

JULY 10-12, 2019 • HYATT REGENCY BALTIMORE INNER HARBOR • BALTIMORE, MD, USA



ISPPP 2019

**39th International Symposium
and Exhibit on the Separation,
Purification, and Characterization of
Biologically Important Molecules**

FINAL PROGRAM

- ▶ **CO-CHAIRS**
Dr. Barry Boyes
Advanced Materials Technology

Prof. Ron Orlando
University of Georgia
- ▶ **SYMPOSIUM/EXHIBIT MANAGER**
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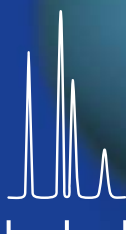
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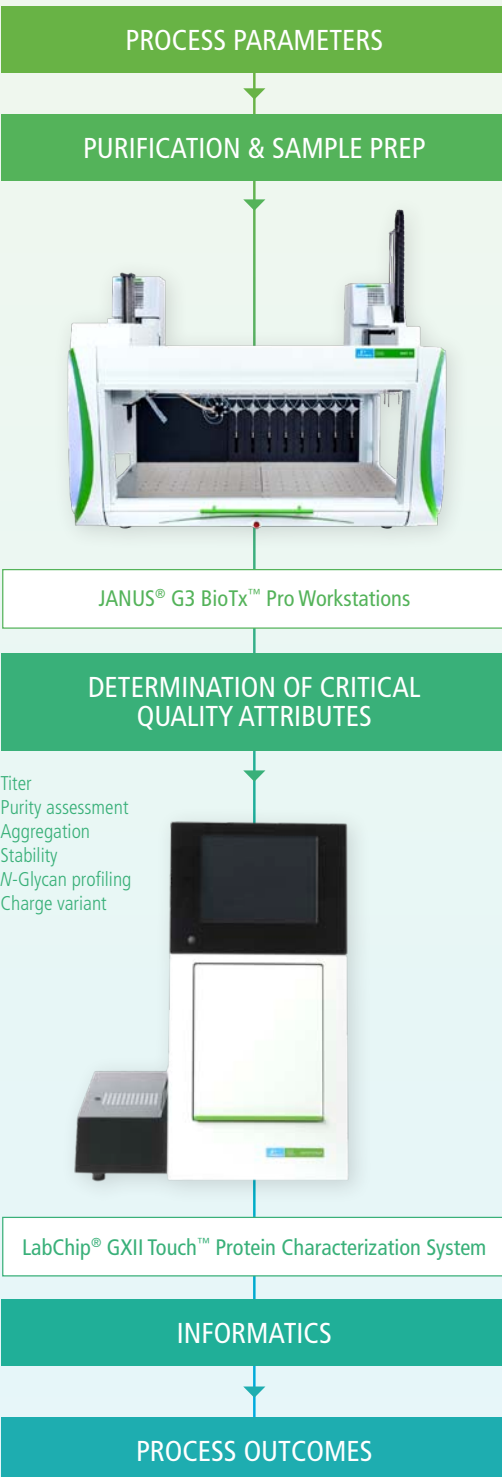


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the Separation, Purification, and Characterization
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ISPPP 2019 FINAL PROGRAM

ISPPP 2019 Co-chairs

Barry E. Boyes, Ph.D., Advanced Materials Technology, Inc., Wilmington, DE (USA)

Ron Orlando, Ph.D., University of Georgia, Athens, GA (USA)

ISPPP 2019 Conference Committee

Barry E. Boyes, Ph.D., Advanced Materials Technology, Inc., Wilmington, DE (USA)

Joseph J. DeStefano, Ph.D., Advanced Materials Technology, Inc., Wilmington, DE (USA)

Robert S. Hodges, Ph.D., University of Colorado, Denver, CO (USA)

Alois Jungbauer, Ph.D., University of Natural Resources and Life Sciences, Vienna (Austria)

James Martosella, M.Sc., Janssen Research & Development, Malvern, PA (USA)

