K Schubert, Marcus Schmidt, Wolfram Miekisch

PITTCON 2014 TECHNICAL PROGRAM

ORAL SESSIONS **Session 1920**

Mass Spectroscopy: Neurochemistry and General Interest

Wednesday Afternoon, Room S504bc

Vincent Nyakubaya, West Virginia University, Presiding

1:30	(1920-1)	**Detection of Uranyl Compounds Using Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) Mass Spectrometry** LYNN X ZHANG, Clemson University, Benjamin T Manard, R Kenneth Marcus
1:50	(1920-2)	**Rapid Quantification of Biogenic Amines from Drosophila Melanogaster Using MALDI-MS** CATHERINE L KRAMER, University of Arizona, Alyssa E Vollaro, Eric B Monroe, Michael L Heien
2:10	(1920-3)	**A D-Amino Acid-Containing Neuropeptide Discovery Funnel** ITAMAR LIVNAT, University of Illinois at Urbana-Champaign, Hua-Chia Tai, Stanislav S Rubakhin, Jonathan V Sweedler
2:30	(1920-4)	**Assessment of the Liquid Sampling-Atmospheric Pressure Glow Discharge (LS-APGD) as an Ambient Desorption/ionization Source for Mass Spectrometry** BENJAMIN T MANARD, Clemson University, Lynn X Zhang, R Kenneth Marcus
2:50		**Recess**
3:05	(1920-5)	**New Apparatus for Preparative Mass Spectrometry on the Milligram Scale** RYAN M BAIN, Purdue University, Christopher J Pulliam, Thomas Müller, Kassandra Moore , Robert G Cooks
3:25	(1920-6)	**Investigation of Pressure Tolerant Faraday Cup Detectors for High Pressure Mass Spectrometry** KEVIN P SCHULTZE, University of North Carolina at Chapel Hill, M Bonner Denton, J Michael Ramsey
3:45	(1920-7)	**Tandem MS of Laser-Reduced Anthraquinones: Implications for LDI Detection of Paints and Dyes** MICHAEL P NAPOLITANO, University of Florida, Ping-Chung Kuo, Jodie V Johnson, Julie Arslanoglu, Richard A Yost
4:05	(1920-8)	**Rapid Determination of Furanic Compounds in Dielectric Liquids with Direct Infusion ESI-MS/MS and DESI-MS/MS** JINYU DU, Missouri University of Science and Technology, Shubhender Kapila

ORAL SESSIONS **Session 1930**

Neurochemistry: New Approaches to Better Information from Measurements

Wednesday Afternoon, Room S504d

Scott Shippy, University of Illinois at Chicago, Presiding

1:30	(1930-1)	**Carbon Nanotube Yarn Electrodes for Enhanced Detection of Neurotransmitter Dynamics in Brain Tissue** ANDREAS C SCHMIDT, North Carolina State University, Xin Wang, Yuntian Zhu, Leslie A Sombers
1:50	(1930-2)	**The Use of Pharmacological Agents for the Prevention of Tissue Damage During Brain Microdialysis** KATHRYN M NESBITT, University of Pittsburgh, Andrea Jaquins-Gerstl, Erika L Varner, Adrian C Michael
2:10	(1930-3)	**The Effects of Adsorption Kinetics on the Interpretation of Fast-Scan Cyclic Voltammetry Data during Behavior** NATHAN T RODEBERG, University of North Carolina at Chapel Hill, Elizabeth S Bucher, R Mark Wightman
2:30	(1930-4)	**Withdrawn**
2:50		**Recess**
3:05	(1930-5)	**Microfabricated Microelectrode Sensor for Measuring Tonic and Phasic Neurochemistry** ADAM DENGLER, North Carolina State University, Gregory McCarty, R Mark Wightman, Susan Carroll
3:25	(1930-6)	**MS Investigation of Neuropeptide Distribution and Expression Pattern Changes upon Exposure to Nanoparticles in Decapod Crustacean** CHUANZI OUYANG, University of Wisconsin-Madison, Albert T Kim, Bingming Chen, Chenxi Yang, Hui Ye, Lingjun Li
3:45	(1930-7)	**Towards Using Electrokinetic Transport for the Delivery of Macromolecules to the Brain** ALEC C VALENTA, University of Pittsburgh, Andrea Jaquins-Gerstl, Amir H Faraji, Adrian C Michael, Stephen G Weber
4:05	(1930-8)	**Capacitive Changes as a Measure of Ionic Adsorption on Carbon-Fiber Microelectrodes** CADDY N HOBBS, University of North Carolina at Chapel Hill, Anna M Belle, Preethi Gowrishankar, R Mark Wightman

ORAL SESSIONS **Session 1940**

Process Analytical Chemistry: Techniques (Half Session)

Wednesday Afternoon, Room S503b

Fu-mei Lin, The Pittsburgh Conference, Presiding

3:05	(1940-1)	**Process Analytical Technology (PAT) Improving Efficiency and Workflows in the Laboratory** ERNIE J HILLIER, Waters Corporation, Tanya Jenkins, Charles H Phoebe, Aaron D Phoebe, Craig H Dobbs
3:25	(1940-2)	**On-Line Analysis for Reaction Monitoring: More Than One Way to Dilute a Sample** BRADLEY CAMPBELL, Eli Lilly and Company, Martin D Johnson, Ryan J Linder, Wei-Ming Sun, Nikolay Zaborenko
3:45	(1940-3)	**Full Automation of Soluble Fraction Measurement in a Simple Approach Especially Suitable for Quality Control in Polypropylene Plants** BENJAMIN MONRABAL, Polymer Char, Pilar Del Hierro, Alberto Ortin, Raquel Ubeda
4:05	(1940-4)	**Developing a Workflow for Development of a Continuous Process with Online UHPLC Monitoring** CHARLES H PHOEBE, Waters Corporation, Sara Sadler, Aaron D Phoebe, Graham B Jones, Craig H Dobbs, Robert J Tinder

ORAL SESSIONS **Session 1950**

Sampling/Sample Preparation: Biological Applications

Wednesday Afternoon, Room S505a

Denise Wilkins, Bechtel Bettis, Inc., Presiding

1:30	(1950-1)	**Rapid and Controlled Protein Digestion in Porous Membrane Reactors Containing Covalently Immobilized Trypsin** JINLAN DONG, Michigan State University, Wenjing Ning, Weihan Wang, Yujing Tan, Li Cui, Gavin Reid, Merlin Bruening
1:50	(1950-2)	**Thin-Film Solid-Phase Microextraction for Determination of Cocaine and Methadone in Urine Samples by Direct Analysis in Real Time (DART) Coupled with Tandem Mass Spectrometry** ANGEL RODRIGUEZ-LAFUENTE, University of Waterloo, Janusz Pawliszyn, Fatemeh Mirnaghi
2:10	(1950-3)	**An Automated Approach for Solid Phase Extraction Methods Development for the Research Laboratory** JOHN PATRICK SIIRA, Horizon Technology, David Gallagher, Michael Ebitson
2:30	(1950-4)	**Application of Hydrophobic Magnetic Ionic Liquids in Dispersive Liquid-Liquid Microextraction** HONGLIAN YU, The University of Toledo, Omprakash Nacham, Jared L Anderson
2:50		**Recess**
3:05	(1950-5)	**A Simplified Load-Wash-Elute Solid Phase Extraction Procedure for the Reversed Phase Micro Elution Plate** XIN ZHANG, Waters Corporation, Pamela Iraneta, Michelle Teuscher
3:25	(1950-6)	**Electrospinning Nanofibers for Extraction of Phosphorylated Peptides and Proteins** WENWAN ZHONG, University of California, Riverside, Hui Wang
3:45	(1950-7)	**Evaluation New Developed Extended Tip Needle Trap Devices and Their Application for In-Field Sampling** SABA ASL HARIRI, University of Waterloo, Janusz Pawliszyn, German Augusto Gomez-Rios
4:05	(1950-8)	**Determination of Drugs in Human Saliva Utilizing Microextraction by Packed Sorbent and Liquid Chromatography-Tandem Mass Spectrometry** MOHAMED ABDEL-REHIM, Stockholm University

ORAL SESSIONS **Session 1960**

Sensors: Environmental and Fuels, Energy and Petrochemical (Half Session)

Wednesday Afternoon, Room S505b

Fu-Tyan Lin, LIST NMR, Presiding

1:30	(1960-1)	**Small Molecule Aptamers and Their Engineering for Enhanced Affinities** MAN BOCK GU, Korea University, Young Sup Kwon, Nurul Hanun Raston
1:50	(1960-2)	**Detecting Toxicants with a Cell-Based Impedance Biosensor** KAYLA SHAW, University of Notre Dame, Paul W Bohn
2:10	(1960-3)	**Optical Sensing with Electrospun Polydiacetylene (PDA)-Embedded Nanofibers** ANDREW J BURRIS, University of California, Riverside, Bryce W Davis, Christopher D Hare, Chih-Yuan Chen, Quan Cheng
2:30	(1960-4)	**Use of Solvatochromism to Detect FAME/Biodiesel in Diesel** JONATHAN FONG, University of Tennessee, Zi-Ling Xue

POSTER SESSION **Session 1970**

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Bioanalytical Neurochemistry, Capillary Electrophoresis, Electrophoresis, and Microfluidics

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1970-1 P) **Capillary Zone Electrophoresis—Electrospray Ionization-tandem Mass Spectrometry for Top-Down Intact Secreted Protein Characterization** YIMENG ZHAO, University of Notre Dame, Liangliang Sun, Matthew M Champion, Norman J Dovichi

(1970-2 P) **Design of a Droplet Generation Device with a Long Incubation Channel for Fully-Integrated DNA and Proteins Assays** JEAN T NEGOU, Auburn University, Kennon S Deal, Joonyul Kim, Christopher J Easley

(1970-3 P) **Fully Automated Capillary Electrophoresis Analysis of Affinity Reagents** BONNIE J HUGE, University of Notre Dame, Ryan Flaherty, Norman J Dovichi, Oluwatosin O Dada

(1970-4 P) **Mass Spectrometry Imaging of Peptides in the Planarian Schmidtea Mediterranea** TA-HSUAN ONG, University of Illinois at Urbana-Champaign, James J Collins, Elena V Romanova, Phillip Newmark, Jonathan V Sweedler

(1970-5 P) **Investigation of Neuropeptide Release in Response to Mechanical Stimulation of DRG Neurons** EMILY G TILLMAAND, University of Illinois at Urbana-Champaign, Callie A Croushore, Stanislav S Rubakhin, Taher A Saif, Jonathan V Sweedler

(1970-6 P) **Capillary Electrophoresis-Based Characterization and Applications of Graphene Quantum Dots** LEONA SIRKISOON, Wake Forest University, Honest Makamba, Christa L Colyer

(1970-7 P) **Targeting Membrane Bound Proteins with Methylated Aptamers** ANDREW SCHMUDLACH, University of Notre Dame, Bonnie J Huge, Flaherty Ryan, Norman J Dovichi

(1970-8 P) **A Microfluidic Long-Term Cell Culture Device for Improving Biomimetic Modeling in Diabetes Metabolomics** LAURA FILLA, Saint Louis University, James L Edwards

(1970-9 P) **Integrating Microscale Enzymatic Reactions with Capillary Electrophoresis** SRIKANTH GATTU, West Virginia University, Cassandra L Crihfield, Lisa A Holland

(1970-10 P) **Measurements of Serotonin Release in Huntington's Disease Model R6/2 Mice** RACHEL GEHRINGER, University of Kansas, Sam Kaplan, Ryan Limbocker, Michael A Johnson

(1970-11 P) **Mass Spectrometry and Microfluidics-based Strategy for Characterization of Peptide Release in Mammalian Peripheral Nervous System** NING YANG, University of Illinois at Urbana-Champaign, Callie A Croushore, Emily G Tillmaand, Elena V Romanova, Stanislav S Rubakhin, Jonathan V Sweedler

(1970-12 P) **Acute Nicotine Administration has Different Effects on Evoked Dopamine Responses at Different Fast and Slow Type Sites in the Rat Striatum** BRENDAN P SESTOKAS, University of Pittsburgh, Seth H Walters, Adrian C Michael

(1970-13 P) **Optimizing EMMA Overlap Conditions: Experiment and Simulation** MARIA D JONES, Bucknell University, Adam R Meier, Timothy G Strein

(1970-14 P) **Coupling Immobilized Alkaline Phosphatase-based Automated Diagonal Capillary Electrophoresis to Tandem Mass Spectrometry for Extent of Phosphorylation Analysis** SI MOU, University of Notre Dame

(1970-15 P) **An Organic Light-Emitting Diode (OLED) Induced Fluorescence Detection System for Use in a Compact Disk-Type Microfluidic Device** KAZUHIRO MORIOKA, Tokyo Metropolitan University, Hizuru Nakajima, Akihide Hemmi, Hulie Zeng, Shungo Kato, Katsumi Uchiyama

(1970-16 P) **On-Line Concentration and Separation of Parabens by Micellar Electrokinetic Chromatography Using Polymer Solutions Containing Sodium Dodecyl Sulfate** CHIEN-WEI WU, National Taiwan Ocean University, Tai-Chia Chiu, Cho-Chun Hu

(1970-17 P) **On-Line HPLC Separation and Fluorescent Tagging of Primary Fatty Acid Amide Conjugates Using Droplet-Based Microfluidics and Single Photon Counting Detection** ANDREW P DAVIC, Duquesne University, Michael Cascio

(1970-18 P) **Bottom-Up Proteome Analysis of E. coli Using Capillary Zone Electrophoresis-Tandem Mass Spectrometry with an Electrokinetic Sheath-Flow Electrospray Interface** XIAOJING YAN, University of Notre Dame, David C Essaka, Liangliang Sun, Guijie Zhu, Norman J Dovichi

(1970-19 P) **High-Speed Capillary Electrophoresis Coupled with Electrospray Ionization-Mass Spectrometry for Metabolite Analysis** NICOLE M SCHIAVONE, University of Notre Dame, Scott Sarver, Carlos Gartner, Roza Wojcik, Norman J Dovichi

(1970-20 P) **Latex Nanoparticle Pseudo-Stationary Phases for Electrokinetic Chromatography: Influence of the Ionic Shell** JESSE HYSLOP, University of Montana, Leah Hall, Christopher P Palmer

(1970-21 P) **Determining Extra-Cellular Amino Acids Secreted from Human Adipocytes Using Online Microdialysis Capillary Electrophoresis** RACHEL HARSTAD, University of Minnesota, Michael T Bowser

(1970-22 P) **Electro-Transfer Efficiency of Various Protein Types Using an Automated a Semi-Dry Method for Western Blot Analysis** EWA Z LANG, Abbott Laboratories, Tracey D Rae, Kevin R Rupprecht, Jeffrey Fishpaugh

(1970-23 P) **Modeling and Analysis of Particle Dispersal in Tissue Phantoms** CICILY J RONHOVDE, University of Iowa

(1970-24 P) **Buffer Capacity of Blood: Advancements in the Development of a Lab-on-Chip** SAHIR ILYAS GANDHI, Imperial College London, Christopher Bell, Peter Knox, Martyn G Boutelle, Danny O'Hare

(1970-25 P) **Chemometrical Optimization and Fast Determination of Debittering of Table Olives by Means of Capillary Electrophoresis** SILVIA M ALBILLOS, University of Burgos, Maria-Dolores Busto, Natividad Ortega, Concepcion Pilar-Izquierdo, Sonia Ramos-Gomez, Manuel Perez-Mateos

(1970-26 P) **Highly Sensitive, Selective, and Fast Protein Analysis Using Lateral Flow Immunoassay** JIAO CHEN, University of North Dakota, Xu Hui

(1970-27 P) **Withdrawn**

(1970-28 P) **On-Chip Solid Phase Extraction and Reverse Transcription for mRNA Expression Analysis in Stroke Diagnosis** MARIA LINDELL, University of North Carolina - Chapel Hill, Steve Soper, Maggie Witek, Mateusz Hupert, Katrina Battle, Swathi Reddy Pullagurla

(1970-29 P) **Kinetic Studies of Drug-Protein Interactions Using High-Performance Affinity Microcolumns and Peak Profiling** ZHAO LI, University of Nebraska-Lincoln, David S Hage

(1970-30 P) **Optimization of Electrophoretic Separation Methods for Purity Testing of an Atypically-Reactive Recombinant Antibody** MARTIN R LOPEZ, Abbott Laboratories, Tracey Rae, Ryan Bonn

(1970-31 P) **Electrochemical Characterization of Extracellular Catecholamines in the Olfactory Tubercle of Rats** LINGBO LU, University at Buffalo, Jin W Park, Jinwoo Park

(1970-32 P) **Microfluidic Platform for Selective Isolation of CD4+ T-cells and Neutrophils for the Analysis of Stroke Related Markers** SWATHI REDDY PULLAGURLA, Louisiana State University, Małgorzata Witek, Joshua M Jackson, Maria Lindell, Mateusz L Hupert, Steven A Soper

(1970-33 P) **Quantitative PCR for Olive Oil Authentication** SONIA RAMOS-GOMEZ, University of Burgos, Natividad Ortega, Maria-Dolores Busto, David Palacios, Silvia M Albillos

(1970-34 P) **PDMS-Interconnected Microfluidic Systems for Rapid Separations** QIYANG ZHANG, Wichita State University, Maojun Gong

(1970-35 P) **Nano Patterning by Colloidal Lithography** HAOHAN ZHAO, University of Cincinnati

POSTER SESSION **Session 1980**

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Bioanalytical: Vibrational Spectroscopy

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1980-1 P) **Site Selective Characterization of Protein Electrostatics and Conformational Heterogeneity with Infrared Spectroscopy** EDWARD BASOM, Indiana University, James Spearman, Megan C Thielges

(1980-2 P) **Quantitative Protein Detection Using Surface-Enhanced Raman Scattering** MUSTAFA CULHA, Yeditepe University, Ertug Avci

(1980-3 P) **Coherent Anti Stokes Raman Scattering Correlation Spectroscopy (CARS-CS)** LAWRENCE O ITELA, University of Notre Dame, Karen A Antonio, Zachary D Schultz

(1980-4 P) **Label-Free Lipid Vesicle Detection in a Flow Cell Detector Using SERS** KEVIN T JACOBS, University of Notre Dame, Pierre Negri, Zachary D Schultz

(1980-5 P) **Preparation of Silver Nanocrystals Coated ZnO/Fe3O4 Nanocomposites via Photoreduction as SERS Substrate for Detection of Uric Acid in Urine** MELISEW TADELE ALULA, Bahir Dar University, Jyisy Yang