Ron Orlando, Ph.D., University of Georgia, Athens, GA (USA)

Mark R. Schure, Ph.D., Kroungold Analytical, Blue Bell, PA (USA)

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Wednesday Free Vendor Seminar July 10, 2019 @ 12:00-1:15 PM

12:00–1:15 PM **Wednesday Free Vendor Seminar Sponsored by Purolite Life Sciences**
Maryland Suite "A Complete Platform of Synthetic Resins for All Needs in Chromatography, from
"COLUMBIA" **HPLC to Industrial Capture of Small and Medium Biomolecules"**
2nd floor *(light lunch will be provided)*
Must register at the at the Purolite Life Sciences exhibit by Wednesday @ 11:00 AM

Presenter: Alessandra Basso, Purolite Life Sciences, Llantrisant, UK

Alessandra Basso will present the Chromalite M methacrylate-based resins with a full range of functionalities, including ion exchange, reverse-phase and, affinity chromatography. Available in standard average particle sizes of 50 -100 µm and 75-200 µm, for high resolution, intermediate purification, or capture chromatography; Purolite Life Sciences can also offer customisation of Chromalite M from 5 to 500 µm for any application.

Thursday Free Vendor Seminar July 11, 2019 @ 12:00-1:15 PM

12:00–1:15 PM **Thursday Free Vendor Seminar Sponsored by Malvern Panalytical**
Maryland Suite "High Impact Data in Size Exclusion Chromatography - The Importance of
"COLUMBIA" **Instrument Performance in Data Quality"**
2nd floor *(light lunch will be provided)*
Must register at the at the Malvern Panalytical exhibit by Thursday @ 11:00 AM

Presenters: Matthew McGann, Malvern Panalytical, Westborough, PA, USA
Hiteshri Makwana, Malvern Panalytical, Malvern, PA, USA
Kyle Williams, Malvern Panalytical, Houston, TX, USA

Size exclusion chromatography (SEC) is now part of a core set of metrics for the evaluation of biopharmaceutical entities. Analysis of sample quality using SEC can aid understanding of the molecule, which could, in the worst case, determine the developmental fate of the biologic. Consequently, the criticality of data quality and integrity in chromatography is a multi-faceted subject that joins together not only the quality and performance of the instrumentation, but also the experimental design, injected sample quality, data interpretation, along with reproducibility and repeatability of the generated results. In this seminar, using practical examples, we will examine the benefits of employing an advanced detection approach over conventional chromatography for the determination of protein aggregation, molecular weight and structure. We will also discuss instrument, sample and data interpretation requirements for generating high quality datasets and how these requirements differ from conventional chromatography. Finally, we will review instrument performance from the perspective of routine maintenance and care, ensuring the reproducibility and repeatability of every dataset generated.

General Information

VENUE Hyatt Regency Baltimore on the Inner Harbor
300 Light Street, Baltimore, MD 21202, USA
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NAME BADGES Registered participants must wear their official conference name badge in its badge holder (no badge sharing), and your name badge in its badge holder must be completely visible at all times to enter and while you are inside the meeting rooms and exhibition/poster hall. Persons without a visible name badge in its badge holder, or with a badge that is not their own name badge, will be escorted out of the meeting room or exhibition/poster hall.

REGISTRATION Symposium Registration is located at the Constellation Ballroom on the 2nd floor of the Hyatt Regency hotel.

EXHIBITS The Exhibition is an important component of the meeting, so please take the time to thank all the exhibitors for their support of the program by visiting the booths located in the Constellation Exhibition Hall (2nd floor).