(1980-6 P) **Analysis of Human Erythrocytes Fourier Transform Infrared Microspectroscopy** MENASHI A COHENFORD, Marshall University, SeungJin Lim, Tabitha Norman, Maggie Anderson, Sarah Chapman, Pamela Meadows

(1980-7 P) **Infrared Spectroscopy of Photosynthetic Electron Transfer Complexes** AMANDA LE SUEUR, Indiana University

(1980-8 P) **Surface-Enhanced Raman Bio-Imaging Using Gold Nano-Coral** SHOGO YAMAZOE, FUJIFILM Corporation, Megumi Shiota, Masayuki Naya, Mayumi Kajimura, Makoto Suematsu

(1980-9 P) **Raman Spectroscopy for Human Breast Cancer Detection** WEIQING XU, Jilin University, Liang Lijia, Zheng Chao, Han Bing, Xu Shuping, Hu Chengxu

(1980-10 P) **A Novel, Fluorescence-Based Assay for Determining MicroRNA Concentration in Solution** JASON DALLWIG, Life Technologies, Nancy Ahnert, Kathleen Free, Yolanda Tennico

(1980-11 P) **Improved Biosensing Using Capping Agent Free Au Nanostars** DEBRINA JANA, University of Cincinnati, Jie He, Bansari Patel, Laura Sagle

(1980-12 P) **Development of a SERS Technique for the Quantitative Analysis of Bidentate Compounds** MAGGIE J MALONE-POVOLNY, University of Saint Thomas

(1980-13 P) **Using Attenuated Total Reflectance Fourier Transform Infrared Spectroscopy to Monitor Secondary Structure Changes of ApoE422K in Nanolipoprotein Particles** JESSICA L MOORE, University of California Davis, Elyse Towns, Richard Osibanjo, Craig Blanchette, Donald Land

(1980-14 P) **Multi-Plex Analysis of Pro- and Anti-Inflammatory Cytokines in Human Biological Matrices** MATTHEW A STIEGEL, University of North Carolina at Chapel Hill, Joachim D Pleil, Jon R Sobus, Michael C Madden

(1980-15 P) **FT-IR Microspectroscopic Determination of the Uniformity and Level of Starch Acylation at Concentrations for Pharmaceutical and Industrial Use** MARK D BOATWRIGHT, Kansas State University, David L Wetzel

POSTER SESSION **Session 1990**

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Biopharmaceutical Analysis

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(1990-1 P) **Optimization of Si-Based CVD Coatings for Anti-Bio Fouling Applications** GARY BARONE, SilcoTek Corporation, Min Yuan, David Smith

(1990-2 P) **Radio Ion Chromatography** JAY GANDHI, Metrohm USA, M Espinosa, J Chesa-Jimenez, Andrea Wille

(1990-3 P) **Method Optimization to Eliminate Protein Sample Carryover: Evaluation of Bovine Serum Albumin and Ovalbumin Using Ion Exchange Low Flow HPLC Purification** TONI HOFHINE, Gilson, Inc., Luke Roenneburg, Takashi Nakamura, Yuichiro Hayashi

(1990-4 P) **Biopharmaceutical Investigations of Inorganics in Raw Materials Used For Cell Culture Media Using X-Ray Fluorescence Analysis** JESSICA MONDIA, Biogen Idec, Fernie Goh, Maureen Lanan

(1990-5 P) **Analysis of Drug-Protein Binding by Ultrafast Affinity Chromatography Using Immobilized Alpha1-Acid Glycoprotein** SANDYA RANI BEERAM, University of Nebraska, Xiwei Zheng, David S Hage

POSTER SESSION **Session 2000**

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Mass Spectrometry for Art and Archaeological Analysis

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(2000-1 P) **DART-MS Applications to the Analysis of Art and Archaeological Materials** RUTH ANN ARMITAGE, Eastern Michigan University

(2000-2 P) **Identification of Red Dyes in Archaeological Textile Fragments by DART-MS Before and After Sample Cleaning** CALVIN DAY, Eastern Michigan University, Ruth Ann Armitage

(2000-3 P) **DART-MS Analysis of Historic Tobacco Pipes to Investigate the Preservation of Nicotine Residues** SYLVIA TORRES, Eastern Michigan University, Ruth Ann Armitage

POSTER SESSION **Session 2010**

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Mass Spectroscopy: Bioanalytical and 'Omics

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(2010-1 P) **Comparison of Nanostructured Initiator Mass Spectrometry (NIMS) and Matrix-Enhanced Surface-Assisted Laser Desorption/Ionization (ME-SALDI) in MSI of Small Molecules** TARA N MOENING, North Carolina State University, Victoria L Brown, Lin He

(2010-2 P) **Lipid Identification and Imaging in Single Cells Using Combined SIMS and Laser Desorption Ionization** AMIR SAEID MOHAMMADI, Chalmers University of Technology, Anders O Lundgren, Per Malmberg, John S Fletcher, Jörg Hanrieder, Andrew G Ewing

(2010-3 P) **Enhanced Laser Ionization for MALDI-QTOF Quantitative Analysis of a Biomedically Important Analyte** LOGAN MILLER, Duquesne University, HM Skip Kingston

(2010-4 P) **Impact of Protein Corona on Nanotube-Conjugated CpG Immunotherapy for Glioma** SHANG ZENG, University of California, Riverside, Wenwan Zhong

(2010-5 P) **Utilizing SAMDI Mass Spectrometry to Understand the Evolutionary Relationship of Phosphatases and Adaptor Domains** KYLE C BANTZ, Northwestern University, Danielle Seedorf, Milan Mrkisch

(2010-6 P) **Discriminating Peptide Epimers in Complex Mixtures by Radical Directed Dissociation LC-MS** YUANQI TAO, University of California, Riverside, Ryan R Julian

(2010-7 P) **High-Resolution Enabled 10-plex DiLeu Isobaric Tagging Reagents for Mass Spectrometry-Based Relative Quantitation** DUSTIN FROST, University of Wisconsin-Madison, Tyler J Greer, Lingjun Li

(2010-8 P) **Sequence Mapping of Apolipoprotein B-100 on Human Low-Density Lipoprotein Surface Using NHS Ester Modified Magnetic Iron Oxide Nanoparticles with a Cleavable Linker Coupled with Liquid Chromatography-Tandem Mass Spectrometry** PARISA PIRANI, University of New Orleans, Ujwal S Patil, Yang Cai, Matthew A Tarr

(2010-9 P) **Direct MALDI Imaging of Glycospingolipids (GSL) in Brain Tissue of Mouse Models of Lysosomal Storage Disorders** JENNIFER ARCEO, University of Notre Dame, Norman J Dovichi

(2010-10 P) **Combining Fibrinogen-Conjugated Gold Nanoparticles with a Cellulose Membrane for the Mass Spectrometry-Based Detection of Fibrinolytic-Related Proteins** WEI CHANE CHIU, National Taiwan Ocean University, Chih-Ching Huang

(2010-11 P) **High Spatial Resolution Multi Modal Imaging Mass Spectrometry (IMS) of Nueropeptides in the Cerebral Cortex and the Corpus Callosum of the Mouse Brain** MASOUMEH DOWLATSHAHI POUR, Chalmers University of Technology, Per Malmberg, Andrew G Ewing

(2010-12 P) **Detection of MicroRNA in Tumor Cells by Enzyme and Graphene Oxide-Regulated Signal Amplification** RONG-CING HUANG, National Taiwan Ocean University, Chih-Ching Huang

(2010-13 P) **Development of a Quantitative LC-MS/MS Assay for the Simultaneous Quantitation of Acetylcholine, Histamine, and Their Metabolites in Human Cerebrospinal Fluid (CSF) Using sub 2µm HILIC UPLC** MARY E LAME, Waters Corporation, Erin Chambers, Kenneth J Fountain

(2010-14 P) **Nanogold Membrane Coupled with Laser Desorption/Ionization Mass Spectrometry for Detection of Iodide in Urine** YU-JIA LI, National Taiwan Ocean University

(2010-15 P) **Lipidomics on Intact Breast Cancer Cell Lines Using Desorption Electrospray Ionization Mass Spectrometry** HEATHER ROBISON, University of Illinois at Urbana-Champaign, Richard Perry

(2010-16 P) **Withdrawn**

(2010-17 P) **Headspace GC-MS Detection of Dodecafluoropentane Collected Using Microdialysis Sampling** ALDA A DIAZ-PEREZ, University of Arkansas, Jennifer Gidden, Jackson O Lay, Julie Stenken

(2010-18 P) **In Vivo Detection of Volatile Signatures from Mycobacterium Avium spp. Paratuberculosis (MAP) by Means of Needle-Trap-Micro-Extraction (NTME), Solid-Phase-Micro-Extraction (SPME) and GC-MS** ANDREAS BERGMANN, University Medicine of Rostock, Heike Koehler, Petra Reinhold, Klaus Klepik, Phillip Trefz, Jochen K Schubert, Sina Fischer, Wolfram Miekisch

(2010-19 P) **Analysis of the Essential Oil from the Leaves of Cissampelos Owariensis, a Profertility Plant** MODUPE MABEL OGUNLESI, University of Lagos, Wesley O Okiei, Edith U Ofor

(2010-20 P) **GC-MS Analysis of the Essential Oil from the Edible Nuts from Tetracarpidium Conophorum** MODUPE MABEL OGUNLESI, University of Lagos, Wesley O Okiei, Funmilola A Adesanya

(2010-21 P) **GC-MS Analysis of the Constituents of the Essential Oil from the Fresh Leaves of Pseudocedrela Kotschyi, a Medicinal Plant Used in the Management of Sickle Cell Disease** WESLEY O OKIEI, University of Lagos, Modupe Mabel Ogunlesi, Toyin O Akerele

(2010-22 P) **Identification and Classification of Antifouling Compounds Secreted by Anti MIC Microorganisms: A Metabolomic Analysis** SILVIA M ALBILLOS, University of Burgos, Rafael Balaña-Fouce, Olimpio Montero, Carlos Barreiro-Méndez, Emilio Blas-Galindo, Rocío Barros-García, Edith Guedella-Bustamante, Ricardo Vicente-Ullán

(2010-23 P) **MALDI-TOF-Analysis of Intact High Mass Proteins by Phonon-Assisted Field Emission in Silicon Nanomembranes** DIANA HILDEBRAND, University Hamburg, Hyun-Cheol Shin, Zlatan Aksamija, Jonghoo Park, Hyunseok Kim, Jonathan Rodriguez, Robert Blick

(2010-24 P) **Electrochemistry Electrospray Ionization Mass Spectrometry in the Study of Covalent and Non-Covalent Interactions of Tryptophan** IMRAN IFTIKHAR, University of Florida, Anna Brajter-Toth

(2010-25 P) **Establishment of NIST Monoclonal Antibody Reference Material** JOHN ELLIOTT SCHIEL, NIST, Karen Phinney, Lisa Kilpatrick, Catherine Formolo, Meiyao Wang

(2010-26 P) **Optimizing Capillary Electrophoresis for Top-Down Proteomics of 30-80 kDa Proteins** YIHAN LI, Northwestern University, Philip Compton, John Tran, Neil Kelleher

(2010-27 P) **Identification of the Sulfone Functionality in Protonated Analytes via Ion/Molecule Reactions in a Linear Quadrupole Ion Trap Mass Spectrometer** HUAMING SHENG, Purdue University, Peggy Williams, Weijuan Tang, Minli Zhang, Hilkka Kenttamaa

POSTER SESSION — Session 2020

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Pharmaceutical: GC, MS, LC/MS and Others

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(2020-1 P) **Development and Validation of a Liquid Chromatographic Method for the Determination of Reserpine Residues on Manufacturing Equipment Surfaces** MOHAMMED H ABDELHAY, Alexandria University, Rasha Shaalan, Marwa Rashad

(2020-2 P) **Use of Additives for Improving Chromatographic Analysis** RUDULF KOHLING, Sigma-Aldrich, Namtso Reichlin, Mathias Drexler, Shyam Verma, Vicki Yearick

(2020-3 P) **Use of Mass Detection in Method Development for Components with No UV Absorbance** SEAN M MCCARTHY, Waters Corporation, Michael D Jones

(2020-4 P) **Chiral and Achiral Reaction Monitoring with Ultra-Performance Chromatography and Mass Detection** SEAN M MCCARTHY, Waters Corporation, Michael D Jones

(2020-5 P) **Microwave, Raman and Infrared Spectra, Conformational Stability, Structural Parameters, and Vibrational Assignment of Cyclopentylamine** IKHLAS D DARKHALIL, University of Missouri - Kansas City, James R Durig

(2020-6 P) **Integrating Predictive and Experimental Tools to Capture Degradation Knowledge in the Early Development Phase of a Drug's Lifetime** TASNEEM PATWA, Pfizer

(2020-7 P) **USP <467>: Determination of Residual Solvents in Pharmaceutical Products Using Static Headspace and Time of Flight GC/MS system** ILARIA FERRANTE, DANI Instruments, Chiara Abate, Roberta Lariccia, Daniele Recenti

(2020-8 P) **Purification of Diastereomer in Tenofovir Prodrug by NP-HPLC&RP-HPLC** YANG LANHUI, Bonna-Agela Technologies Inc., Wang Hongyu , Li Yunhua, Lu Guotao

(2020-9 P) **Using Chemical Kinetics in HPLC Method Development for Reactive Linker Drugs in Antibody Drug Conjugates** YI LI, Genentech, Colin Medley, Larry Wigman, Nik Chetwyn

(2020-10 P) **Terahertz Spectroscopic Imaging of Pharmaceutical Cocrystals** KATSUHIRO AJITO, NTT Microsystem Integration Labs, NTT Corp.

(2020-11 P) **Exploring the Power of Chromatographic Selectivity for Polar and Non-Polar Analytes with a Unique HPLC/UHPLC Polar Embedded Stationary Phase** GEOFFREY FADEN, MAC-MOD Analytical, Inc., Alan P McKeown

(2020-12 P) **Particulate Contamination Control - Current Technology versus State of the Past** VALET OLIVER, rap.ID Inc.

(2020-13 P) **Particle ID Robots - Design and Application of Image Directed Raman + LIB Spectroscopy** VALET OLIVER, rap.ID Inc.

(2020-14 P) **Convenient and Direct Determination of Guanidine Compounds in Water with a Cavitand-Based Stationary Phase** TAYYEBEH PANAHI, Brigham Young University, Roger G Harrison

(2020-15 P) **Detection and Separation of Pharmaceutical Contaminants in Surface Water with Ion Chromatography** TAYYEBEH PANAHI, Brigham Young University, Roger G Harrison

(2020-16 P) **Structural Studies of Co-Spinel Ferrite Synthesized by an Auto Combustion Method** ANAND M RAVAL, Saraswati School of Science

(2020-17 P) **Surface Area Measurement of Intact Lyophilized Cakes** MYKE SCOGGINS, Micromeritics

(2020-18 P) **Applications of a New Core-Shell Particle in the Separation of Pharmaceutical Entity's** MARK WOODRUFF, Fortis Technologies Ltd, Ken Butchart

POSTER SESSION — Session 2030

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Sampling and Sample Preparation

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(2030-1 P) **Development of Novel Passive Air Sampler for Simultaneous Determination of NO and NO2 Employing Ceria/quartz Fiber Filter** AYANO AZUMA, Tokai University, Yoshika Sekine, Yuki Nagaoka, Michio Butsugan

(2030-2 P) **Nicotine and Metabolites: Evaluation of Supported Liquid Extraction Approaches Prior to UPLC-MS/MS Analysis** ALAN EDGINGTON, Biotage, Williams Lee, Victor Vandell, Frank A Kero, Tom Enzweiler, Elena Gairloch, Brad Nolt

(2030-3 P) **Method NIOSH 2549: Thermal Desorber Analysis for Occupational Safety and Health** ILARIA FERRANTE, DANI Instruments, Daniele Recenti

(2030-4 P) **New Stationary Phases for Large Volume SPE** JING HONG, Thermo Fisher Scientific, Rosanne Slingsby, Pranathi R Perati

(2030-5 P) **Alternative Extraction for EPA 548.1, The Analysis of Endothall** KORY KELLY, Phenomenex

(2030-6 P) **Automation of a Solid Phase Extraction Method for the Determination of Ochratoxin A in Wine and Beer Samples Prior to LC-MS/MS** FRANK A KERO, Biotage, Leonardo Mariño Repizo, Soledad Cerutti, Victor Vandell, Adam Senior, Tom Enzweiler, Elena Gairloch

(2030-7 P) **Use of Accelerated Solvent Extraction (ASE) with Centrifugal Evaporation to Automate Fat Determination in Food Matrices** AARON KETTLE, Thermo Fisher Scientific

(2030-8 P) **Eliminating the Need for Matrix-Matched Calibration Standards for GC and LC Pesticide Residue Analyses of QuEChERS Extracts Using a Robotic Solid Phase Extraction Clean-Up Procedure** BRUCE D MORRIS, RJ Hill Laboratories, Richard Schriner, Kim Gamble, Rick Youngblood

(2030-9 P) **Sample Preparation and Quantification of Arsenic Compounds in Insoluble Gypsum Wallboards** KANA OKAMOTO, Fukushima University, Atsushi Manaka, Masamoto Tafu, Yoshitaka Takagai

(2030-10 P) **Cloud Point Extraction of Metal Oxide (TiO2 and ZnO) Nanoparticles in Water Samples Identified by Raman Spectroscopy and Quantified by Atomic Absorption Spectroscopy** YANXIAO MA, Tennessee Tech University, Andrew Callender

(2030-11 P) **Novel Methods for the Pretreatment of Whole Blood Using Fenton-Like Processes** SAMUEL M ROSOLINA, University of Tennessee, Kimberly N Johnson, Zi-Ling Xue

(2030-12 P) **Comparison of Sampling Methods for Identification of Process Tank Residues** MARY L STELLMACK, McCrone Associates, Anna S Teetsov, Heidi M Ullberg

(2030-13 P) **Utility of a Moisture Removal Polymer for Extraction Applications** SM RAHMAT ULLAH, Thermo Fisher Scientific, Kannan Srinivasan, Christopher Pohl

(2030-14 P) **Fast "Load-Wash-Elute" SPE Method With No Dry Down Steps for Peptide Extraction from Plasma and Serum Prior to LC-MS/MS Analysis** VICTOR VANDELL, Biotage, Frank A Kero, Tom Enzweiler, Elena Gairloch

(2030-15 P) **Introduction of New Syringeless Filtration Device for Easy Use Prior to Instrument Analysis** LIMIAN ZHAO, Agilent Technologies, Wei Song, Greg Webster

(2030-16 P) **Are You Worried about the Loss of Target Analytes by Sample Filtration?** LIMIAN ZHAO, Agilent Technologies, William John Long

(2030-17 P) **New Graphitized Polymer Carbons and Carbon Molecular Sieves for Sample Preparation Applications** WILLIAM R BETZ, Supelco/Sigma-Aldrich, Jay Jones, Mike Keeler, Wendy Roe

(2030-18 P) **Increased Efficiency of the Coomassie (Bradford) Assay for Protein Content Determination Using Simple Automated Liquid Handling vs. Manual Procedures** TONI HOFHINE, Gilson, Inc., Dan Brunner, Seth Hanson, Tristan Berto

(2030-19 P) **Automated Inspection for Disease Vector Tracking** LEVI B LAZARUS, University of Arizona, Roger L Miesfeld, Jun Isoe, Michael L Heien

(2030-20 P) **Increasing Productivity by Utilizing Prepared of Formulations** ANTHONY R KEMPERMAN, Honeywell, Burdick & Jackson

(2030-21 P) **Advances in Tube Sampling Technology – Tube and Sample Data Tracking** NICOLA M WATSON, Markes International, Matthew Bates, Peter Grosshans

(2030-22 P) **Optimization of Volatile Organic Compound Determination by Static Headspace Sampling** ANNE JUREK, EST Analytical, Justin Murphy, Lindsey Pyron

(2030-23 P) **Large Volume Injection of Polycyclic Aromatic Hydrocarbons** ANNE JUREK, EST Analytical, Justin Murphy, Lindsey Pyron

(2030-24 P) **Evaluating the Efficacy and Reproducibility of Automated Homogenization Technologies** DREXEL NEUMANN, Omni International, James Atwood

POSTER SESSION — Session 2040

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 1:00 PM to 3:00 PM. Location of the afternoon posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Sensors: Bioanalytical and Biomedical

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(2040-1 P) **Functionalization of Poly(methyl methacrylate) (PMMA) for the Usage as a Glucose Biosensor** MARCOS CERQUEIRA, USP, Lucio Angnes, Renato Matos

(2040-2 P) **Highly Sensitive SERS-Active Optical Fiber Sensor Prepared by Photo-Induced Reaction and Its Application for In Situ Detection** XU SHUPING, Jilin University, Wang Shaoyan , Liu Chunyu, Chen Gang, Jia Qiong, Xu Weiqing

(2040-3 P) **Label-Free Real-Time Chemical Observation of Living Cells Using a New CCD-type Ion Image Sensor** TOSHIAKI HATTORI, Toyohashi University of Technology, Takashi Sakurai, Koichi Okumura, Fumihiro Dasai, Kazuaki Sawada

(2040-4 P) **Capacitive Micromachined Ultrasonic Transducer for Immunosensor Design** ALMIRA RAMANAVICIENE, Vilnius University, Darius Virzonis, Asta Makaraviciute, Gailius Vanagas, Dovydas Barauskas, Arunas Ramanavicius

(2040-5 P) **Diruthenium Compounds as Tunable Electrochemical Tags in Biosensing** ANTOINE LEVY, North Carolina State University

(2040-6 P) **Non-Enzymatic Glucose Sensor Based on the 3-Aminophenylboronic Acid Molecular Recognition Group** HAKAN CIFTCI, Kirikkale University, Ugur Tamer, Mutluhan Biyikoglu

(2040-7 P) **Covalent Bond Type Molecularly Imprinted Polymers for Sensing Carbonyl Compounds** NOBUAKI KOBAYASHI, Kobe University, Yukiya Kitayama, Tooru Ooya, Toshifumi Takeuchi

(2040-8 P) **A Cost-Effective Impedance Biosensor for Rapid Detection of Avian Influenza Virus in Chicken Swabs** JIANHAN LIN, China Agricultural University, Ronghui Wang, Peirong Jiao, Yuntao Li, Xinhua Wen, Ming Liao, Yanbin Li, Maohua Wang

(2040-9 P) **A Q-Body Assay System for Illegal Drugs** ABE RYOJI, USHIO Inc., Ohashi Hiroyuki, Nomoto Daisuke

(2040-10 P) **Diamond Microfluidic Devices for Electrochemical Analysis** JON C NEWLAND, University of Warwick, Mark E Newton, Julie V Macpherson

(2040-11 P) **Mechanism Study of Wound-Healing Capability of Bioactive Borate Nanofibers Using an In Vitro Dynamic Model System** SISI CHEN, Missouri University of Science and Technology, Qingbo Yang, Honglan Shi, Katie Brow, Richard K Brow, Yinfa Ma

(2040-12 P) **Evaluation of a Centrifugal 3-Part Differential Hematology System** OSARO ERHABOR, Royal Bolton Hospital

(2040-13 P) **Capillary Model for Drug Penetration into the Tumor Tissue with Integrated Microsensors for Monitoring Hypoxia, Acidification and the Evolving Concentration Profiles of the Drug Inside the Model Tissue** MIKLOS GRATZL, Case Western Reserve University, Kihwan Kim

(2040-14 P) **Metabolic Activity of PGE2 in Macrophages During LPS Exposure** DANIELLE W KIMMEL, Vanderbilt University, David E Cliffel

(2040-15 P) **Production of L-asparaginase from Cannabis Sativa and Development of Plant Biosensor for Detection of Asparagine** KULDEEP KUMAR, MM Modi College, Patiala, Teena Pathak, Jagjit Kaur, Raman Kumar

(2040-16 P) **Fabrication of a Novel Fiber-Optic Taper Based Single-Cell pH Sensor** QINGBO YANG, Missouri University of Science and Technology, Hanzheng Wang, Baokai Cheng, Xinwei Lan, Sisi Chen, Honglan Shi, Hai Xiao, Yinfa Ma

(2040-17 P) **Protective Effects of Mesenchymal Stem Cells, N-acetylcystiene and White Tea on Oxidative Damage in Isoniazid and Rifampicin-Induced Toxicity in Experimental Rats** SAMY A ABDEL AZIM, Cairo University

(2040-18 P) **Point-of-Care Sweat Chloride Tester for Cystic Fibrosis Screening in Newborns in 5 Microliters of Sweat** MIKLOS GRATZL, Case Western Reserve University, Mihailo Rebec, Tamas Cserfalvi, Mihailo V Rebec

(2040-19 P) **Development of Monodispersed Albumin Coated Iron Oxide Nanoparticles as Drug Delivery Vehicles in Photodynamic Therapy** YU-FEN HUANG, National Tsing Hua University, Chun-Yu Hu

(2040-20 P) **A Continuous Monitoring System for Isolated Organ Perfusion** ROBERT M LEARNEY, Imperial College London, Martyn G Boutelle

(2040-21 P) **Graphene Oxide Modified with Aptamer-Conjugated Gold Nanoparticles for the Inhibition of Thrombin Activity** YI-HENG SO, National Taiwan Ocean University, Chih-Ching Huang

(2040-22 P) **Chronocoulometric Detection of Nucleic Acid with Solid-Phase Rolling Circle Amplification Using Thin-Film Au Electrodes** MIYUKI TABATA, Tokyo Medical and Dental University, Bo Yao, Tatsuro Goda, Akira Matsumoto, Yuji Miyahara

(2040-23 P) **Development of a New Fluorescent Labeling Reagent for HPLC Determination of Proline and Hydroxyproline in Myeloma Patient Plasma** CHENGYIN WANG, Yangzhou University

(2040-24 P) **Identification of Pathogenic Fungi with an Optoelectronic Nose** YINAN ZHANG, University of Illinois at Urbana-Champaign, Jon Askim, Wenxuan Zhong, Peter Orlean, Kenneth Suslick

(2040-25 P) **Label-Free Electrochemical Immunosensor for Vascular Endothelial Growth Factor (VEGF) Based on Electrochemically Reduced Graphene Oxide Films** REDA M ELSHAFEY, INRS-EMT, Mohammed Zourob, Ana C Tavares, Mohamed Siaj

(2040-26 P) **Molecular Characterization of Extracellular Phytase-Producing Fungi by Using 18S rRNA Sequence Analysis** DEMET ERDÖNMEZ, Hacettepe University Institute of Graduate Studies, Kübra Erkan, Necdet Sa lam, Nilüfer Aksöz

(2040-27 P) **Portable Diagnostic Device for the Detection of Bacillus Anthracis in Ultra-Low Resource Environments** JASON C HARPER, Sandia National Laboratories, Melissa Finely, Bryan Carson, George Bachand, Thayne Edwards, William Arndt, Julie Lovchik

(2040-28 P) **Reducing False Positives Associated with miRNA Detection** NICHOLAS E LARKEY, Oregon State University, Sean M Burrows

(2040-29 P) **Aptamer-Integrated DNA Hydrogel Nanoflowers: A New Platform for Inhibition of Multiple Drug Resistance in Targeted Anticancer Drug Delivery** LEI MEI, Hunan University, Weihong Tan, Xiaobing O Zhang

(2040-30 P) **Withdrawn**

(2040-31 P) **Determining Bacterial vs. Viral Infections via Detection of Metabolite Induced pH Changes Based on CNT FET Devices** NUVIA SAUCEDO, University of California, Riverside, Ashok Mulchandani, Yingning Gao

(2040-32 P) A **Novel Adenine High-Throughput Coupling Enzyme Assay** YANJIE SUN, Miles College, Sam Subramaniam, Charles Woods

(2040-33 P) **Integrated Nanofluidic Device for the Analysis of DNA Damage Sites** FRANKLIN I UBA, University of North Carolina at Chapel hill, Kumuditha W Ratnayake , Steven A Soper

(2040-34 P) **Plasmonic Sensing with Collagen-Nanoparticle Arrays** SARAH A UNSER, University of Cincinnati

(2040-35 P) **Post-Synthetic Modifications of DNA with Boronic Acid** DANZHU WANG, Georgia State University, Chaofeng Dai, Weixuan Chen, Hanjing Peng, Nanting Ni, Yunfeng Cheng, Xiaochuan Yang, Binghe Wang

(2040-36 P) **Cell-SELEX with Artificial Expanded Genetic Information System (AEGIS) Against Liver Cancer Cell** LIQIN ZHANG, University of Florida

(2040-37 P) **Single Molecule Enzyme-Linked Immunosorbent Assay for Cytokine Detection with Ultrasensitivity** DANLU WU, Tufts University, Milena Milutinovic, David R Walt

POSTER SESSION — Session 2050

All posters are to be mounted by 10:00 AM and remain on display until 4:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Separation Sciences: General Interest, Materials Science and Others

Wednesday Afternoon, Exposition Floor, Back of Aisles 1000-2500

(2050-1 P) **Characterization of Lauryl Acrylate Porous Polymer Monoliths used as Stationary Phases in Capillary Electrochromatography** KHOA BUI, Trinity University, Rohit Sampat, Xuanli Deng, Brady W Iba, Kelly A Hewes, Monette N Cardona, Charlisa R Daniels, Michelle M Bushey

(2050-2 P) **Development of a Strategy for Scaling SFC Methods** KENNETH J FOUNTAIN, Waters Corporation, Christopher J Hudalla, Abhijit Tarafder

(2050-3 P) **Synthesis and Characterization of Amino Acid Based Chiral Ionic Liquids** JOANNA VASSILIOU, St. John Fisher College, Irene Kimaru

(2050-4 P) **Surface Molecular Imprinting on the Sol-Gel Particles** SUNG HYO CHOUGH, Chonnam National University, Hye Ryoung Park

(2050-5 P) **Physicochemical Properties in Edible Oil of Oenocarpus Bataua var. Bataua (Areaceae: Oenocarpus)** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Alicia Rios Hurtado

(2050-6 P) **Efficient HPLC Analysis of Biologically Active Polar Compounds Using the Unique Selectivity of PFP and Diol Phase Bonded to Hybrid Silica Particles** TAKASHI SATO, YMC Co., Ltd., Ernest J Sobkow, Noriko Shoji, Takatomo Takai, Naohiro Kuriyama

(2050-7 P) **Operating Considerations in Migrating Separation Methods Among Narrowbore and Microscale UPLC System** DANIEL ROOT, Waters Corporation, Thomas E Wheat, Patricia R McConville

(2050-8 P) **HILIC and Mixed-Mode Retention of the Pentafluorophenyl Propyl (PFPP) Stationary Phase** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Shun-Hsin Liang, Chris Denicola

(2050-9 P) **Applications of Chromatography in Cosmetics and Personal Care Industries** CAROLINA LUCIA MENDOZA FORERO, Belcorp

(2050-10 P) **Analysis of Triclosan: Study and Correlation Between High Performance Liquid Chromatography (HPLC) and Thin Layer Chromatography (TLC) Methods in Cosmetic Products** CAROLINA LUCIA MENDOZA FORERO, Belcorp

(2050-11 P) **Techniques for Reducing the Effects of Sample Solvents on UHPLC Analyses** KENICHIRO TANAKA, Shimadzu Scientific Instruments, William Hedgepeth

(2050-12 P) **Direct Determination of Native Glycans by HPLC with Charged Aerosol Detection** DAVID THOMAS, Thermo Fisher Scientific, Ian N Acworth, Bruce Bailey, Marc Plante, Qi Zhang

(2050-13 P) **Usability of Amide and C28 Core Shell and Fully Porous Column for Separation of Hydrophilic Compounds** TOMOYASU TSUKAMOTO, ChromaNik Technologies Inc., Norikazu Nagae

(2050-14 P) **Method Development and Validation for the Assay of Hydrochlorothiazide and Determination of Impurities/Degradants in Raw Material Using Reverse-Phase Liquid Chromatography** DARYA URUPINA, Northeastern Illinois University, John Albazi

(2050-15 P) **Fundamental Investigation Regarding Robustness and Repeatability in HILIC Chromatography** DAVID S BELL, Supelco/Sigma-Aldrich, Hugh M Cramer, Craig R Aurand, Gaurang Parmar

(2050-16 P) **The Role of Monodisperse Particles in Ultra-Performance HPLC Columns** RICHARD A HENRY, Supelco/Sigma-Aldrich, William H Campbell, David S Bell, Hugh M Cramer, Gaurang Parmar

(2050-17 P) **Ultrafast 2D-RPLC: Superficially-Porous 2.7 µm Particles versus 1.8 µm Fully Porous Particles for Use in Second Dimension** IMAD A HAIDAR AHMAD, University of Minnesota, Robert C Allen, Brian B Barnes, Peter W Carr

(2050-18 P) **HILIC and Mixed-Mode Retention of an Embedded-Polar Stationary Phase** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Shun-Hsin Liang, Chris Denicola

(2050-19 P) **HILIC, Mixed-Mode, and Reversed-Phase: A Study in Retention Mechanisms** TY KAHLER, Restek Corporation, Sharon Lupo, Frances Carroll, Shun-Hsin Liang, Paul Connolly, Rick Lake, Chris Denicola

(2050-20 P) **Array of Boron Doped Diamond Electrodes for Electrochemical Detection in HPLC** FRANCOIS DARDOIZE, University Pierre and Marie Curie (UPMC), Eric Mahe

(2050-21 P) **Improving Reproducibility of Thermally Unsteady Fast HPLC Gradients** FABRICE G GRITTI, University of Tennessee, Joseph J Stankovich, Georges Guiochon

(2050-22 P) **An Ultimative Axial Compression Steel Column** MARKUS H FUCHS, No Affiliation Listed

(2050-23 P) **Bringing Analytical Chemistry to the Sample: A Spectrum of Portable Analytical Technologies** MARK MABRY, Rigaku Raman Technologies, Inc., Alicia Kimsey, Claire Dentiger

(2050-24 P) **Trade-Off between Sensitivity and Fluorescence: How 1064 nm Raman Beats 785 nm Raman** MARK MABRY, Rigaku Raman Technologies, Inc., Claire Dentiger, Claude Robotham

(2050-25 P) **Alpha Imaging: A New Tool to Localize Alpha Sources** CHARLY MAHE, Cea Marcoule

(2050-26 P) **Detection of Emerging Contaminants in Water by a Displacement Assay Based on High-Performance Affinity Chromatography** RYAN E MATSUDA, University of Nebraska-Lincoln, So-Hwang Ky, Christopher White, Elliott Rodriguez, Donald Jobe, Daniel Snow, David S Hage

(2050-27 P) **Liquid-Free Sample Traps for the Measurement of Trace Level Acidic and Basic Air Contamination** TYLER M MOULTON, Entegris, Inc., Jurgen M Lobert, Emily C Zaloga, Katherine M Chase

(2050-28 P) **Web-Based In-Situ Instrumentation** DON NUZZIO, Analytical Instrument Systems, Inc.