EXHIBIT HOURS Wednesday 10:30 AM – 7:15 PM
Thursday 10:30 AM – 4:45 PM

SOCIAL NETWORKING

Wednesday Break and Social	10:30 AM - 11:00 AM	Constellation Ballroom E/F, 2nd floor
Wednesday Mixer/Poster Session	1:15 PM - 2:45 PM	Constellation Ballroom E/F, 2nd floor
Wednesday Welcome Mixer	6:15 PM - 7:15 PM	Constellation Ballroom E/F, 2nd floor
Thursday Break and Social	10:30 AM - 11:00 AM	Constellation Ballroom E/F, 2nd floor
Thursday Mixer & Poster Session	1:15 PM - 2:45 PM	Constellation Ballroom E/F, 2nd floor
Thursday Break and Social	4:15 PM - 4:45 PM	Constellation Ballroom E/F, 2nd floor
*Thursday Conference Banquet	6:30 PM - 8:30 PM	Harborview, 2nd floor (ticket required)

**Tickets may be purchased from the ISPPP 2019 Symposium Registration Desk*

Oral Presentation Guidance

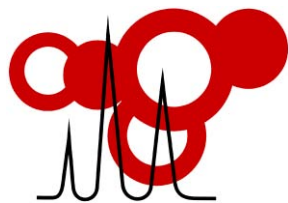
- Please arrive at your session at least 30 minutes before the start of the session to introduce yourself to the session chair and to submit your presentation on a flash drive labeled with the presenter's name. Please bring an additional copy of your presentation in PDF format to be used in case of software incompatibilities, computer problems. All slides in your presentation should be sized to the aspect ratio of 16:9. It is important to note that if there is no time to submit your presentation between sessions, please submit the presentation during the break that immediately precedes your session.
- Please approach the podium during the question period for the talk preceding yours so you will be ready when you are introduced as the next speaker.
- We recommend that you use the computer that is provided unless using your own computer is essential to avoid software/hardware compatibility issues. Computers running Windows XP will be available with PowerPoint, and Acrobat Reader software using standard default settings.
- Kindly note that session chairs are under very strict instructions to keep their sessions on schedule. Please allow 3-4 minutes of your presentation time for discussion noting presentations will not be allowed to exceed the total time allotted.

Poster Presentation Guidance

- POSTER SET UP** – ALL posters must set up on Wednesday, July 10, by 10:30 AM.
- POSTER SESSIONS**
- Posters are located in the Constellation Ballroom E/F, 2nd floor.
 - Poster presentations are numbered in the scientific program to correspond with the poster board number.
 - To verify the poster board number, please refer to the Author Index located in the back of the Final Program. "L" preceding the abstract number = Lecture; "P" preceding the abstract number = Poster.
 - Authors presenting posters are asked to be in attendance at their poster board during the Poster Sessions on Wednesday at 1:15-2:45 PM and Thursday at 1:15-2:45PM.
 - Reprint envelopes are attached to the poster boards. To request reprints of poster abstracts, please insert your business card in the envelope. Each day, poster presenters should look in their reprint envelopes to retrieve any business cards that may be inside the envelope.
- POSTER TEAR DOWN**
- ALL posters stay up on the poster boards for two days for participants to view.
 - Do NOT remove any posters until Thursday between 2:45-4:00 PM.
 - Anything remaining on the poster boards after 4:00 PM will be discarded.

Key to Lecture and Poster Numbers

<u>First Symbol</u>	P = Poster Presentation	<u>P</u> -200
	L = Lecture Presentation	<u>L</u> -100
<u>Second Symbol</u>	Poster Presentation Number	<u>P-100</u>
	Lecture Presentation Number	<u>L-100</u>



Scientific Program

July 10-12, 2019 in Baltimore, MD, USA

www.isppp.org

Wednesday, July 10, 2019

7:30 AM **Symposium Registration Open**
Location: Constellation Foyer, 2nd floor

10:30 AM – 7:15 PM **Exhibition Open**
Location: Constellation Ballroom E/F, 2nd floor

8:20 AM **WELCOME AND OPENING COMMENTS**

Wednesday Session 1. Analytical Approaches to Intact Protein Separations

Session Chair: Barry Boyes, Advanced Materials Technology, Inc.

Location: Maryland Suite "FREDERICK", 2nd floor

8:30 AM L-101 **HIC-MS for the Analysis of mAb's and ADC's.** Andrew Alpert¹, Bifan Chen², Eli Larson², Ying Ge², ¹PolyLC Inc., Columbia, MD, USA; ²University of Wisconsin-Madison, Madison, WI, USA

9:00 AM L-102 **Control of Simultaneous Independent Salt and pH Gradients Greatly Facilitates MAb Isoform Separation.** Allen Hirsh, Latchezar Tsonev, Cryobiophysics Inc., Chevy Chase, MD, USA

9:30 AM L-103 **Dramatically Improve Purification and Characterization Workflows by Precisely Knowing the Stability and Quality of Your Protein First.** Peter Fung, Nanotemper Technologies, South San Francisco, CA, USA

10:00 AM L-104 **Field-Flow Fractionation: A Robust Separation Technique for Proteins, Antibodies, Viruses, Exosomes, and More.** Robert Reed, Soheyl Tadjiki, Postnova Analytics, Salt Lake City, UT, USA

10:30 AM **Break and Social in Exhibition/Poster Session Hall**
Location: Constellation Ballroom E/F, 2nd floor

Wednesday, July 10, 2019

Wednesday Session 2. Multidimensional Methods Applied to mAb Analysis

Session Chair: Mark Schure, Kroungold Analytical, Inc.

Location: Maryland Suite "FREDERICK", 2nd floor

- 11:00 AM L-105 **Deploying Multidimensional Chromatography in the Development and Manufacturing of ADC-based Therapies.** Robert Birdsall¹, Henry Shion¹, Weibin Chen¹, Frank Kotch², Alain Beck³, ¹Waters Corporation, Milford, MA, USA; ²Pfizer Corporation, Andover, MA, USA; ³Pierre fabre, St. Julien-en-Genevois, FRANCE
- 11:30 AM L-106 **Online 2D Chromatography Applied to Characterization of Glycosylations on Monoclonal Antibodies.** Mark Han, U.S. Pharmacopeial Convention, Rockville, MD, USA
- 12:00 PM **PAUSE, EXHIBITION, POSTERS** (lunch on own)
- 12:00–1:15 PM **Wednesday Free Vendor Seminar Sponsored by Purolite Life Sciences**
"A Complete Platform of Synthetic Resins for All Needs in Chromatography, from HPLC to Industrial Capture of Small and Medium Biomolecules"
Location: Maryland Suite "COLUMBIA" (*light lunch will be provided*)
Must register at the at the Purolite Life Sciences exhibit by Wednesday @ 11:00 AM