(2050-29 P) **Improving Column Performance with Parallel Segmented Flow Chromatography** LUISA PEREIRA, Thermo Fisher Scientific, Derek Hillbeck, Anthony Edge, Dafydd Milton, Harald Ritchie, Andrew Shalliker

(2050-30 P) **Active Flow Technology Coupled to Monolithic Columns** LUISA PEREIRA, Thermo Fisher Scientific, Soliven Arianne, Dafydd Milton, Anthony Edge, Harald Ritchie, Andrew Shalliker

(2050-31 P) **The Reproducibility of Constant Flow and Constant Pressure Chromatography: Time vs. Volume Based Chromatograms** JOSEPH J STANKOVICH, University of Tennessee, Knoxville, Fabrice Gritti, Paul Stevenson, Lois A Beaver, Peter Vajda, Georges Guiochon

PITTCON 2014 TECHNICAL PROGRAM

THURSDAY, MARCH 6, 2014
MORNING

SYMPOSIUM **Session 2060**

ACS DAC: Interferometry in Chemistry, Biology and Medicine
arranged by Darryl J Bornhop, Vanderbilt University

Thursday Morning, Room S401a

Darryl J Bornhop, Vanderbilt University, Presiding

8:30		**Introductory Remarks - Darryl J Bornhop**
8:35	(2060-1)	**An Ultra-Sensitive, Low-Volume, Free-Solution, Label-Free Molecular Interaction Platform** DARRYL J BORNHOP, Vanderbilt University, Amanda Kussrow, Ian Olmsted, Michael Baksh, MG Finn, Lawrence J Marnett, Shalley N Kudalkar, Esther N Pesciotta, Robert Flowers, Pierre Massion, Mohamed Hassanein
9:10	(2060-2)	**Application of Back-Scattering Interferometry in the Study of Biomolecular Interactions and Non-Aqueous Media** ROBERT FLOWERS, Lehigh University
9:45	(2060-3)	**Meeting the Need for Physiologically-Relevant Affinity Measurements** DENISE M O'HARA, Pfizer
10:20		**Recess**
10:35	(2060-4)	**Non-Small Cell Lung Cancer Biomarker Validation and Quantification Using Backscattering Interferometry** PIERRE MASSION, Vanderbilt Ingram Cancer Center, School of Medicine, Ian Olmsted, Mohamed Hassanein, Megan Hoeksema, Amanda Krussow, Ming Li, Darryl J Bornhop
11:10	(2060-5)	**Backscattering Interferometry On and In Virus-Like Particles** MG FINN, Georgia Institute of Technology, Michael Baksh, Jin-Kyu Rhee, Jolene Lau

SYMPOSIUM **Session 2070**

Application of SERS Sensors to Biomedicine and the Environment
arranged by John Rabolt, University of Delaware

Thursday Morning, Room S401bc

John Rabolt, University of Delaware, Presiding

8:30		**Introductory Remarks - John Rabolt**
8:35	(2070-1)	**Novel Platforms for SERS-Based Sensing of Infectious Disease** RICHARD A DLUHY, University of Georgia
9:10	(2070-2)	**SERS in Blood** CHRISTY L HAYNES, University of Minnesota
9:45	(2070-3)	**SERS of Biological Cells for Diagnostics and Forensics** LAWRENCE ZIEGLER, Boston University
10:20		**Recess**
10:35	(2070-4)	SERS for the Investigation of Nano-Bio Interactions JANINA KNEIPP, Humboldt-Universität zu Berlin, Daniela Drescher, Tina Büchner, Ingrid Zeise
11:10	(2070-5)	**Immobilization of Gold Nanorods onto Electrospun Polymer Nanofibers via Polyelectrolyte Decoration—A 3-D SERS Substrate** JOHN RABOLT, University of Delaware, Wenqiong Tang, Bruce Chase

SYMPOSIUM **Session 2080**

Characterization and Quality Control of Monoclonal Antibodies and Biopharmaceutical: Best Practices and Developments
arranged by Michael W Dong, Genentech

Thursday Morning, Room S401d

Michael W Dong, Genentech, Presiding

8:30		**Introductory Remarks - Michael W Dong**
8:35	(2080-1)	**Deciphering the Chromatographic Unknowns** TAYLOR Y ZHANG, Genentech
9:10	(2080-2)	**Analytical Strategies to Support Biologics Development** DAOTIAN FU, Livzon Mabpharm, Inc.
9:45	(2080-3)	**The Utility of Mass Spectrometry in Biopharmaceutical Characterization Studies** OLEG V BORISOV, Novavax
10:20		**Recess**
10:35	(2080-4)	**Practical Applications of High-Throughput Capillary Electrophoresis Methods** DAVID A MICHELS, Genentech, A Member of the Roche Group
11:10	(2080-5)	**Advances in New Ion-Exchange Stationary Phases for Bio-Pharmaceutical Analysis** CHRISTOPHER POHL, Thermo Fisher Scientific

SYMPOSIUM **Session 2090**

Fiber-Based Analytical Platforms
arranged by Antje Baeumner, University of Regensburg and R Kenneth Marcus, Clemson University

Thursday Morning, Room S402a

R Kenneth Marcus, Clemson University, Presiding

8:30		**Introductory Remarks - R Kenneth Marcus and Antje Baeumner**
8:35	(2090-1)	**Electrospinning Functional Nanofibers for Analytical Applications** MARGARET W FREY, Cornell University, Larissa Buttaro, Daehwan Cho, Dapeng Li
9:10	(2090-2)	**Nano Fiber-Based Biosensors for Integrated Sample Preparation** ANTJE BAEUMNER, University of Regensburg
9:45	(2090-3)	**Fiber-Based Platforms for Sampling/Sample Preparation** JANUSZ PAWLISZYN, University of Waterloo
10:20		**Recess**
10:35	(2090-4)	**Integration of Paper Microfluidic Methods for Detection of Infectious Diseases for Low Resource Settings** PAUL YAGER, University of Washington, Barry Lutz, Elain S Fu
11:10	(2090-5)	**Capillary-Channeled Polymer (C-CP) Fibers: Versatile Phases for Protein Analytics** R KENNETH MARCUS, Clemson University, Abby Schadock-Hewitt, Benjamin T Manard, Marissa Pierson

SYMPOSIUM **Session 2100**

Method Development Strategies for Two-Dimensional Liquid Chromatography -
arranged by Dwight Stoll, Gustavus Adolphus College

Thursday Morning, Room S402b

Dwight Stoll, Gustavus Adolphus College, Presiding

8:30		**Introductory Remarks - Dwight Stoll**
8:35	(2100-1)	**Selecting a Suitable Column for the Second Dimension in RPxRP** PETER W CARR, University of Minnesota, Robert C Allen, Brian B Barnes, Imad A Haidar Ahmad
9:10	(2100-2)	**Applications of On-Line/At-Line Two Dimensional HPLC with VWD/DAD-MS Detection for Pharmaceutical Analysis** TODD D MALONEY, Eli Lilly and Company
9:45	(2100-3)	**Method Development Strategies for Pharmaceutical Analysis Using 2D-LC-MS** CADAPAKAM (CJ) VENKATRAMANI, Genentech, Larry Wigman, James Girotti
10:20		**Recess**
10:35	(2100-4)	**Multi-Dimensional Liquid Chromatography Approaches in Food Analysis** PAOLA DUGO, University of Messina, Francesco Cacciola, Paola Donato, Mondello Luigi
11:10	(2100-5)	**Two-Dimensional LC-SRM Bioanalytical Assays for Small Molecules and Peptides** CATALIN E DONEANU, Waters Corporation, Paul Rainville

SYMPOSIUM **Session 2110**

More Than One Way to Skin a Cat: The Diversity of Analytical Tools for Chemically Mapping the Brain
arranged by Parastoo Hashemi, Wayne State University and Michael L Heine, University of Arizona

Thursday Morning, Room S404a

Parastoo Hashemi, Wayne State University, Presiding

8:30		**Introductory Remarks - Parastoo Hashemi and Michael L Heine**
8:35	(2110-1)	**Neurochemical Sensors for Tracking the Dynamics of Human Brain Injury** MARTYN G BOUTELLE, Imperial College London, Michelle Rogers, Chi Leng Leong, Sally Gowers, Anthony J Strong, Xize Niu
9:10	(2110-2)	**New Views of Brain Chemistry from LC-MS and Microfabricated Sampling Probes** ROBERT KENNEDY, University of Michigan
9:45	(2110-3)	**Lab on a Sheep** SUSAN M LUNTE, University of Kansas, Rachel A Saylor, David E Scott, Anne Regel
10:20		**Recess**
10:35	(2110-4)	**High-Throughput Quantitative Analysis of Neurochemicals and Behavior in Insects** MICHAEL L HEIEN, University of Arizona
11:10	(2110-5)	**Fast-Scan Cyclic Voltammetry as a Screening Tool for Anti-Depressants** PARASTOO HASHEMI, Wayne State University, Janet Best, Michael C Reed, Kevin M Wood

SYMPOSIUM **Session 2120**

Nanobiotechnology against Cancer, Heart and Neurological Diseases: A Fight in Progress

arranged by Raoul Kopelman, University of Michigan and Weihong Tan, University of Florida

Thursday Morning, Room S404bc

Raoul Kopelman, University of Michigan, Presiding

8:30		**Introductory Remarks - Raoul Kopelman and Weihong Tan**
8:35	(2120-1)	**Studying Single Cell Death Mechanisms and the Dynamics of Drug Delivery Using Targeted Plasmonically Enhanced Single Cell Imaging Spectroscopy** MOSTAFA A EL-SAYED, Georgia Institute of Technology
9:10	(2120-2)	**Targeted Multifunctional Nano Platforms for Diagnostics and Therapy of Cancer and Heart Arrhythmia** RAOUL KOPELMAN, University of Michigan
9:45	(2120-3)	**Developing Nanoscale Measurements for the Brain** PAUL S WEISS, University of California, Los Angeles, Anne M Andrews
10:20		**Recess**
10:35	(2120-4)	**Biological Probes Based on AIE Nanodots** BEN ZHONG TANG, Hong Kong University of Science and Technology
11:10	(2120-5)	**Surface Nanostructured Engineering: Methodology and Possible Application for Bioanalysis** LIJUN WAN, University of Florida/Chinese Academy of Sciences

SYMPOSIUM **Session 2130**

Proteomic Imaging of Ultrastructure Brain Tissue

arranged by Andrea Jaquins-Gerstl, University of Pittsburgh and Marcel Bruchez, Carnegie Mellon University

Thursday Morning, Room S405a

Andrea Jaquins-Gerstl, University of Pittsburgh, Presiding

8:30		**Introductory Remarks - Andrea Jaquins-Gerstl and Marcel Bruchez**
8:35	(2130-1)	**Watching the Brain with Super-resolution Microscopy** BO HUANG, University of California, San Francisco
9:10	(2130-2)	Imaging the Molecular Organization and Ultrastructure of Mammalian Cortex Using Array Tomography KRISTINA D MICHEVA, Stanford University School of Medicine
9:45	(2130-3)	**Mapping Mouse Brains by STP Tomography** PAVEL OSTEN, CSHL
10:20		**Recess**
10:35	(2130-4)	**Proteomic Imaging of Single Cells and Brain Tissues** XIAOHU GAO, University of Washington
11:10	(2130-5)	**Fluorogenic Detection of Proteins, Nucleic Acids and Small Metabolites for Cell and Tissue Imaging** MARCEL BRUCHEZ, Carnegie Mellon University

SYMPOSIUM **Session 2140**

Toward a Preferred Instrument for Gram Scale Supercritical Fluid Chromatography (SFC) Purification

arranged by Christopher J Welch, Merck Research Laboratories and Christina Kraml, Lotus Separations, LLC

Thursday Morning, Room S404d

Christopher J Welch, Merck Research Laboratories, Presiding

8:30		**Introductory Remarks - Christopher J Welch and Christina Kraml**
8:35	(2140-1)	**Latest Development in SFC Technology and Its Expanding Applications in Drug Discovery** YINGRU ZHANG, Bristol-Myers Squibb, Chunlei Wang
9:10	(2140-2)	**Recent Progress in the Development of Gram Scale Preparative SFC Instrumentation** RUI CHEN, Waters Corporation
9:45	(2140-3)	**Addressing User Needs for Gram Scale Preparative SFC** DJ TOGNARELLI, Jasco Inc., John Burchell
10:20		**Recess**
10:35	(2140-4)	**An Approach to a Unified Hardware and Software Solution for Preparative Scale SFC** GEOFFREY B COX, PIC Solution Inc.
11:10	(2140-5)	**Gram-Scale Preparative SFC** CHRISTINA KRAML, Lotus Separations, LLC

ORGANIZED CONTRIBUTED SESSIONS **Session 2150**

SAS: Women in Spectroscopy

arranged by Ellen V Miseo, Analytical Answers, Inc. and Gloria Story, Procter and Gamble Co

Thursday Morning, Room S405b

Ellen V Miseo, Analytical Answers, Inc., Presiding

8:30	(2150-1)	**Why Do We Need a Woman In Spectroscopy Session?** ELLEN V MISEO, Analytical Answers, Inc.
8:50	(2150-2)	**Good Vibrations in the Lab and at Home: A Balancing Act of A Spectroscopy Entrepreneur** RINA K DUKOR, BioTools, Inc
9:10	(2150-3)	**Fifty Years - and Counting - in Molecular Spectroscopy** MARILYN E JACOX, National Institute of Standards and Technology
9:30	(2150-4)	**Careers at Primarily Undergraduate Institutions: Teaching, Research, and Service** KARLA S MCCAIN, Austin College
9:50		**Recess**
10:05	(2150-5)	**An Experimental Life: Three Decades of Negotiating the Academic Terrain** LINDA B MCGOWN, Rensselaer Polytechnic Institute
10:25	(2150-6)	**Being a Woman in Spectroscopy: Hard Work, Planning, and Serendipity** KATHERINE ANTOLIN BAKEEV, B&W Tek
10:45	(2150-7)	**A Fulfilling Career in Spectroscopy** DIANE PARRY, The Procter & Gamble Co
11:05	(2150-8)	**Career Options for Women In Chemistry** ANNA M TISINGER, Agilent Technologies

ORAL SESSIONS **Session 2160**

Advances in Catalysis and Hydrocarbon Analysis

Thursday Morning, Room S501a

Melissa Wilcox, Grace Materials Technologies, Presiding

8:30	(2160-1)	**Trace Analysis of Total Sulfur and Nitrogen in Hydrocarbon Matrixes by Combustion and UV Fluorescence and Chemiluminescence: Optimization of Analytical Parameters** AARON A MENDEZ, PAC, Lisa Houston, Chetan Desai
8:50	(2160-2)	**Investigation of Copper Monolayer Catalyst for CO2 Reduction** JARED B STEED, The Ohio State University, Anne Co, Joshua Billy
9:10	(2160-3)	**Application of High Resolution Time-of-Flight Mass Spectrometry Platforms in Petroleomics** CLECIO F KLITZKE, Leco Corporation, David E Alonso, Kevin Siek, Elizabeth Humston-Fulmer, John Heim, Joe Binkley, Jeff Patrick
9:30	(2160-4)	**Robust and Reliable Oxygen Catalysts: Pt on Nanoporous Copper** ERIC J COLEMAN, The Ohio State University, Anne Co
9:50		**Recess**
10:05	(2160-5)	**Fuel Quality Verification in 30 Seconds at the Point of Receipt Using a Military Grade Raman Spectrometer** STUART FARQUHARSON, Real-Time Analyzers, Inc., Carl Brouillette, Hermes Huang, Wayne Smith
10:25	(2160-6)	**Online GC-MS Sampling and Analysis of Combustion Engine Crankcase Ventilation Aerosols** ANDREAS BEHN, Hamburg University of Technology, Matthias Feindt, Gerhard Matz, Sven Krause
10:45	(2160-7)	**Pulsed Flow Modulation GCxGC-MS with Cold EI – The Emergence of GCxGCxMS** AVIV AMIRAV, Tel Aviv University, Alexander Fialkov, Uri Keshet, Tal Alon

ORAL SESSIONS **Session 2170**

Bioanalytical Separations

Thursday Morning, Room S501bc

Omowunmi 'Wunmi' Sadik, State University of New York at Binghamton, Presiding

8:30	(2170-1)	**Development of Monolithic Microcolumns Containing Immobilized Albumin for Rapid Chiral Separations** ERIKA L PFAUNMILLER, University of Nebraska-Lincoln, Zhao Li, Stephen Gross, David S Hage, Mahli Hartmann, Shannon Lum, Marie Laura Paulemond
8:50	(2170-2)	**Determination of Carbohydrates in Various Matrices by Capillary HPAE-PAD** TERRI TOYOKO CHRISTISON, Thermo Fisher Scientific, Alexander Zhang, Cathy Tanner, Linda Lopez
9:10	(2170-3)	**Capillary-Channeled Polymer (C-CP) Stationary Phases for the Separation of Lignin and its Degradation Products** PAUL HAUPT-RENAUD, Clemson University, R Kenneth Marcus

9:30	(2170-4)	**New Zirconia Magnetic Microspheres as a New Recyclable Chiral Selector for the Separation of Racemic Drugs** YONG-ILL LEE, Changwon National University, Avvaru Praveen Kumar
9:50		**Recess**
10:05	(2170-5)	**Measurement of the Secretion Dynamics of Islets of Langerhans Using a Microfluidic Device** NIKITA MUKHITOV, Florida State University, Lian Yi, Michael G Roper
10:25	(2170-6)	**New Advances in Stationary Phases for Glycan Analysis** XIAODONG LIU, Thermo Fisher Scientific, Udayanath Aich, Christopher Pohl
10:45	(2170-7)	**Development of Peptide Reporters for Monitoring E3 Ligase and Proteasome Activity in Single Cells** GREGERY WOSS, University of North Carolina at Chapel Hill, Adam Melvin, Kaiulani Houston, Lukas Dumberger, Marcey Waters, Nancy Allbritton

ORAL SESSIONS **Session 2180**

Capillary Electrophoresis: Small Molecules and Neurotransmitters

Thursday Morning, Room S501d

Thomas E Wheat, Waters Corporation, Presiding

8:30	(2180-1)	**Metabolomic and Peptidomic Profiling of Crustacean Neuroendocrine Tissues by Capillary Electrophoresis-electrospray Ionization-Mass Spectrometry** XUEFEI ZHONG, University of Wisconsin-Madison, Chuanzi Ouyang, Ling Hao, Lingjun Li
8:50	(2180-2)	**Multiple-Location Monitoring of Amino Acid Neurotransmitter in Rat Brain Using Integrated Microfluidic Systems** MAOJUN GONG, Wichita State University, Qiyang Zhang
9:10	(2180-3)	**Analysis of Sialic Acids in Bovine Submaxillary Mucins by Capillary Electrophoresis with Laser Induced Fluorescence Detection** CHI MAN NG, University at Buffalo - SUNY, Luis A Colon
9:30	(2180-4)	**Enzymatic Characterization and Enzymatic Assay via Phospholipid-Assisted Capillary Electrophoresis** CASSANDRA L CRIHFIELD, West Virginia University, Srikanth Gattu, Anthony Moncrief, Lisa A Holland
9:50		**Recess**
10:05	(2180-5)	**Separation and Detection of Neurotransmitters in D. Melanogaster Using Capillary Electrophoresis Coupled to Fast Scan Cyclic Voltammetry** MADELAINE DENNO, University of Virginia, B Jill Venton
10:25	(2180-6)	**In Vitro-Microdialysis Coupled with High-Speed Capillary Electrophoresis to Monitor Signaling Events from Cells** AMY L HOGERTON, University of Minnesota
10:45	(2180-7)	**Rat Pinealocyte Studies Using Capillary Electrophoresis with Laser Induced Fluorescence Detection Hyphenated with Optical Trapping** MOHAMMAD EHSAN, University of Illinois at Urbana-Champaign, Christine Cecala, Christopher Dailey, Jonathan V Sweedler
11:05	(2180-8)	**Development and Characterization of a Novel Sheathless Interface for High Sensitivity CITP/CZE-nanoESI-SRM MS Sample Quantification** KEQI TANG, Pacific Northwest National Laboratory

ORAL SESSIONS **Session 2190**

Electrodes and Electrode Surfaces

Thursday Morning, Room S502a

Mark T Stauffer, University of Pittsburgh at Greensburg, Presiding

8:30	(2190-1)	**Real-Time Electrochemical Monitoring of Metabolic Processes In Hollow Fiber Bioreactor Cellular Cultures** ANDREW COGNATA, Vanderbilt University, David E Cliffel
8:50	(2190-2)	**Biochar Fiber Microelectrode with Regular Macropores** JUNHUA JIANG, University of Illinois at Urbana-Champaign
9:10	(2190-3)	**Recessed Ring-Disk Nanoelectrode Arrays Integrated in Nanofluidic Structures for Selective Electrochemical Detection in Lab-on-a-Chip Devices** CHAOXIONG MA, University of Notre Dame, Paul W Bohn
9:30	(2190-4)	**Real-Time Detection of Localized Voltage-Driven Delivery of Charged Species with Ion Current Rectification Effect** WENQING SHI, Indiana University, Niya Sa, Rahul Thakar, Baker A Lane
9:50		**Recess**
10:05	(2190-5)	**All-Diamond Boron Doped Diamond (BDD) Band Electrodes for in situ pH Alterations Under Flow Conditions: Enhancing Hydrogen Sulfide Detection** ELENI BITZIOU, University of Warwick, Nicola Palmer, Tim Mollart, Mark E Newton, Julie V Macpherson
10:25	(2190-6)	**All Diamond Conductivity Measurement Device** MAXIM B JOSEPH, University of Warwick, Kyriacoulla Dalmira, Mark E Newton, Julie V Macpherson
10:45	(2190-7)	**One Dimensional Silver/Silver Halide Nanocomposites: Synthesis, Electrocatalytic Activity and Density Functional Theory Study** SU-JIN KIM, Ewha Womans University, Jun Ho Shim, Seung-Cheol Lee, Chongmok Lee, Youngmi Lee
11:05	(2190-8)	**The Mechanism Study of Oxygen Reduction Reaction at Porous Pt Layer Depending on Its Porosity Using Scanning Electrochemical Microscopy (SECM)** YUN-BIN CHO, Ewha Womans University, Chongmok Lee, Youngmi Lee, Sarah S Park

ORAL SESSIONS **Session 2200**

Laboratory Informatics and Management (Half Session)

Thursday Morning, Room S502b

Arnold 'Pete' Snyder, Private Citizen, Presiding

8:30	(2200-1)	**Development of an Open Framework for Laboratory Data** GORDON HANSEN, Boehringer Ingelheim Pharm./Allotrope Foundation
8:50	(2200-2)	**LIMS or ELN: Which is Right for Your Lab?** JEFFREY POLICASTRO, CSols, Inc.
9:10	(2200-3)	**Benefits of an Integrated LIMS and ELN Platform Solution** MICHAEL V KELLY, LabWare
9:30	(2200-4)	**LIMS Implementations - Lessons Learned** KURT ROBAK, CSols, Inc.