Wednesday, July 10, 2019

1:15 – 2:45 PM **Mixer, Poster Session, and Exposition**

Location: Constellation Ballroom E/F, 2nd floor

- Poster P-101 **Polymeric Adsorbents as Chromatographic Reverse Phase Media for Peptides and Oligonucleotides.** [Daryl Gisch](#)¹, Natalie Savich², Allyson Kriebel³, ¹DowDupont, Midland, MI, USA; ²DowDupont, Libertyville, IL, USA; ³DowDupont, Wilmington, DE, USA
- Poster P-102 **Employing Polypropylene Capillary-channeled Polymer Fiber Column as the Second Dimension in a Comprehensive Two-dimensional System for Analysis of Complex Protein Mixture.** [Lei Wang](#), R. Kenneth Marcus, Clemson University, Clemson, SC, USA
- Poster P-103 **Isolation and Characterization of Tumor-derived Exosomes for Ovarian Cancer Biomarker Detection using a C-CP Fiber Spin-down Approach.** [Kaylan Kelsey](#), Tyler Slonecki, Rhonda Powell, Terri Bruce, R. Kenneth Marcus, Clemson University, Clemson, SC, USA
- Poster P-104 **Reversible Labeling of Therapeutic Cells and Proteins using Light-controlled Fluorescently-labeled Cyclic Peptides.** John Schneible, Ashlyn Young, Kevin Day, Vladimir Pozdin, Donald Freytes, Michael Daniele, [Stefano Menegatti](#), North Carolina State University, Raleigh, NC, USA
- Poster P-105 **Characterization of the NIST mAb by Microfluidic CE-SDS.** James White, Zhiyong Peng, Erik Miller, [April Blodgett](#), PerkinElmer, Hopkinton, MA, USA
- Poster P-106 **Isolation and Quantification of Human Urinary Exosomes by HIC on a Polyester Capillary-channeled Polymer Fiber Phase.** [Sisi Huang](#), Tyler Slonecki, Lei Wang, Rhonda Powell, Terri Bruce, R. Kenneth Marcus, Clemson University, Clemson, SC, USA
- Poster P-107 **Electro-flow Asymmetric Field Flow Fractionation Characterization of the NIST Monoclonal Antibody Standard RM 8671.** [Robert Reed](#), Soheyl Tadjiki, Postnova Analytics, Salt Lake City, UT, USA
- Poster P-108 **High Pressure Optical Spectroscopy (HiPOS) as a Powerful Tool for Protein Characterization, Formulations Development, and Real-time Analysis of Enzyme Kinetics at High Hydrostatic Pressure.** [Gary Smejkal](#), Vera Gross, Alexander Lazarev, Pressure Biosciences, South Easton, MA, USA
- Poster P-109 **Native Microchip CE-MS for In-depth Biopharmaceutical Characterization.** Ashley Bell, Erin Redman, Colin Gavin, Scott Mellors, 908 Devices, Boston, MA, USA (presented by [Nigel Sousou](#))

Wednesday, July 10, 2019

Wednesday Session 3. Protein Structure Analysis

Session Chair: Andrew Alpert, PolyLC Inc.

Location: Maryland Suite "FREDERICK", 2nd floor

- 2:45 PM L-107 **Native Microchip CE-MS for In-Depth Biopharmaceutical Characterization.** Nigel Sousou, Scott Mellors, Erin Redman, Ashley Bell, Collin Gavin, 908 Devices, Boston, MA, USA
- 3:15 PM L-108 **Continuous Monitoring of Antibody Column Breakthrough by Fluorescence Polarization and Fluorescence Intensity.** Ujwal Patil, Mary Crum, Binh Vu, Katerina Kourentzi, Richard C. Willson, University of Houston, Houston, TX, USA

Wednesday Session 4. mAb Glycosylation

Session Chair: Ronald Orlando, University of Georgia

Location: Maryland Suite "FREDERICK", 2nd floor

- 3:45 PM L-109 **Fc Galactosylation in mAbs: Measure It, Understand It and Control It.** Bingchuan Wei, Genentech, South San Francisco, CA, USA
- 4:15 PM L-110 **Toward Accurate Quantification of Glycosylation on Therapeutic mAbs.** Mark S. Lowenthal¹, Karen W. Phinney¹, Michael J. Tarlov¹, Geert-Jan Boons², ¹National Institute of Standards and Technology, Gaithersburg, MD, USA; ²CCRC–University of Georgia and Utrecht University, Utrecht, NETHERLANDS

Wednesday Session 5. Glycosylation and Glycan Analytics

Session Chair: James Martosella, Janssen Research & Development

Location: Maryland Suite "FREDERICK", 2nd floor

- 4:45 PM L-111 **Differential Quantitative Determination of Site-specific Intact N-glycopeptides in Serum using LC-ETHcD-MS/MS.** David Lubman, University of Michigan, Ann Arbor, MI, USA
- 5:15 PM L-112 **Chromatographic Separation of Glycan Anomers and Linkage Isomers.** Tyler Fletcher, Ron Orlando, University of Georgia, Athens, GA, USA
- 5:45 PM L-113 **LC-MS/MS of Labeled Glycan and Glycopeptide Isomers.** Yehia Mechref, Texas Tech University, Lubbock, TX, USA
- 6:15–7:15 PM **WELCOME MIXER in Exhibition/Poster Session Hall**
Location: Constellation Ballroom E/F, 2nd floor