ORAL SESSIONS **Session 2210**

LC: Column Chemistry (Half Session)

Thursday Morning, Room S502b

Arnold 'Pete' Snyder, Private Citizen, Presiding

10:05	(2210-1)	**Temperature Assisted Solute Focusing for Increased Analysis Sensitivity in Capillary High Performance Liquid Chromatography** STEPHEN R GROSKREUTZ, University of Pittsburgh, Yanguang Ou, Stephen G Weber, Juanfang Wu
10:25	(2210-2)	**Improving the Performance of Nanodiamond-Containing Core-Shell Particles via Extensive Characterization of the Nanodiamonds** BHUPINDER SINGH, Brigham Young University, David S Jensen, Andrew J Miles, Michael A Vail, Andrew E Dadson, Matthew R Linford
10:45	(2210-3)	**Performances Comparison of Different Graphitic Materials in Sample Pretreatment and Liquid Chromatography** CARLO CRESCENZI, Salerno University, Giovanni D'Amato, Pasquale Del Gaudio, Ermanno Vasca
11:05	(2210-4)	**A Comparison of the Effect of System Dispersion on 2.1 and 3.0 mm i.d. Columns Packed with Sub-2- µm Solid-Core Particles** JONATHAN E TURNER, Waters Corporation, Bonnie Alden, Pamela Iraneta, Daniel Walsh, James Cook, Steven Shiner, Michael Savaria, Kevin Wyndham, Thomas Walter

ORAL SESSIONS **Session 2220**

Microfluidics: Monitoring and Multiple Analytes

Thursday Morning, Room S503a

X Nancy Xu, Old Dominion University, Presiding

8:30	(2220-1)	**Gold Nanoparticle-Mediated Multivalent Binding For Enhanced Capture Of Cancer Cells in Microfluidic Devices** WEIAN SHENG, University of Florida, Z Hugh Fan
8:50	(2220-2)	**Simultaneous Monitoring of Multi-Hormone Secretion from Islets of Langerhans on a Microfluidic Device** LIAN YI, Florida State University, Michael G Roper
9:10	(2220-3)	**Molecular Detection Utilizing Surface-Plasmon-Assisted Fluorescence in a V-Shaped Microfluidic Channel** MAKOTO FUJIMAKI, National Institute of Advanced Industrial Science and Technology, Ken-ichi Nomura, Subash CB Gopinath, Thangavel Lakshmipriya, Nobuko Fukuda, Xiaomin Wang
9:30	(2220-4)	**A PDMS/Paper Hybrid Microfluidic Biochip Integrated with Graphene Oxide-Based Nanosensors for Multiplexed Pathogen Detection** XIUJUN (JAMES) LI, University of Texas at El Paso, Peng Zuo, Delfina Dominguez
9:50		**Recess**
10:05	(2220-5)	**Quantitative Gene Expression Analysis Using Multiplexed Asymmetric PCR and Silicon Photonic Microring Resonators** RICHARD M GRAYBILL, University of Illinois at Urbana-Champaign, Ryan C Bailey

10:25	(2220-6)	**A Perfusion Controller/Microclinical Analyzer for Online Optical, Electrochemical, and Mass Spectrometry Analysis of Microfluidic Bioreactors** JENNIFER R MCKENZIE, Vanderbilt University, John P Wikswo, David E Cliffel
10:45	(2220-7)	**On-Chip Droplet Detection and Quantification - Taking Control of Digital Microfluidics for Chemical Analysis** CHI LENG LEONG, Imperial College London, Robert M Learney, Martyn G Boutelle
11:05	(2220-8)	**Multichannel Linear-Array Aptasensor for Multiple Protein Detection Built on Graphene Oxide Surface** YUKO UENO, NTT Microsystem Integration Laboratories, Kazuaki Furukawa, Inoue Suzuyo, Katsuyoshi Hayashi, Hiroki Hibino, Hiroshi Koizumi

ORAL SESSIONS **Session 2230**

Neurochemistry: Peptides, Amino Acids, Adenosine, Norepinephrine, Peroxide, and Oxygen

Thursday Morning, Room S503b

Rose Ann Clark, Saint Francis University, Presiding

8:30	(2230-1)	**Analysis of Enantiomeric Amino Acids in Biological Samples via Capillary Electrophoresis Coupled with Laser-Induced Fluorescence and Mass Spectrometry** TAKAYUKI KAWAI, University of Illinois, Nobutoshi Ota, Jonathan V Sweedler
8:50	(2230-2)	**Monitoring Addiction In-Vivo and In Real-Time with Fast-Scan Cyclic Voltammetry** MEGAN E FOX, University of North Carolina at Chapel Hill, R Isaac Studebaker, Nathaniel J Swofford, R Mark Wightman
9:10	(2230-3)	**Real-Time Voltammetric Detection of Met-Enkephalin in Rat Adrenal Tissue** LARS DUNAWAY, North Carolina State University, Andreas C Schmidt, Gregory McCarty, Leslie A Sombers
9:30	(2230-4)	**Histaminergic Regulation of Cerebral Oxygen Dynamics** SUSAN CARROLL, University of North Carolina at Chapel Hill, Anna M Belle, Elizabeth S Bucher, Megan E Fox, R Mark Wightman
9:50		**Recess**
10:05	(2230-5)	**Mass Spectrometry-Based Quantitation of Peptides Differentially Expressed with Exposure to a Drug-Paired Context** SARAH E DOWD, University of Illinois at Urbana-Champaign, Martina L Mustroph, Elena V Romanova, Justin S Rhodes, Jonathan V Sweedler
10:25	(2230-6)	**Electrochemical Monitoring of Adenosine Modulation of Dopamine in Brain Slices** ASHLEY ELIZABETH ROSS, University of Virginia, B Jill Venton
10:45	(2230-7)	**Mechanisms of Spontaneous Transient Adenosine Release and Extracellular Clearance** MICHAEL NGUYEN, University of Virginia
11:05	(2230-8)	**Small Molecule Trityl-based MS-tag Conjugates for Cell Surface Antigen Recognition and Application in Histological Analysis** CHAOFENG DAI, Georgia State University, Yueqin Zheng, Lifang Wang, Weixuan Chen, Danzhu Wang, Siming Wang, Richard R Drake, Binghe Wang

ORAL SESSIONS **Session 2240**

Water Treatment Technologies

Thursday Morning, Room S504a

Srikanth Gattu, West Virginia University, Presiding

8:30	(2240-1)	**Investigating Temperature Effects on Haloacetic Acid Concentrations in Bulk Sodium Hypochlorite Solutions used for Drinking Water Disinfection** CHRISTINA M HENSON, University of Memphis, Paul S Simone, Gary L Emmert
8:50	(2240-2)	**Selective Adsorption of Organic Pollutants by Resorcinarene-Based Supramolecular Polysaccharide Materials** TAMUTSIWA M MUTUTUVARI, Marquette University, Chieu D Tran
9:10	(2240-3)	**Automating Near Real Time Trihalomethane Monitoring and Applications to Water Treatment Process Control** AARON W BROWN, University of Memphis, Paul S Simone, Gary L Emmert
9:30	(2240-4)	**Water Treatment Using Pistia stratiotes for Silver(I) and Silver Nanoparticles** NICOLE HANKS, University of Cincinnati, Joseph A Caruso, Peng Zhang
9:50		**Recess**
10:05	(2240-5)	**A RP-HPLC Method for the Detection of Fluoxetine, Carbamazepine and Venlafaxine in Various Water Systems** GAURAV SHARMA, Idaho State University, James C Bigelow

POSTER SESSION **Session 2250**

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Biomaterials and Natural Products- Synthesis and Characterization

Thursday Morning, Exposition Floor, Back of Aisles 1000-2500

(2250-1 P)	**Nature-Inspired Drug-DNA Adduct as Nuclease-Resistant Covalent Drug-DNA Conjugates for Targeted Cancer Therapy** GUIZHI ZHU, University of Florida, Weihong Tan
(2250-2 P)	**Synthesis and Biological Activity of Azetidin-2-one Containing Acetyl Pyrazoline Derivatives** SHAILESH H SHAH, Patel JDKD Science College
(2250-3 P)	**Physicochemical Parameters of Quality Associated to Roay Jelly Apis Mellifera L (Hymenoptera: Apidae) in Columbia** GUILLERMO SALAMANCA GROSSO, Universidad del Tolima, Mónica Patricia Osorio Tangarife, Laura María M Reyes Méndez
(2250-4 P)	**Analytical Challenges and Limitations in the Determination of Free-Base Nicotine Cigarette Smoke Deliveries** JOSÉ J PÉREZ, Centers for Disease Control and Prevention, Liza Valentín-Blasini, Roberto Bravo, Clifford H Watson
(2250-5 P)	**Convergent Synthesis and Antimicrobial Evaluation of Thiazolo [3,2-a] Pyrimidine Derivatives** BALBIR KAUR, Punjabi University, Ramandeep Kaur, Lovepreet Kaur
(2250-6 P)	**Self-Oscillations of Chemical Systems Based on Novel Porphyrin Derivatives** TAKASHI ARIMURA, NRI of AIST, Masaru Mukai, Naoki Mitsuyama, Ikeda Shogo
(2250-7 P)	**Preparative Separation of Active Components in Natural Products Using Low-Pressure Gradient Preparative HPLC** KENICHIRO TANAKA, Shimadzu Scientific Instruments, William Hedgepeth, Lincoln Grimes, Tsutomu Watanabe, Takaei Kitagawa, Yosuke Iwata
(2250-8 P)	**Comparing Gas and Liquid Chromatography Determinations of Fatty Amines** LEONARD SIDISKY, Supelco/Sigma-Aldrich, Choyce Weatherly, Ross M Woods, Chendong Xu, Glenda Vale, Alain Berthod, Daniel W Armstrong, Zachary S Breitbach
(2250-9 P)	**Selective Detection of Cocaine in Money Using Gas Chromatography-Triple Quardrupole Mass Spectrometry** RAMKUMAR DHANDAPANI, Seton Hall University, Shilpi Chopra, Nicholas H Snow
(2250-10 P)	**Analysis of Phytosterols in Natural Products by HPLC-ECD** BRUCE BAILEY, Thermo Fisher Scientific, Ian N Acworth, Marc Plante, Qi Zhang, David Thomas

POSTER SESSION **Session 2260**

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Chemical, Biological and Explosives Analysis

Thursday Morning, Exposition Floor, Back of Aisles 1000-2500

(2260-1 P)	**Retrospective Assessment of Chemical Warfare Agent Exposure in Humans Using LC-MS/MS** RUTH N UDEY, Lawrence Livermore National Laboratory, Todd H Corzett, Carlos A Valdez, Saphon Hok, Audrey M Williams
(2260-2 P)	**Effect of Dopant on the Ion Mobility of Chemical Warfare Agents** YASUO SETO, National Research Institute of Police Science, Takafumi Satoh, Tomohide Kondo, Hisayuki Nagashima, Tomoki Nagoya, Takeshi Ohmori, Mieko Kanamori-Kataoka, Koichiro Tsuge, Isaac Ohsawa, Nobuo Nakano
(2260-3 P)	**Explosives Trace Detection by Mass Spectrometry: An Automated Particle Sampler for Collecting Explosives Particles Adhering to Passenger's Baggage** HISASHI NAGANO, Hitachi, Ltd., Yasuaki Takada, Hideo Kashima, Masakazu Sugaya, Koichi Terada, Yuichiro Hashimoto, Minoru Sakairi
(2260-4 P)	**Vapor Performance Testing of Filter Materials and Filter Canisters** MARK HANNING-LEE, Jacobs Dugway Team, Brian Johnson, Laurence Adair, Darren Jolley, Joseph Giese
(2260-5 P)	**Breeze Tunnel Testing of Collective Protection Tent Systems** MARK HANNING-LEE, Jacobs Dugway Team, Laurence Adair, Joseph Giese
(2260-6 P)	**Effect of Sample Gas Humidity on Detector Arrays** JOERN FRANK, Hamburg University of Technology, Hendrik Fischer, Bert Ungethuem, Andreas Walte, Gerhard Matz

(2260-7 P) **Dynamic Detection Range Expansion of a Gas Measurement Device** HENDRIK FISCHER, Hamburg University of Technology, Joern Frank, Gerhard Matz, Bert Ungethuem, Andreas Walte

(2260-8 P) Signal Prediction in Sensor Systems HENDRIK FISCHER, Hamburg University of Technology, Joern Frank, Gerhard Matz

(2260-9 P) **Headspace Analysis of Low Volatility Explosive Compounds** LAURYN DEGREEFF, Naval Research Lab, Christopher Katilie, Kevin Johnson, Susan Rose-Pehrsson

(2260-10 P) **Real-Time Measurements Of Airborne Fungal Spores Biomarkers Using PILS-LC-MS/MS** NICOLAS BONNAIRE, LSCE: CEA/CNRS/UVSQ, Roland Sarda-Estève, Lorna Foliot, Marie-Hélène Nadal, Jean Sciare

(2260-11 P) **Stimulating of Biodegradation of Oxamyl Pesticide by Treatment of Fungus with Gamma Radiation** ABD EL-MONEIM M AFIFY, Cairo University, Ramy Romeila

(2260-12 P) **Spectroscopic Investigations on Mode of Interaction of Anti-cancer Drug Lomustine with RNA** SHWETA AGARWAL, CSIR-National Physical Laboratory, Ranjana Mehrotra, Deepak Jangir

(2260-13 P) **Determination of Organophosphonate Chemical Warfare Agent Degradation Products in Water, Soil and Wipe Samples by UPLC/MS/MS** ANTHONY GUGLIOTTA, CSS-Dynamac, Alexander Bleich, Julia Capri, Lawrence Kaelin

POSTER SESSION — Session 2270

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Forensic Analysis

Thursday Morning, Exposition Floor, Back of Aisles 1000-2500

(2270-1 P) **GC-MS, GC-TOF-MS and GC-IRD Methods for the Differentiation of Regioisomeric and Isobaric Designer Drugs of the Piperazine Class** KARIM ABDEL-HAY, Auburn University, Randall Clark, Jack DeRuiter

(2270-2 P) **Advanced Forensic Applications Performed with GC-MS with Cold EI** AVIV AMIRAV, Tel Aviv University, Bogdan Belgorodsky, Alexander Fialkov, Tal Alon

(2270-3 P) **Analysis of Cremated Remains Using Capillary Electrophoresis** CHRISTA A CURRIE, College of Mount St Joseph, Devon Heil, William C Wetzel

(2270-4 P) **Further Investigation of Principal Components Analysis for Identification of Ignitable Liquids in Fire Debris** JORDYN L GEIGER, Michigan State University, Victoria L McGuffin, Ruth Waddell-Smith

(2270-5 P) **Differentiation of Regioisomeric Methylamphetamines by GC/MS** HIROYUKI INOUE, National Research Institute of Police Science, Shoko Negishi, Yukiko Nakazono, Kenji Tsujikawa, Yuko T Iwata, Kazuna Miyamoto, Fumiyo Kasuya

(2270-6 P) **Spectral Imaging Microscopy of Blue Pen Inks Using an Improved Cromoscope** KATHLEEN P MILLER, University of North Carolina Wilmington, Michael R Webb

(2270-7 P) **A Spectral Matching Algorithm for Raman Spectroscopy** ANUDEEP POLAM, Cleveland State University, John F Turner

(2270-8 P) **Forensic Discrimination of Cotton Fibers by Derivative Preprocessing of UV/visible Spectra and Multivariate Statistics** STEPHEN L MORGAN, University of South Carolina, Nathan C Fuenffinger

(2270-9 P) **Instrumental Discrimination of Cultivated and Wild Silk** SHINICHI SUZUKI, National Research Institute of Police Science

(2270-10 P) **New Egun Based Non-Radioactived Ion Sources** ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer, Ralf Zimmermann, Robert Geissler

(2270-11 P) **The Detection of Explosives, Tics and Cwas with A Multipurpose Detector Array** ANDREAS WALTE, Airsense Analytics, Bert Ungethuem, Wolf Muenchmeyer, Sivapoom Pongphaiboon

(2270-12 P) **Determination of Inorganic Improvised Explosive Device Signatures Using Laser Electrospray Mass Spectrometry Detection with Offline Classification** PAUL M FLANIGAN, Temple University, John J Brady, Elizabeth J Judge, Robert J Levis