Thursday, July 11, 2019

8:00 AM **Symposium Registration Open**
Location: Constellation Foyer, 2nd floor

10:30 AM – 4:45 PM **Exhibition Open**
Location: Constellation Ballroom E/F, 2nd floor

Thursday Session 6. New Materials and Separations Fundamentals

Session Chair: Joseph DeStefano, Advanced Materials Technology, Inc.
Location: Constellation Ballroom D, 2nd floor

8:30 AM L-114 **Chromalite M: Highly Performing Methacrylate Polymer Resins for Bio-separations.** Benjamin Summers, Alessandra Basso, Simona Serban, Purolite Ltd., Llantrisant, UK

9:00 AM L-115 **Molecular Mimics of Protein Metal-Binding Motifs: Development of New Metal Affinity Chromatographic Systems for the Purification of Recombinant Proteins.** Milton Hearn, Monash University, Clayton, AUSTRALIA

9:30 AM L-116 **A New Method for the Preparation and Purification of Well-defined Protein-DNA Conjugates for Different Applications (e.g. DNA Nanotechnology).** Joanna Deek¹, Vishal Maingi², Byoung-jin Jeon², Jaimie Marie Stewart², Paul W. K. Rothmund², Ralf Strasser³, ¹Dynamic Biosensors Inc., San Diego, CA, USA; ²California Institute of Technology, Pasadena, CA, USA; ³Dynamic Biosensors GmbH, Martinsried, GERMANY

10:00 AM L-117 **The Particle Roadmap: Capillary Columns - Where Are the Sweet Spots and What Are the Limitations of These Approaches for Biomolecular Analysis Compared with Traditional Packed Beds?** Robert Maier¹, Matthew Beauchamp², Mark Schure³, ¹Robert S. Maier Consulting, Tucson, AR, USA; ²Merck & Co. Inc., Kenilworth, NJ, USA; ³Kroungold Analytical Inc., Blue Bell, PA, USA

10:30 AM **Break and Social in Exhibition/Poster Session Hall**
Location: Constellation Ballroom E/F, 2nd floor

Thursday Session 7. Protein Analysis in Therapeutic Proteins

Session Chair: Alois Jungbauer, University of Natural Resources & Life Sciences, Vienna
Location: Constellation Ballroom D, 2nd floor

11:00 AM L-118 **Challenges and Solutions Encountered in Analytical Method Development for a Protein Biotherapeutic in a Capsule Presentation.** James Martosella, Srinivas Gunturi, Robert Hepler, Jessika Feliciano, Janssen, Malvern, PA, USA

11:30 AM L-119 **LC/MS and Labeling Approaches to Improve Detection and Measurement of Free Thiols and Disulfide Bridges in Proteins.** Barry Boyes, William Miles, Ben Libert, Joe DeStefano, Advanced Materials Technology, Inc., Wilmington, DE, USA

12:00 PM **PAUSE, EXHIBITION, POSTERS** (lunch on own)

12:00–1:15 PM **Thursday Free Vendor Seminar Sponsored by Malvern Analytical "High Impact Data in Size Exclusion Chromatography - The Importance of Instrument Performance in Data Quality"**

Location: Maryland Suite "Columbia" (*light lunch will be provided*)