POSTER SESSION — Session 2280

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Materials Science

Thursday Morning, Exposition Floor, Back of Aisles 1000-2500

(2280-1 P) **Analytical Evaluation of Utilization Natural Cellulosic Fiber Waste as Reinforcing Filler for Rubber** FAHIMA M HELALY, National Research Centre

(2280-2 P) **Material Application of Novel Interacting Blends of S-Triazine and Epoxy Residues Containing Unsaturated Polyesters and Epoxy Resins** RAMESHCHANDRA P PATEL, CU Shah Science College

(2280-3 P) **Nitrogen, Carbon and Sulfur Determination in Paper by Flash Combustion** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(2280-4 P) **Improved Synthesis and Packing Procedure for Carbon Clad Silica Stationary Phases** IMAD A HAIDAR AHMAD, University of Minnesota, Robert C Allen, Brian B Barnes, Peter W Carr

(2280-5 P) **Evaluation of Five Core Shell Columns Based on Both Separation Behavior and Physical Property** NORIKAZU NAGAE, ChromaNik Technologies Inc., Tomoyasu Tuskamoto

(2280-6 P) **Synthesis and Characterization of Novel Calamitic Liquid Crystalline Compounds Containing 1,3,5-Trisubstituted Pyrazole Ring and Their Cu(II) Complexes** BHARAT THAKER, Veer Narmad South Gujarat University, Deepali Solanki, Neeraj Patel, Kalpesh Patel, Shashikant Patel

(2280-7 P) **Combining Desorption and Extractive Electrospray Ionization Sources to Intercept Transient High-Valent Iron Oxo Catalytic Intermediates** KEVIN PETERS, University of Illinois at Urbana-Champaign

(2280-8 P) **Laser Ablation Inductively Coupled Plasma Mass Spectrometry as a Tool for Elemental Mapping Heterogeneous Samples** TOMAS VACULOVIC, CEITEC MU, Masaryk University, Karel Breiter, Viktor Kanicky, Lenka Vyslouzilova

(2280-9 P) **Determination of Major and Minor Elements in Marine Sediments of Manganese Crusts by ICP-AES** SUN YOUBAO, Shimadzu (China) Co., Ltd., Feng Xu

(2280-10 P) **X-Ray Diffraction Study of Corrosion Products Formed on Anti-Weather Steel** MATASHIGE OYABU, Kanazawa Institute of Technology, Ryo Satoh, Kiyoshi Nomura

(2280-11 P) **Investigation of Electrorheological Properties of a Novel Polyaniline-Ignimbrite Composite Material** BETUL ERTEKIN, Nevsehir Haci Bektas Veli University, Hasim Yilmaz

(2280-12 P) **Analytical Evaluation of Utilization of Natural Chopped Cellulosic Fiber Waste as Reinforcing Filler for Rubber** FAHIMA M HELALY, National Research Centre

(2280-13 P) **Using a Tester to Accurately Predict Hang-Up Issues in Process Equipment** MAX GROOM, Particulate Systems, Kerry D Johanson

(2280-14 P) **Determination of Argon In Metals** SHEN XUEJING, CISRI, Wang Peng, Hu Shaocheng

(2280-15 P) **Optical Properties of Aluminum Nanoparticles Experimental Determination** ALEXANDER A ZVEKOV, Institution of Chemistry of Coal and Material Science, Boris P Aduev, Denis R Nurmukhametov, Andrey P Nikitin

POSTER SESSION **Session 2290**

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Trace Metals and Gasses by AA, ICPMS, ICAFS

Thursday Morning, Exposition Floor, Back of Aisles 1000-2500

(2290-1 P) **Arsenic Speciation in Chinese Medicine by Liquid Chromatography Hydride Generation-AFS** HONGBIN CAO, Beijing Normal University, Xiancai Zeng, Bin Chen, Warren T Corns, Peter B Stockwell

(2290-2 P) **Selenium Speciation in Flue Gas Desulfurization (FGD) Wastewater by Ion Chromatography Hydride Generation Atomic Fluorescence Spectrometry (IC-HG-AFS)** WARREN T CORNS, P S Analytical, Bin Chen, Peter B Stockwell

(2290-3 P) **Industrial Challenges for Calibration of Gas-phase Mercury Analyzers** MATTHEW A DEXTER, P S Analytical, Warren T Corns, Peter B Stockwell

(2290-4 P) **Mercury Release Rates from Dental Amalgam: Measurement and Sampling** MATTHEW A DEXTER, P S Analytical, Warren T Corns, Peter B Stockwell

(2290-5 P) **Isotope Ratio Analysis of 235U and 238U Nuclide Using a Microwave Digestion Associated with ICP-MS and the Soil Survey Related to Fukushima Daiichi Nuclear Disaster** MAKOTO FURUKAWA, PerkinElmer Japan Co., Ltd, Yutaka Kameo, Yoshitaka Takagai, Osamu Shikino, Tsugiko Takase

(2290-6 P) **An Improvement in Inorganic Arsenic Speciation Analysis Using Thioglycollic Acid Pre-Reductant for Selective Hydride Generation with Iridium Coated Tungsten Coil Electrothermal Atomization Atomic Absorption Spectrometry** NJAW NJIE, Middle East Technical University, Osman Y Ataman

(2290-7 P) **Stability, Linearity and Repeatability of Nitrogen Determination by Flash Combustion Using Argon as Carrier Gas** GUIDO GIAZZI, Thermo Fisher Scientific, Liliana Krotz

(2290-8 P) **Fast PDMS Quantitation Using ICP-OES** BARBARA PAVAN, Impact Analytical, Katherine Robertson

(2290-9 P) **Mercury Speciation in Canal Sediments by Liquid Chromatography Cold Vapour-AFS** MUSTAFA SHARIF ALI, Brunel University, Mark Scrimshaw, Bin Chen, Warren T Corns, Peter B Stockwell

(2290-10 P) **Preliminary Results for Metals Found in Venison from White-Tailed Deer from Northwestern Pennsylvania** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Matthew R Luderer, Andrew S Rubin, Kayla S Watson

(2290-11 P) **Determination of Arsenic Uptake by Palm Plants, Using Hydride Generation Atomic Absorption Spectrometry (HGAAS): Preliminary Results** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Marissa M Menanno

(2290-12 P) A **New Modular Approach to Automated Cold Vapour and Hydride Generation AFS for Mercury and Hydride Forming Elements** WARREN T CORNS, P S Analytical, Peter B Stockwell, Bin Chen

(2290-13 P) **Identification and Characterization of Heavy Metal of Baby Powder Using Laser Induced Breakdown Spectroscopy (LIBS)** HERVE SANGHAPI, Mississippi State University, Alfarraj Bader, Yueh Fang, Jagdish Singh

(2290-14 P) **A Fast and Accurate Method for Gold Determination in Geological Samples** IAN D BRINDLE, Brock University, Yong Wang

(2290-15 P) **CO2 TEA Laser-Enhanced Laser Ablation Molecular Isotopic Spectrometry (TELLAMIS)** STACI R BROWN, Florida A & M University, Charlemagne A Akpovo, Alan Ford, Kenley Herbert, Lewis Johnson

(2290-16 P) **Removal of Toxic Heavy Metal Ions in Aqueous Solution by Use of Molecular Micelle Modified Kaolin Clay Adsorbents** SAYO O FAKAYODE, North Carolina A&T State University, Joshua Watts, KaDeisa Hawkins, Breanna S Mitchell, Derrick Snipes, Richard Gray

(2290-17 P) **Laser-Induced Breakdown Spectroscopy of High-Pressure Carbonated Brine Solutions** CHRISTIAN GOUEGUEL, National Energy Technology Laboratory, Jagdish P Singh, Dustin McIntrye, Jinesh C Jain, Athanasios Karamalidis

(2290-18 P) **Assessment of Solid Standard Homogeniety by LIBS and X-Ray SEM** SCOTT M HOLDREN, School, David A Rusak

(2290-19 P) **Application of ICP-MS in Assessing the Abundance of Rare Earth Elements (REE) in Marcellus Shale Cores** JINESH C JAIN, URS Corporation, Clint W Noack, Alexandra Hakala, Harry Edenborn, Christina Lopano, Karl Schroeder, Robert Dilmore, Athanasios Karamalidis

(2290-20 P) **Spectrochemical Analysis of Molten Copper-Nickel-Iron Matte at 1100 °C Using Laser-Induced Breakdown Spectroscopy** ANDRÉ MOREAU, National Research Council of Canada, Mohamad Sabsabi

(2290-21 P) **Comparative Analysis of Metals in Hair and Fingernails Using ICP-MS** KRISTA M ULISSE, Westminster College, Helen M Boylan

(2290-22 P) **Lab Analysis of Barium and Strontium in Frackwater Coupled with Website Design Empowers Local Communities Amidst Hydraulic Fracturing in Western Pennsylvania** TYLER UMSTEAD, Westminster College, Helen M Boylan, Lance Jubic

(2290-23 P) **Genotoxic Effects of Nickel(II) Chloride on the GAPDH Gene in Arabidopsis Thaliana** ZACHARY L VANAERNUM, St. John Fisher College, Kimberly Chichester, Angela Amoia

(2290-24 P) **2D and 3D Elemental Imaging by Laser Ablation ICP-MS on Ancient Glass** VID S SELIH, National Institute of Chemistry Slovenia, Johannes T van Elteren, Martin Sala, Andrei Izmer, Frank Vanhaecke, Emilio F Orsega, Serena Panighello

(2290-25 P) **Image Analysis in Axalta Coating Systems' Automotive Applications** KARLIS ADAMSONS, Axalta

(2290-26 P) **Analysis of Major and Trace Elements in Phosphating Baths Using Radial Viewing ICP-OES Instrument with Total Plasma View Feature and Far UV Capability for Chlorine Analysis** HASSANALI SAVADKOUEI, Horiba Scientific, Matthieu Chausseau, Alice Stankova, Philippe Hunault

(2290-27P) **High Salt Content Samples Analysis Using Radial Viewing ICP-OES Instrument with Total Plasma View Feature** PHILIPPE HUNAULT, Horiba Scientific, Matthieu Chausseau, Alice Stankova, Hassanali Savadkouei

POSTER SESSION **Session 2300**

All posters are to be mounted by 10:00 AM and remain on display until 2:00 PM. Authors must be at their posters from 10:00 AM to 12:00 PM. Location of the morning posters is on the Exposition Floor, back of Aisles 1000-2500. PLEASE NOTE: You cannot get onto the Exposition Floor until after 9:00 AM.

Water Quality Parameters: Still Providing Important Information

Thursday Morning, Exposition Floor, Back of Aisles 1000-2500

(2300-1 P) **Seasonal Variations in Water Quality Parameters of Wetlands at Kheda District, Gujarat, India** AMRUTAL B PARMAR, J & J College of Science, Nadiad, Arunkumar H Dholakia, Mahesh Kumar B Chauhan

(2300-2 P) **Studies on Physico-Chemical Analysis of Bore Wells Drinking Water of Kheda District, Gujarat, India** MAHESH KUMAR B CHAUHAN, J & J College of Science, Nadiad, Dipak Kumar K Bhoi, Amrutal B Parmar

(2300-3 P) **Rapid Determination of Ultimate Biochemical Oxygen Demand (Ultimate BOD)** WILLIAM C LIPPS, Xylem/OI Analytical

(2300-4 P) **Analysis of TKN and Ammonia in NPDES Wastewater Samples by In-Line Gas Diffusion Colorimetry** LIBBY A BADGETT, Xylem/OI Analytical, William C Lipps, Gary Engelhart

(2300-5 P) **A Comparative Study of Selected Analytes in Diverse Natural Waters from Western New York and Western Pennsylvania** MARK THOMAS STAUFFER, University of Pittsburgh at Greensburg, Mary E Toland

(2300-6 P) **A Comparative Study of On-Line and Laboratory TOC Analyzers for Analysis of Municipal Wastewater** JOHN WELSH, OI Analytical, Gary Engelhart, Steve Skalski, William C Lipps

(2300-7 P) **A Study of a Novel Phosphate Selective Electrode Interference Pattern in Monitoring Dephosphorylation and Phosphorylation Reactions** MARTIN E ENEMCHUKWU, University of South Africa

PITTCON 2014 TECHNICAL PROGRAM

THURSDAY, MARCH 6, 2014
AFTERNOON

SYMPOSIUM **Session 2310**

Electroanalytical Chemistry on the Nanoscale - arranged by Michael V Mirkin, CUNY-Queens College

Thursday Afternoon, Room S401a

Michael V Mirkin, CUNY-Queens College, Presiding

1:30		**Introductory Remarks - Michael V Mirkin**
1:35	(2310-1)	**Electrochemical Characterization of Nanoparticles** ALLEN J BARD, University of Texas at Austin, Aliaksei Boika, Byungkwon Kim
2:10	(2310-2)	**Vesicular Release of Neurotransmitters: Converting Amperometric Measurements Into Size, Dynamics and Energetics of Initial and Final Fusion Pores** CHRISTIAN A AMATORE, ENS-CNRS-UPMC
2:45	(2310-3)	**Electrochemistry of Nanobubbles** HENRY S WHITE, University of Utah, Long Luo
3:20		**Recess**
3:35	(2310-4)	**Nanostructured Microfluidic Arrays for Protein Detection and Genotoxicity Screening** JAMES F RUSLING, University of Connecticut
4:10	(2310-5)	**Electrochemical Nanoprobes for Analysis and Mechanistic Studies** MICHAEL V MIRKIN, CUNY-Queens College

SYMPOSIUM **Session 2320**

Forensic Analysis in the Lab and Crime Scene

arranged by Igor K Lednev, University at Albany, SUNY

Thursday Afternoon, Room S401bc

Igor K Lednev, University at Albany, SUNY, Presiding

1:30		**Introductory Remarks - Igor K Lednev**
1:35	(2320-1)	**Development of New Extraction and Analysis Methods for the Rapid Detection of Characteristic Chemicals from Humans and Contraband Materials** KENNETH G FURTON, Florida International University, Norma Iris Caraballo, Lauren Colon, Adhly Huertas, Michelle Cerreta, Rodolfo Mesa, Abuzar Kabir
2:10	(2320-2)	**Versatile Analytical Strategies for Forensic Chemical Profiling of Explosives** ARIAN C VAN ASTEN, Netherlands Forensic Institute, Hanneke Brust, Mattijs Koeberg, Peter Schoenmakers, Antoine van der Heijden
2:45	(2320-3)	**Effects of Various Decontamination Regimes on DNA-Based Forensic Analysis Methods** JAMES MATTHEW ROBERTSON, Federal Bureau of Investigation
3:20		**Recess**
3:35	(2320-4)	**High Efficiency Sampling Using Capillary Microextraction of Volatiles (CMV) Coupled to Gas Chromatography – Mass Spectrometry (GC-MS)** JOSE R ALMIRALL, Florida International University, Wen Fan
4:10	(2320-5)	**Blood Detection by Infrared Imaging Using Latent Heat Thermography: Instrument Design and Performance** STEPHEN L MORGAN, University of South Carolina, Michael L Myrick, Wayne O'Brien, Nicholas D Boltin, Zhenyu Lu, Brianna M Cassidy, Stephanie A DeJong, Emory J Straub, Shi Hao , Raymond G Belliveau

SYMPOSIUM **Session 2330**

Novel Approaches in Quantitative Analysis of Biomarkers in Drug Discovery and Development

arranged by Guodong Chen, Bristol-Myers Squibb

Thursday Afternoon, Room S401d

Guodong Chen, Bristol-Myers Squibb, Presiding

1:30		**Introductory Remarks - Guodong Chen**
1:35	(2330-1)	**Metabolomics for Biomarker Discovery** MICHAEL D REILY, Bristol-Myers Squibb
2:10	(2330-2)	**Developing Mass Spectrometry-Based Quantitative Proteomics and Peptidomics Strategies for Biomarker Discovery in Neurodegenerative Diseases** LINGJUN LI, University of Wisconsin-Madison, Jingxin Wang, Robert Cunningham, Dustin Frost
2:45	(2330-3)	**Utility of Immunochemistry and LC/MS Technology for Quantification of Protein Biomarkers: Where Are We Now and Where Do We Go From Here?** GUODONG CHEN, Bristol-Myers Squibb
3:20		**Recess**
3:35	(2330-4)	**Rapid Development of Sensitive, High-Throughput, Quantitative and Highly Selective Mass Spectrometric Targeted Immunoassays for Clinically Important Proteins in Human Plasma and Serum** MARY F LOPEZ, Thermo Fisher BRIMS
4:10	(2330-5)	**Development a Sensitive LC/MS/MS Platform Based on Trizaic NanoTile Technique to Measure Low Abundance Endogenous Peptide Biomarkers in Plasma** MINGXIANG LIN, Merck & Co., Michael Lassman, Russel Weiner, Omar Laterza

SYMPOSIUM **Session 2340**

On-Farm Diagnostics for Improved Food Safety, Quality, and Production

arranged by Sam R Nugen, University of Massachusetts Amherst

Thursday Afternoon, Room S402a

Sam R Nugen, University of Massachusetts Amherst, Presiding

1:30		**Introductory Remarks - Sam R Nugen**
1:35	(2340-1)	**Produce Food Safety: From Farm to Product** AMANDA KINCHLA, University of Massachusetts Amherst
2:10	(2340-2)	**Paper-Microfluidic Bovine Estrus Test for Improving the Productivity of Smallholder Dairy Farmers in Resource-Constrained Settings** MATTHEW STEWART, Diagnostics For All, Patrick Beattie, Sahil Khullar
2:45	(2340-3)	**An On-Farm Device for the Detection of Generic Ecoli from Agricultural Water Sources** SAM R NUGEN, University of Massachusetts Amherst, Sam A Alcaine
3:20		**Recess**
3:35	(2340-4)	**Designing Handheld Resistance Based Biosensors Utilizing Conducting Nonwoven Fibers for In-Field Microbial Pathogen Detection** ANDRE SENECAL, US Army Natick Soldier Research, Development and Engineering Center, Kris Senecal, Patrick Marek, Shannon McGraw, Karen Gleason, Allie Grella, Amanda Hebert, Stephen Torosian
4:10		**Open Discussion**

SYMPOSIUM **Session 2350**

Thinking Outside the Laboratory: Innovative Outreach and Educational Approaches that Bring Analytical Chemistry to New Audiences

arranged by Bhavik A Patel, University of Brighton and Michelle Kovarik, Trinity College

Thursday Afternoon, Room S402b

Bhavik A Patel, University of Brighton, Presiding

1:30		**Introductory Remarks - Bhavik A Patel and Michelle Kovarik**
1:35	(2350-1)	**Bringing Instrumental Analysis into the K-12 Classroom: Service Learning Projects and Laboratory Coursework** MICHELLE KOVARIK, Trinity College
2:10	(2350-2)	**Microfluidics in the Middle School Classroom: Implementation, Content, and Instrumentation for Teachers and Students** LISA A HOLLAND, West Virginia University, Sharon Athey, Justin Dicks, Tyler Davis, Cassandra L Crihfield, Coltin Kolanko
2:45	(2350-3)	**Analytical Chemistry Students Perform Quality Assurance Tests for Local Microbrewery** JILL K ROBINSON, Indiana University
3:20		**Recess**
3:35	(2350-4)	**Collaboration at the Interface of Chemistry and Art Conservation: Surface-Enhanced Raman Studies of Pigments in Historic Oil Paintings** KRISTIN L WUSTHOLZ, College of William and Mary, Shelley A Svoboda
4:10	(2350-5)	**Can 'Gamification' Spice up the Analytical Chemistry Classroom?** BHAVIK A PATEL, University of Brighton

ORGANIZED CONTRIBUTED SESSIONS **Session 2360**

Advances in Sensor Technology for Food Safety and Food Quality

arranged by Betsy Jean Yakes, U.S. Food and Drug Administration

Thursday Afternoon, Room S405a

Betsy Jean Yakes, U.S. Food and Drug Administration, Presiding

1:30	(2360-1)	**Measurement of Trichothecene Mycotoxins in Wheat Using a Biolayer Interferometry-Based Biosensor** CHRIS MARAGOS, USDA-ARS
1:50	(2360-2)	**Multiplexed E.Coli Assay Panel** MICHAEL TSIONSKY, MSD, Guy R Calamunci, George Sigal, Seth B Harkins
2:10	(2360-3)	**Application of IR Chemical Imaging and DNA Microarrays to the Identification of Fish Species** MAGDI MICHEL MOSSOBA, FDA, Sara Handy, Vladimir Chizhikov, Stephen Paul, Betsy-Jean Yakes, Jonathan Deeds
2:30	(2360-4)	**Detection of Foodborne Pathogens at 100 cfu/g in 4 hours Using Surface-Enhanced Raman Spectroscopy** STUART FARQUHARSON, Real-Time Analyzers, Inc., Chetan Shende
2:50		**Recess**
3:05	(2360-5)	**Identification of Microorganisms by Raman Spectroscopy for the Development of New Biosensors in the Food Industry** GERALD THOUAND, University of Nantes, Ali Assaf, Emilie Faury, Christophe Cordella, Douglas Rutledge, Michele Lees
3:25	(2360-6)	**hlyA Gene-Based Sensitive Detection of Listeria Monocytogenes Using a Novel Cantilever Sensor** RAJ MUTHARASAN, Drexel University, Harsh Sharma
3:45	(2360-7)	**Battery-Free Radio Frequency Identification (RFID) Sensors for Food Quality and Safety** NANDINI NAGRAJ, GE Global Research, Radislav A Potyrailo
4:05	(2360-8)	**Food Safety and Chemometrics: Automation of Information Processing as a Support for Decision-Making** CHRISTOPHE CORDELLA, INRA, Ali Assaf, Gerald Thouand, Emilie Grange, Douglas Rutledge

ORGANIZED CONTRIBUTED SESSIONS **Session 2370**

Recent Advances in Ion Chromatography

arranged by Kannan Srinivasan, Thermo Fisher Scientific

Thursday Afternoon, Room S405b

Kannan Srinivasan, Thermo Fisher Scientific, Presiding

1:30	(2370-1)	**Simulating Chromatography and Wistful X-Ray Visions into a Column: How Far is Reality?** PURNENDU K DASGUPTA, University of Texas at Arlington, Brian N Stamos, Akinde F Kadjo
1:50	(2370-2)	**Recent Developments in Suppressor Technology for Ion Chromatography** KANNAN SRINIVASAN, Thermo Fisher Scientific, Rong Lin, Sheetal Bhardwaj, Christopher Pohl
2:10	(2370-3)	**Advances in Trace Analysis in Ion Chromatography** HERB WAGNER, CB&I
2:30	(2370-4)	**Trials, Tribulations and Triumphs of Small Particles in Ion Chromatography** MUHAMMAD FAROOQ WAHAB, University of Alberta, Christopher Pohl, Charles A Lucy
2:50		**Recess**
3:05	(2370-5)	**Recent Developments in Stationary Phases for Ion Chromatography** CHRISTOPHER POHL, Thermo Fisher Scientific
3:25	(2370-6)	**Characterizing the Mixed Cation Exchange-Reversed Phase Retention of Phosphorous Acid Coated Zirconia Columns** CHRISTOPHER R HARRISON, San Diego State University, Stephanie M Archibald
3:45	(2370-7)	**Application of Ion Chromatography in Flavor Science** ANDREAS DUNKEL, Technical University of Munich
4:05	(2370-8)	**Role of Ion Chromatography in Pharmaceuticals – Assay and Impurities** SHREEKANT KARMARKAR, Baxter Healthcare

ORAL SESSIONS **Session 2380**

Microfluidics: Novel Approaches

Thursday Afternoon, Room S404a

Nathan Chaffin, Bayer MaterialScience LLC, Presiding

1:30	(2380-1)	**Optofluidic Device with SERS Active Three Dimensional Gold Nanostructure** TAKAO FUKUOKA, University of Hyogo/Archilys, Ryo Takahashi, Yuichi Utsumi, Akinobu Yamaguchi
1:50	(2380-2)	**Microfluidic Sample Preparation for Liquid Characterization by XRF** KATHRYN G MCINTOSH, Los Alamos National Lab, George J Havrilla, Eli J Berg
2:10	(2380-3)	**Droplet-Based Microfluidic Sample Preparation for Mass Spectrometric Analysis of Single Cells** RYAN T KELLY, Pacific Northwest National Laboratory, Sheen M Allison, Sarah J Rausch
2:30	(2380-4)	**Flow Injection Analysis in Bare-Narrow-Capillary Hydrodynamic Chromatography for High-Throughput DNA Analysis at Single Molecule Level in Free Solutions** ZAIFANG ZHU, University of Oklahoma, Huang Chen, Shaorong Liu
2:50		**Recess**
3:05	(2380-5)	**Detection of Neurotransmitters by Fast-Scan Cyclic Voltammetry in Microfluidic Flow Cells** MIMI SHIN, University of Kansas, Michael A Johnson, Meng Sun
3:25	(2380-6)	**High Aspect Ratio Pillar Arrays as Chip Platforms for Separations and Surface Spectroscopy** MICHAEL SEPANIAK, University of Tennessee, Nickolay Lavrik, Kirchner Teresa , Jennifer Charlton
3:45	(2380-7)	**Biofouling and Protein Adsorption in Nanofluidic Devices** WILLIAM R WICHERT, University of Notre Dame
4:05	(2380-8)	**Microfluidic Devices in Calcium Fluoride Substrates for Achieving Real-Time Infrared Spectroscopic Monitoring** SCOTT D NOBLITT, Colorado State University, Brynson J Lehmkuhl, Amber T Krummel, Charles S Henry

ORAL SESSIONS **Session 2390**

Voltammetry

Thursday Afternoon, Room S404bc

Melissa C Rhoten, Longwood University, Presiding

1:30	(2390-1)	**Potentiometric Scanning Ion Conductance Microscopy** YI ZHOU, Indiana University, Anna E Weber, Lushan Zhou, Lane A Baker, Jianghui Hou
1:50	(2390-2)	**Real–Time Cu2+ Voltammetry on Carbon Fiber Microelectrodes** PAVITHRA PATHIRATHNA, Wayne State University, Srimal A Samaranayake, Kate I Parent, Christopher W Atcherley, Michael L Heien, Parastoo Hashemi
2:10	(2390-3)	**Bridging the Gap Between Molecular Electrochemistry and Electrocatalysis: Interplay Between Solution and Surface Steps in Benzyl Chloride Reduction at Silver Cathodes** OLEKSIY V KLYMENKO, ENS-CNRS-UPMC, Olivier Buriez, Eric Labbe, Dong-Ping Zhan, Sandra Rondinini, Zhong-Qun Tian, Irina Svir, Christian A Amatore
2:30	(2390-4)	**Electrochemically Prepared Ionic Liquids for Solid Phase Microextraction** JOSHUA YOUNG, University of Toledo, Jon Kirchhoff, Jared L Anderson
2:50		**Recess**
3:05	(2390-5)	**Utilization of Polycrystalline Boron Doped Diamond for Pulsed High Temperature Electrochemistry** MARK E NEWTON, University of Warwick, James G Iacobini, Julie V Macpherson, Tim Mollart
3:25	(2390-6)	**Extra High Energy of Formation of Dianions Observed by Salt-Free Microelectrode Voltammetry** KOICHI JEREMIAH AOKI, University of Fukui
3:45	(2390-7)	**Comparative Electrochemical Study of PANI/PSS and PANI-5%MWNT/PSS Films Obtained by Layer-by-Layer (LBL) Deposition onto ITO Substrates** FÁBIO R SIMÕES, UNIFESP, Tiago Rosa, Lucia Codognoto, Luanna Parreira, Mauro dos Santos
4:05	(2390-8)	**Comparison of Heterogeneous Reaction Rate Constants by Steady-State Microelectrode Techniques with Those by Fast Scan Voltammetry** JINGYUAN CHEN, University of Fukui, Aoki Koichi, Chaofu Zhang

NOTES

PITTCON 2014 EXHIBITOR SEMINAR LISTING

PITTCON 2014 EXPOSITION HOURS

MONDAY, MARCH 3, 2014 ..... 9:00 am – 5:00 pm
TUESDAY, MARCH 4, 2014 ..... 9:00 am – 5:00 pm
WEDNESDAY, MARCH 5, 2014 ..... 9:00 am – 5:00 pm
THURSDAY, MARCH 6, 2014 ..... 9:00 am – 3:00 pm

EXHIBITOR SEMINAR LISTING

This listing has been compiled from information provided by the exhibitors well in advance of the Conference. Last minute changes are possible. Some of the presentations and consultations require a prior invitation or appointment.

Please contact the exhibiting company at their regular booth for the date, time and topic of any exhibitor seminar you wish to attend.

EXHIBITOR NAME	ROOM #	DESCRIPTION
AB SCIEX	**SR31**	**Monday, March 3 – Wednesday, March 5, 2014** Attend our free daily Luncheon Workshops on Mass Spectrometry and Liquid Chromatography Monday-Wednesday. Learn about brand new innovations that push the limits of your research and boost your productivity in Food Testing, Omics, Biologics, and the fundamentals of LC/MS/MS. Explore what these new systems can do for your lab! For details on times and topics, visit AB SCIEX at Booth #4451
Elementar America, Inc.	**SR30**	**Stop by Elementar America's booth #4548 to sign in for all seminars.** **Monday, March 3, 2014** 10:00 a.m. – 10:30 a.m. Dominik Margraf,PhD, Product Manager Elemental Analysis **Analyzing for TOC in tough samples** Seawater, leachates and brines-oh my! No need to fear that salty and mucky samples are going to gum up your TOC analyzer. Come get your hands on the Vario TOC Cube Analyzer and see how we handle these and other difficult samples. 11:00 a.m. – 11:30 a.m. Dominik Margraf,PhD, Product Manager Elemental Analysis **Fast trace sulfur analysis without coking** Four minute analysis time for gasoline, diesel, LPG, biomass and kerosene and really, no coking after thousands of injections. Check out the Trace S Cube analyzer, talk to our Applications Specialist, pull out the oven and take a good look inside. 1:00 p.m. – 1:30 p.m. Dominik Margraf,PhD, Product Manager Elemental Analysis **You don't have to be stuck with helium** Got helium sticker shock? Think helium is the only gas you can use for CHNS analysis? Find out your options for alternate carrier gases with elementar cube analyzers. 2:00 p.m. – 2:30 p.m. Art Kasson, PhD, IRMS Product Manager **New isotope mass spectrometers for natural resource exploration** Exploration for minerals just got a bit easier with the new GeoVisION stable isotope mass spectrometer. If you're interested in oxygen/hydrogen isotopes to understand the evolution of hydrological cycles, sulfur isotopes to infer redox state of formations or carbon isotopes to determine fluid-mineral equilibrium, you can spend less time with the sample analysis and more time with the results Never before has isotope ratio mass spectrometry (IRMS) been so simple than with VisION. For the first time this exceptional instrument provides a level of usability which exposes the power of IRMS to new and inexperienced users, while experienced scientists will consider VisION a revolution in IRMS technology. Come see what's new!

PITTCON 2014 EXHIBITOR SEMINAR LISTING

EXHIBITOR NAME ROOM # DESCRIPTION

Tuesday, March 4, 2014

9:00 a.m. – 12:00 p.m.
Tyson Rowland, Applications Center Manager

Hands On Training rapid N Cube Analyzer

Trouble-shooting, leak checks, oxygen optimization-here's how to get more out of your rapid N Cube. Do you remember how to maintain the ball valve? Check for blockages? Run statistics on your data? Let us help you refresh and relearn. Seminar limited to 6 people.

1:30 p.m. – 2:30 p.m.
Art Kasson, PhD, IRMS Product Manager

Hands- On Training IonVantage and Vario Cube Software

Get the most out of your Isoprime IRMS and EA analyzer with this practical session on software capabilities. Learn tricks and shortcuts and explore the full range of what the software can do. Seminar limited to 10 people.

Wednesday, March 5, 2014

10:00 a.m. – 10:30 a.m.
Dominik Margraf, PhD Product Manager Elemental Analysis

Analyzing for TOC in tough samples

Seawater, leachates and brines-oh my! No need to fear that salty and mucky samples are going to gum up your TOC analyzer. Come get your hands on the Vario TOC Cube Analyzer and see how we handle these and other difficult samples.

11:00 a.m. – 11:30 a.m.
Dominik Margraf, PhD Product Manager Elemental Analysis

Fast trace sulfur analysis without coking

Four minute analysis time for gasoline, diesel, LPG, biomass and kerosene and really, no coking after thousands of injections. Check out the Trace S Cube analyzer, talk to our Applications Specialist, pull out the oven and take a good look inside.

1:00 p.m. – 1:30 p.m.
Dominik Margraf, PhD Product Manager Elemental Analysis

You don't have to be stuck with helium

Got helium sticker shock? Think helium is the only gas you can use for CHNS analysis? Find out your options for alternate carrier gases with elementar cube analyzers.

2:00 p.m. – 2:30 p.m.
Art Kasson, PhD, IRMS Product Manager

New isotope mass spectrometers for natural resource exploration

Exploration for minerals just got a bit easier with the new GeoVisION stable isotope mass spectrometer. If you're interested in oxygen/hydrogen isotopes to understand the evolution of hydrological cycles, sulfur isotopes to infer redox state of formations or carbon isotopes to determine fluid-mineral equilibrium, you can spend less time with the sample analysis and more time with the results. Never before has isotope ratio mass spectrometry (IRMS) been so simple than with VisION. For the first time this exceptional instrument provides a level of usability which exposes the power of IRMS to new and inexperienced users, while experienced scientists will consider VisION a revolution in IRMS technology. Come see what's new!

EXHIBITOR NAME	ROOM #	DESCRIPTION
Thermo Scientific	**SR10**	**STOP BY BOOTH 2441 TO SIGN IN FOR ALL SEMINARS**

Monday, March 3, 2014

10:00 a.m.

Rise Above the Risk. Don't let the Helium Crisis Shut Your Lab Down or Drive Your Costs

The global helium shortage, with frequent helium price increase, rationing and delayed deliveries causes difficulties in GC GC/MS labs production and uncertainties in productive uptime; for this reason, many laboratories started re-assessing their consumption patterns of this non-renewable gas. A new, innovative approach to the conservation of helium, called Helium Saver injector, is now available. It allows maintaining helium as a carrier on the GC column while using nitrogen for all the other required pathways. The helium tank lifetime is increased from a few weeks to several years, without any method developments or capital investments for new gas lines or hydrogen generators.

11:00 a.m.

Advantages of the picoSpin 80 NMR Spectrometer in Pharmaceutical Research & Development

High-resolution high-quality NMR Spectroscopy on the bench is now an affordable reality. For the Pharmaceutical researcher this offers the convenience of 1H or 19F structure verification and reaction monitoring in the laboratory, in the fume-hood, or next to the pilot plant. This seminar will outline various familiar scenarios and common workflows that show how time- and cost-effective a Thermo Scientific™ picoSpin™ bench-top NMR spectrometer can be when inserted into a laboratory that values productivity without compromising on quality of results.

12:00 p.m.

New VersaCool Recirculating Refrigerated/Heated Bath Circulator

Utilizing the Communication & Control features of the VersaCool (SmartLab) ensures all of your samples/applications are being properly maintained. This is achieved by monitoring the temperature feeding into the Bio-Reactor (BioTech/BioPharm) or the Condensers (Chem/PetroChem). Temperature Ramping Programs can be loaded into the VersaCool and the user can monitor/receive notifications through their BlueTooth enabled Mobile Device or connect to an existing SmartVue enabled lab, and have operational control of VersaCool from a remote location over our NesCom software.

1:00 p.m.

Analysis of Flowback Water from Marcellus Unconventional Gas Extraction using IC and ICP-OES

Samples of Marcellus Shale flowback have been analyized using IC, ICP-OES and ICP-MS and have generated comparable data sets. Although not as sensitive as ICP-MS and requiring a larger volume of sample, OES has several advantages; most samples did not require dilution, it is not as sensitive to chloride interference, and requires less sample preparation and run time. Thus OES appears to offer an alternative to ICP-MS for elemental analysis of flowback and produced water, and monitoring well water quality.

2:00 p.m.

Co-Sourcing Lab Services – Maximizing Service Partners in a Lab Environment

Does the thought of outsourcing lab services make you feel uncomfortable? Find out how companies like yours have overcome the fear of outsourcing through leveraging a co-sourcing service model. These hybrid programs allow laboratories to maximize internal resources, deliver streamlined results, enhance efficiency, and lower total operating costs.

Tuesday, March 4, 2014

10:00 a.m.

Analysis of Sulfites and Sugars in Wine with Discrete Analyzer Technology

Measurement of components such as sugars, organic acids, and sulfites can be critical to food quality control and safety since they can indicate spoilage or undesirable flavors, or adulteration in the authenticity of ingredients. For labs performing a high volume of tests, automation improves productivity and increases consistency, thereby reducing costs. Discrete analyzers permit simultaneous measurement of several different tests from the same sample, without the need for time consuming method changeover. Thermo Scientific™ discrete photometric analyzers are automated, user-friendly platforms with ready-to-use reagents that provide fully automated analysis for a wide range of food and beverage quality control tests.

11:00 a.m.