Must register at the at the Malvern Analytical exhibit by Thursday @ 11:00 AM

1:15 – 2:45 PM Mixer, Poster Session, and Exposition

Location: Constellation Ballroom E/F, 2nd floor

- Poster P-110 **UHPLC/MS Analysis of Concussion Biomarkers on 1000 Å Superficially Porous Particles.** Cory Muraco, Michael Ye, MilliporeSigma, Bellefonte, PA, USA
- Poster P-111 **Preparation of Well-defined Protein-DNA Conjugates.** Joanna Deek¹, Vishal Maingi², Byoung-jin Jeon², Jaimie Marie Stewart², Paul W.K. Rothmund², Ralf Strasser³,
¹Dynamic Biosensors Inc., San Diego, CA, USA; ²Caltech, Pasadena, CA, USA;
³Dynamic Biosensor GmbH, Martinsried, GERMANY
- Poster P-112 **Characterization of Guanine Deaminase.** Justin Godinho, Ben Libert, Barry Boyes, Advanced Materials Technology, Wilmington, DE, USA
- Poster P-113 **Wide Pore Superficially Porous Particles with Various Bonded Phases for High Resolution Protein Chromatography.** William Miles, Benjamin Libert, Barry Boyes, Advanced Materials Technology, Wilmington, DE, USA
- Poster P-114 **Development of New Cell Analysis Method Combining FD-LC-MS/MS Method and Monolithic Silica Capillary Column.** Hiroshi Kobayashi¹, Hiroo Wada¹, Kazuhiro Imai²,
¹Shinwa Chemical Industries, Ltd, Kyoto, JAPAN; ²Musashino University, Tokyo, JAPAN
- Poster P-115 **Evaluating the Utility of a HILIC Model for Predicting Glycan Retention across Differing Stationary Phases and Tagging Chemistries.** Naglaa Sheiba¹, Mark Han², Ron Orlando¹,
¹CCRC/University of Georgia, Athens, GA, USA; ²USP, Rockville, MD, USA
- Poster P-116 **Absolute Quantitation of the N-linked Glycoforms of a Biotherapeutic IgG in Complex Mixtures by HILIC-MRM with an Isotopically Labeled Standard.** Ron Orlando¹, Tyler Fletcher¹, Marla Popov²,
¹CCRC/University of Georgia, Athens, GA, USA; ²GlycoScientific, Athens, GA, USA
- Poster P-117 **Quantitation of Host Cell Contaminants in Biotherapeutic IgG using LC-ToF-MRM with SILAC Labeled Reference Standards.** Tyler Fletcher¹, Marla Popov², Stuart Haslam³, Ron Orlando¹,
¹CCRC/University of Georgia, Athens, GA, USA; ²GlycoScientific, Athens, GA, USA; ³Imperial College, London, UK
- Poster P-118 **Chromalite M: A Novel Range of Methacrylic Polymers with High Performance in Chromatographic Bio-Separations.** Benjamin Summers, Jessica Hatherley, Christopher Bresner, Alessandra Basso, Simona Serban, Purolite Ltd., Llantrisant, UK

Thursday, July 11, 2019

Thursday Session 8. Bispecific mAbs

Session Chair: Bingchaun Wei, Genentech

Location: Constellation Ballroom D, 2nd floor

- 2:45 PM L-120 **Fit for Purpose: Charge Assay Development and Selection for a Bispecific Antibody.** Ming Lei, Brian Roper, Thomas Niedringhaus, Daniel McDonald, Tao Chen, Genentech, South San Francisco, CA, USA
- 3:15 PM L-121 **Promise of Ion Exchange Chromatography for the Control of Key Attributes in Bispecific Antibodies.** Geetha Goparaju, James Martosella, Christopher Cammarata, Jessika Feliciano, Johnson & Johnson, Malvern, PA, USA
- 3:45 PM L-122 **Hydrophobic Interaction Chromatography (HIC) and Two-Dimensional LC-MS Characterization of Bispecific Antibodies.** Bhargavi Vemulapalli, Chunlei Wang, Samuel Aaron Korman, Mingyan Cao, Dengfeng Liu, AstraZeneca, Gaithersburg, MD, USA
- 4:15 PM **Break and Social in Exhibition/Poster Session Hall**
Location: Constellation Ballroom E/F, 2nd floor