X-ray Analysis in Petrochemical Industry: Challenges and Solutions

XRF is a well established technique, among other elemental analysis tools, in petrochemical industry (refineries and central laboratories) for automotive fuels, lubricants, residual oils, catalysts, polymers and related materials. With increasingly tighter regulations on specific elements such as S and Pb, the demand for more sensitive yet cost effective X-ray instruments has increased in the recent years. Combining technological advances with dedicated analytical techniques, the true multi-element, multi-matrix analytical capability of XRF can be exploited to cover a variety of oil matrices and elements. This seminar will introduce the XRF technique and the full suite of analytical calibrations which address the needs of petrochemical industry.

PITTCON 2014 EXHIBITOR SEMINAR LISTING

EXHIBITOR NAME	ROOM #	DESCRIPTION
Thermo Scientific	**SR10**	12:00 p.m.

Recent Advances in Mass Spectrometry - Introducing the Unique Orbitrap Fusion and Quantiva Triple Quadrupole Mass Spectrometers

State-of-the-art performance in leading MS labs is being driven rapidly forward by new technology. Impressive advances in Qualitative and Quantitative performance will be shown for two entirely new and revolutionary platforms: the Orbitrap Fusion tribrid mass spectrometer for the ultimate in speed, sensitivity, mass accuracy and resolution for comprehensive sample characterization and the TSQ Quantiva triple quadrupole mass spectrometer for extreme speed, sensitivity and robustness for ultra-trace level quantitative analyses. A hardware/software overview and many application examples will be shared.

1:00 p.m.

Novel QCell Technology for Inference Removal in ICP-MS - Combining Low Mass Filtration with Kinetic Energy Discrimination

Polyatomic interferences are one of the fundamental challenges in ICP-MS. They can be suppressed using a collision/reaction cell with a neutral gas like Helium combined with Kinetic Energy Discrimination or with a reactive gas like Hydrogen or Ammonia. The iCAP Q ICP-MS features the new QCell which combines KED with mass filtration of interference precursors. The QCell uses an innovative flatopole design that not only utilizes KED with low mass cutoff but also achieves best in class sensitivity and lowest background in a simple, automated process. The QCell will be described along with data from environmental, industrial & food safety applications.

2:00 p.m.

Innovations in Automated Sample Preparation

This talk will discuss the use of the AutoTrace 280 for the development of offline solid phase extraction and the use of novel analytical methods for trace analysis of organic microcontaminants in wastewaters. We will discuss how optimized sample preparation coupled with high performance analytical techniques are used to detect, identify, and quantify emerging contaminants (including endocrine disruptors, pharmaceuticals, and surfactants) in wastewater and drinking water. A detailed investigation of trace level targeted and non-targeted contaminants and how they are transported and transformed within aquatic ecosystems will also be presented.

Wednesday, March 5, 2014

10:00 a.m.

Expanding Your HPLC and UHPLC Capabilities with Universal Detection-Shedding Light on Non-Chromophore Compounds

UV/Visible absorbance detection is used for the majority of routine HPLC analyses, but only a minority of potential analytes can be detected by this technique. Analytes not well detected by UV/Vis include surfactants, lipids, amines, alcohols, carbohydrates and inorganic ions. In contrast, the charged aerosol detector provides simple, sensitive, direct detection of all nonvolatile analytes, even those without a chromophore. Attend this seminar if you want to develop HPLC methods that allow you to see what UV/Vis detection is missing. This seminar will also compare and contrast the analytical performance of charged aerosol and light scattering detection.

11:00 a.m.

Rethinking Raman Imaging: Simplifying Your Analysis Workflow

Raman spectroscopy is a workhorse analytical tool, providing rich chemical and structural detail for applications from pharmaceuticals to geology to advanced materials. Widescale adoption of Raman requires intuitive operation accessible to all users, regardless of expertise. We present a completely new approach that focuses on getting answers from your images, not the technique with the new Thermo Scientific™ DXR™xi Raman imaging microscope. Learn how our image-centric platform and intelligent workflow solves your most demanding research and development challenges. Examples will include polymorph identification in whole solid dosage forms and monolayer graphene defect analysis.

12:00 p.m.

Filtration, Automated Dilution and Matrix Elimination in High Brine Samples using Ion Chromatography

High brine samples present an analytical challenge due to high particulate levels and elevated salt concentrations, which can prevent accurate quantification by overloading the ion-exchange column, decreasing the separation of peaks, and hiding low concentration peaks of interest. This seminar will discuss several strategies that overcome this challenge, including In-line filtration to remove particulates, automated sample dilution to prevent column overload, and matrix elimination using two-dimensional ion chromatography to facilitate analysis of ions present at disparate concentrations.

EXHIBITOR NAME ROOM # DESCRIPTION

1:00 p.m.

So, How Fast is Your LC/MS Analysis?

Increased sample throughput is an important goal for almost all labs. Ultra-fast methods can save time & solvents and reduce the need for new instruments. Unfortunately, these savings often come at the expense of data quality or reliability, e.g. fast run times, but no chromatography. Is it possible to achieve ultra-fast run times with ultra high pressure chromatographic separations? Can these methods be robust enough for high throughput environments? We present examples of ultra-fast UHPLC/MS analyses, in under 20 seconds per sample, including on-line extraction followed by fast chromatography or just fast chromatography. Both clinical and pharmaceutical applications will be shared.

2:00 p.m.

Pharmaceutical Analysis of API and Counter Ions in Complex Formulations in a Single Injection

According to the FDA, more than 50% of all pharmaceutical active substances (API's) are administered as salts. Roughly one quarter of these salts are formed from acidic molecules and approximately 3 quarters are formed from basic molecules. These counterions represent very diverse chemical entities ranging from inorganic to organic acids and bases. In addition, it is often desirable that the API be simultaneously measured. By employing HPLC with dedicated trimodal columns in combination with charged aerosol detection and intelligent software permits the analysis of pharmaceutical formulations consisting of acidic, basic and neutral molecules in a single chromatographic run.

Thursday, March 6, 2014

10:00 a.m.

Trace Element Speciation using IC-ICP-MS—Complete Inorganic Elemental Analysis Solutions

Speciation analysis provides information on the chemical form of elements of interest. Determining total element concentrations and their species is critical in food, environmental and pharmaceutical investigations. It allows us to understand the potentially toxic nature of elements such as inorganic arsenic, methyl-mercury and chromium VI. This presentation will cover the fundamentals of speciation analysis and shall elucidate the advantages of combining Ion Chromatography and ICP-MS technologies. We shall offer practical advice for instrument set up, discuss regulatory legislations that include species analysis and present real world application data where IC-ICP-MS is adding value.

11:00 a.m.

Inorganic Anion Analysis in Wastewater using Discrete Analyzers

Knowing the composition of industrial wastewater is critical to compliance with strict disposal regulations. The analytes typically measured include chloride, nitrite, sulfate, and phosphate, all of which have well-established EPA methods. In high-throughput settings, automation can reduce costs and improve consistency of many routine analyses. Discrete analyzers allow simultaneous measurement of several different tests from the same sample, without the need for method changeover or concern about sample carryover. Thermo Scientific™ discrete photometric analyzers are automated, user-friendly platforms with ready-to-use reagents that provide fully automated analysis for a wide range of compounds monitored in industrial wastewater.

12:00 p.m.

Choosing the Optimum Pesticide GC Workflow

Pesticide analyses in food and environmental matrices is one of the most common yet more complex analyses run by gas chromatography. Different approaches can be taken, using selective conventional detectors like ECD and NPD, the "golden standard" single quadrupole GC/MS or the fast growing triple quadrupole GCMSMS. During this seminar we will review the benefits and limitations of each of these techniques for pesticide screening and confirmation and guide users through the selection of the most appropriate tools, from sample preparation to data reporting, to make this analysis easier and more efficient.

PITTCON 2014 EXHIBITOR SEMINAR LISTING

EXHIBITOR NAME	ROOM #	DESCRIPTION
Tosoh Biosciences	**SR05**	**Attend our workshops Monday, Tuesday, and Wednesday afternoon to learn about the newest innovations from Tosoh Bioscience in preparative and analytical HPLC and GPC. For more details on any of these talks, visit the Tosoh booth #2608.** **All times below reflect the schedule for Monday, March 3, Tuesday March 4, and Wednesday, March 5, 2014.** 1:00 p.m. **Monoclonal Antibody Purification with High Capacity Protein A Resins: What is the Benefit?** Chris Manzari, Process Marketing Manager, Tosoh Bioscience 1:30 p.m. **Scaling-Up from Bench to Process Scale With Pre-Packed Chromatography Columns** Steve Tingley, Vice President, BioProcessing Sales & Marketing, Repligen 2:00 p.m. **Aggregates in Monoclonal Antibody Manufacturing Processes – a brief review of separation by analytical and large scale chromatography** Atis Chakrabarti, Ph.D., Manager, Technical Service, Tosoh Bioscience 2:30 p.m. **Troubleshooting, Column Lifetime Tips and Tricks** Justin Steve, Technical Service Specialist, Tosoh Bioscience 3:00 p.m. **The Multiple Utilities of Gel Permeation Chromatography for Polymer Analysis** Amandaa Brewer, Ph.D., GPC Sales Support Lead, Tosoh Bioscience 3:30 p.m. **High Temperature Gel Permeation Chromatography using Refractive Index Detection** Ilir Koliqi, Laboratory Products Manage, Tosoh Bioscience 4:00 p.m. **High Resolution Heterogeneity Analysis of Therapeutic Antibodies by HPLC** Atis Chakrabarti, Ph.D., Manager, Technical Service, Tosoh Bioscience

EXHIBITOR NAME	ROOM #	DESCRIPTION
Waters Corporation	**SR34 & Booth 3648**	**Our educational seminars are designed for chemists and lab managers who are eager to learn about the latest technologies and data management tools. These seminars will provide application-specific techniques and industry-related information to help you be successful.**

Monday, March 3, 2014

10:00 a.m. – 10:45 a.m.

Theory and Practice of Ultra Performance LC Technology

What is Ultra Performance LC? Is it based on real science or is it marketing hype? In this seminar, you will learn about the chromatographic theory and principles behind UPLC technology and discover how the predicted speed, sensitivity and resolution benefits are actually achieved.

11:00 a.m. – 11:45 a.m.

Manipulation of Chromatographic Formats to Improve Sensitivity for MS Applications

One of the most challenging goals facing modern bioanalytical (DMPK) laboratories is developing LC/MS/MS assays with the required level of sensitivity. In this seminar we will demonstrate how LC system improvements can provide higher sensitivity and lower limits of detection in challenging bioanalytical assays.

12:00 p.m. – 12:45 p.m.

A Novel Software Approach to Improving Sample Management Laboratory Efficiency

The management of samples and results is an ongoing challenge for laboratories faced with continuously increasing analysis requests, a need for more rapid turnaround times, and legacy paper based processes. This seminar will describe a unique approach to sample management that combines SDMS, ELN, stability testing and sample submission capabilities to improve laboratory efficiency and accelerate decision making.

1:00 p.m. – 1:45 p.m.

Improving UPLC Performance for the Routine Analysis of Drug Final Formulations

In this very practical seminar we will describe how UPLC technology can best be utilized in laboratories that follow chromatographic methods found in compendial monographs. We provide examples of drug final formulations assays taken from the USP-NF that were successfully transferred to UPLC along with routine analysis studies where the long-term robustness of the UPLC methods was evaluated.

2:00 p.m. – 2:45 p.m.

Benefits and Applications of Advanced Polymer Chromatography - The Next Generation of SEC/GPC Analysis

As polymeric materials become more complex, GPC/SEC struggles to provide the resolution required to uncover the details of their molecular weight distribution. In this seminar you will learn how advanced polymer chromatography (APC) dramatically improves the resolution of these separations across a wide range of polymers.

3:00 p.m. – 3:45 p.m.

Advances in Chiral Compound Separations using UltraPerformance Convergence Chromatography (ACQUITY UPC^2)

This informative seminar will discuss the benefits of using of UPC2, which is built on the principles of supercritical fluid chromatography (SFC), for the separation of chiral compounds in a variety of application areas including bioanalysis, synthetic chemistry, agrochemicals, and natural products.

4:00 p.m. – 4:45 p.m.

Ultimate Efficiency Unleashed: An UltraPerformance LC Column Technology for Maximizing Resolution and Throughput

Separation scientists continue to search for new ways to improve efficiency in the quest for higher resolution and increased sensitivity. In this presentation we separate fact from fiction and accurately describe the science behind higher efficiencies and the impact of combining optimized particle substrate design with state-of-the-art column packing technology.

PITTCON 2014 EXHIBITOR SEMINAR LISTING

EXHIBITOR NAME ROOM # DESCRIPTION

Tuesday, March 4, 2014

9:30 a.m. – 10:15 a.m.

Never Re-Develop a Method Again! Practical Tips for Robust LC Methods

LC method development can be a time-consuming, costly, and complicated process. Very often, there is little time to comprehensively develop methods and fully evaluate method robustness. Presented here is an efficient yet thoughtful approach to LC method development that yields a reliable method that will never need to be re-developed!

10:30 a.m. – 11:15 a.m.

Bringing the Power and Selectivity of Intuitive Mass Detection into Food Analysis

To improve the selectivity and reduce limits of quantification, mass detection is desirable in the analysis of food. In order to offer laboratories the opportunity to capture the benefits of mass detection without the challenges, we present several analytical food methods using mass detection with the ACQUITY QDa Detector.

11:30 a.m. – 12:15 p.m.

Manipulation of Chromatographic Formats to Improve Sensitivity for MS Applications

One of the most challenging goals facing many laboratories developing LC/MS/MS assays is reaching the required level of sensitivity. In this seminar we will demonstrate how integration of the LC separation into the mass spectrometer through novel micro fluidic technology can provide higher sensitivity, lower limits of detection in challenging assays, reduce solvent consumption and can enable anyone in the lab to perform high sensitivity LCMS.

12:30 p.m. – 1:15 p.m.

Theory and Practice of Ultra Performance LC Technology

What is Ultra Performance LC? Is it based on real science or is it marketing hype? In this seminar, you will learn about the chromatographic theory and principles behind UPLC technology and discover how the predicted speed, sensitivity and resolution benefits are actually achieved.

1:30 p.m. – 2:15 p.m.

Techniques for Maximizing ACQUITY UPLC System Performance

This very practical seminar will cover tips and techniques to use with Ultra Performance LC (UPLC). General good practices will be discussed. In addition, you will learn how to quickly identify and correct commonly encountered problems in order to maximize UPLC system throughput and performance.

2:30 p.m. – 3:15 p.m.

Principles of SPE: Introduction to Solid Phase Extraction – How to Solve Sample Preparation Problems

In this seminar we will provide you with a strong background on the fundamentals of SPE. These principles will serve as guides for implementing powerful SPE processing strategies that can be used to tackle difficult sample preparation problems in your laboratory.

3:30 p.m. – 4:15 p.m.

Principles of SPE: Troubleshooting Techniques to Maximize Productivity in the Chromatographic Laboratory

This seminar is designed for separation scientists with some experience with SPE and SPE method development. The discussion will especially benefit those who need to improve existing methods or create new, more robust methods in order to maximize laboratory productivity.

Wednesday, March 5, 2014

9:30 a.m. – 10:15 a.m.

Advances in Chiral Compound Separations using UltraPerformance Convergence Chromatography (ACQUITY UPC^2)

This informative seminar will discuss the benefits of using of UPC2, which is built on the principles of supercritical fluid chromatography (SFC), for the separation of chiral compounds in a variety of application areas including bioanalysis, synthetic chemistry, agrochemicals, and natural products.

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EXHIBITOR NAME	ROOM #	DESCRIPTION

11:30 a.m. – 12:15 p.m.

Benchmarking and Troubleshooting LC System Performance

Regardless of industry, chromatographic system performance and data reliability are of the utmost importance. This seminar will showcase the benefits of using reference standards on a regular basis which include reducing system downtime, preventing erroneous data collection, and improving laboratory productivity.

12:30 p.m. – 1:15 p.m.

Benefits and Applications of Advanced Polymer Chromatography - The Next Generation of SEC/GPC Analysis

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1:30 p.m. – 2:15 p.m.

Techniques and Strategies for Transferring Methods Between HPLC and UPLC

This seminar will discuss strategies and tools for the successful transfer of chromatographic methods between HPLC and UPLC. We will demonstrate how fully-scalable columns and an easy-to-use method-transfer calculator help you take full advantage of the speed and resolution benefits of UPLC.

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PITTCON 2014 EXHIBITORS

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PITTCON 2015 TECHNICAL PROGRAM

Plans for the Pittcon 2015 Technical Program have already begun. As chair of the 2015 Program Committee, I invite you to start planning now for next year's conference in New Orleans. We are currently accepting proposals for Symposia, Workshops, and Organized Contributed Sessions. All submissions are to be submitted electronically at www.pittcon.org by selecting "2015 Proposal Suggestions" under the Technical Program tab.

In addition, during Conference week in Chicago, I will be available Monday through Thursday 10:00 -11:00 AM and/or 1:30-2:30 PM in the Program Office (Room S403b) to discuss your ideas. Please feel free to stop in.

The timeline for review of the submitted proposals is rather tight, so in order for the organizers to have enough time to arrange the sessions, the Program Committee will review all suggestions in late April 2014. Therefore, the deadline for proposal submission will be April 11, 2014 – please note the deadline – it's not far away!

Proposals for symposia are being sought in all areas of analytical chemistry and applied spectroscopy. In addition to the classical analytical and spectroscopic topics, areas such as bioanalytical chemistry, nanotechnology, environmental analysis, food analysis, forensics, pharmaceutical analysis, and life science technologies in genomics, proteomics, metabolomics, bioinformatics, high throughput screening, and drug discovery, as well as chemical applications on art objects, energy research and education are also solicited.

In 2015, there will be a continued emphasis on program quality, particularly in the area of poster presentations, and there will be fewer oral contributed sessions. We have been working for the past several years to make the whole program experience-the Technical Program, Short Courses, and Conferee Networking-as streamlined as possible in order to give conferees their best educational and networking experience. Suggestions are always welcome; drop us a line if there is a way we can better serve you as a conferee.

The general Call for Papers will be sent out in June, and the deadline for contributed oral and poster abstracts will be in mid-August. As always, abstracts must be submitted electronically via the Pittcon website in order to be considered for the 2015 Technical Program. Please feel free to contact the Program Committee if you have any comments or questions about the 2015 Technical Program. We can be reached by e-mail at program@pittcon.org; or by telephone at (800) 825-3221 or (412) 825-3220, Ext.219.

Thank you in advance for your suggestions and contributions to Pittcon 2015.

Hub MacDonald, Ph.D.
Pittcon 2015 Program Chair

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