Thursday Session 9. Host Cell Protein Analytics

Session Chair: Robert Hodges, University of Colorado

Location: Constellation Ballroom D, 2nd floor

- 4:45 PM L-123 **Quantification of Host Cell Protein Homologs of a Human Peptide Antigen in an Antibody Therapeutic by Tandem Mass Spectrometry with Parallel Reaction Monitoring.** John Briggs, Adam Catherman, Matt Kalo, Genentech Inc., South San Francisco, CA, USA
- 5:15 PM L-124 **Towards True Protein A Mimetics: Novel Peptide Ligands for mAb Purification Provide High Clearance of Host Cell Protein Impurities (HCP LRV ~ 3).** Hannah Reese, Zingqing Xiao, Calvin Shanahan, Carol Hall, Stefano Menegatti, North Carolina State University, Raleigh, NC, USA
- 5:45 PM L-125 **TUTORIAL: De novo Designed and Synthesized Peptide Standards for (1) Effective Monitoring of HPLC Column Performance and Separation Protocol Development and (2) Assessment of the Value of RP-HPLC as a Probe of Polypeptide Structure and Stability.** Colin T. Mant, Department of Biochemistry and Molecular Genetics, Anschutz Medical Campus, and AMP Discovery LLC, Aurora, CO, USA
- 6:15 PM **Pause**
- 6:30 – 8:30 PM **CONFERENCE BANQUET** (Ticket Required)

Friday, July 12, 2019

8:30 AM **Symposium Registration Open**
Location: Constellation Foyer, 2nd floor

Friday Session 10. Peptides and Peptide Analytics

Session Chair: Colin Mant, University of Colorado at Denver
Location: Constellation Ballroom D, 2nd floor

9:00 AM L-126 **Using a Combined Glycan-peptide HILIC Retention Prediction Model to Identify Glycopeptides and Peptides with Other Modifications.** Ron Orlando, University of Georgia, Athens, GA, USA

9:30 AM L-127 **Salt Optimization in ERLIC for Simultaneous and Highly Selective Enrichment of Peptides with Multiple PTMs.** Yusi Cui¹, Dylan Tabang¹, Andrew Alpert², Lingjun Li¹, ¹University of Wisconsin-Madison, Madison, WI, USA; ²Poly LC Inc., Columbia, MD, USA

10:00 AM L-128 **De novo Designed Antimicrobial Peptides are Effective against Antibiotic Resistant Gram-negative Organisms.** Robert Hodges, University of Colorado at Denver, Aurora, CO, USA

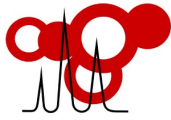
Friday Session 11. Separations of Complexes and Assemblies

Session Chair: Milton Hearn, Monash University, Australia
Location: Constellation Ballroom D, 2nd floor

10:30 AM L-129 **Chromatography Beads, Monoliths, Membrane Adsorbers or Combinations for the Purification of Enveloped Virus-like Particles.** Patricia Aguilar¹, Katrin Reiter², Petra Stepert¹, Alois Jungbauer¹, ¹BOKU, Vienna, AUSTRIA; ²acib, Vienna, AUSTRIA

11:00 AM **Invitation to ISPPP 2020**

11:10 AM **Closing Remarks**



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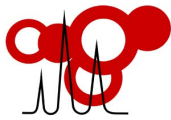
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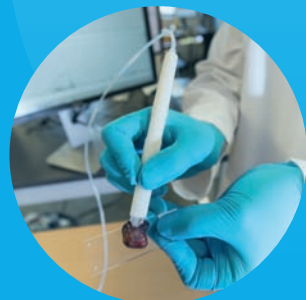
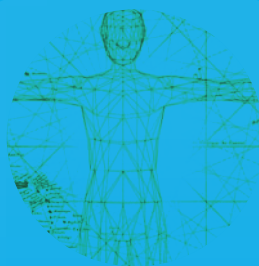
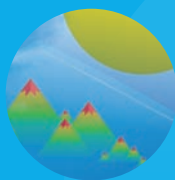
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