

**75th TOBACCO SCIENCE RESEARCH CONFERENCE**

**MONDAY MORNING, SEPTEMBER 12, 2022**

**Symposium**

**8:45AM WELCOME & OPENING REMARKS**

Elaine Round, RAI Services Company  
75<sup>th</sup> TSRC Conference Chair

**8:50 AM CHANGES IN THE TOBACCO INDUSTRY: 75 YEARS OF TSRC**

Fraser Williamson, Global Laboratory Services  
75<sup>th</sup> Symposium Chair

**8:55AM 1. 75 Years of TSRC – Yesterday in a Nutshell.** Mike OGDEN;  
Ogden Ology, Lewisville, NC, USA

**9:20AM 2. TOBACCO AGRONOMIC MANAGEMENT AND THE  
EVOLUTION OF HARM REDUCTION.** Matthew VANN;  
North Carolina State University, Raleigh, NC, USA

**9:45AM 3. THE HARM REDUCTION POTENTIAL OF ORAL  
TOBACCO PRODUCTS: PAST, PRESENT AND FUTURE.**  
Jason FLORA; Altria Client Services, Richmond, VA, USA

**10:10AM Break**

**10:30AM 4. THE CHALLENGE AND PROMISE OF AEROSOL-  
BASED TOBACCO PRODUCTS FOR REDUCING THE  
HEALTH IMPACT OF TOBACCO USE.** Elaine ROUND; RAI  
Services Company, Winston-Salem, NC, USA

**10:55AM 5. A BETTER WAY FORWARD – PERSPECTIVES FROM A  
PHYSICIAN, SCIENTIST AND PUBLIC HEALTH  
ADVOCATE.** Jasjit AHLUWALIA; Brown University, Providence,  
RI, USA

**11:20AM 6. SCIENTIFIC COOPERATION TO SUPPORT HARM  
REDUCTION STRATEGIES: CORESTA RECENT WORK  
AND PERSPECTIVES.** Rob STEVENS; President of the  
CORESTA Scientific Commission

**11:40AM 7. 65 YEARS OF TOBACCO SCIENCE JOURNAL.** Bob PEARCE; University of Kentucky, Lexington, KY, USA

**12:00AM Lunch**

**1:00AM Poster Session**

**8. ABUSE LIABILITY ASSESSMENT FOR PREMARKET TOBACCO PRODUCT APPLICATIONS: APPLICATION OF HUMAN ABUSE POTENTIAL (HAP) STUDY METHODOLOGY AND SPECIAL CONSIDERATIONS.** Naama LEVY-COOPERMAN and Megan J. Shram; Altreos Research Partners, Toronto, ON, Canada

**9. AN IMPROVED METHOD FOR THE DETERMINATION OF CARBONYLS IN CIGARETTE SMOKE AND BUTYRALDEHYDE CO-ELUTION.** Xiaohong C. JIN, Regina M. Ballentine, Weiling Li and John H. Miller; Altria Client Services, Richmond, VA, USA

**10. NICOTINE GUM PRODUCT COMPARISON: DEVELOPMENT AND APPLICATION OF MASTICATION METHOD.** Hannah GRISEVICH, Fadi Aldeek, Vanessa Lopez and John H. Miller; Altria Client Service Richmond, VA, USA

**11. MECHANISTIC TOXICITY ASSESSMENT OF ORAL NICOTINE POUCHES IN COMPARISON TO COMBUSTIBLE CIGARETTES AND SMOKELESS TOBACCO USING HUMAN GINGIVAL FIBROBLASTS.** Ashutosh KUMAR<sup>1</sup>, Utkarsh Doshi<sup>1</sup>, Mariana Farcas<sup>1</sup>, Mingda Zhang<sup>1</sup>, Jutta Marzillier<sup>2</sup>, George DeGeorge<sup>2</sup> and K Monica Lee<sup>1</sup>; <sup>1</sup>Altria Client Services, Richmond, VA, USA and <sup>2</sup>MB Research Labs, Spinnerstown, PA, USA

**12. DEVELOPMENT OF MODIFIED RISK CLAIMS AND SUPPORTIVE LANGUAGE TO MOTIVATE AND INFORM ADULT SMOKERS TO SWITCH FROM CIGARETTES TO AN ORAL TOBACCO-DERIVED NICOTINE PRODUCT.** Joshua KARELITZ, Jenna Leighty, Elizabeth Becker and Mohamadi Sarkar; Altria Client Services, Richmond, VA, USA

**13. A STRUCTURE-ACTIVITY RELATIONSHIP BASED APPROACH TO TOBACCO PRODUCT INGREDIENT HAZARD ASSESSMENT.** Chastain ANDERSON, Olushola Awoyemi, Zhengxi Wei, Jingjie Zhang, Richard Morgan and Kyeonghee Monica Lee; Altria Client Services, Richmond, VA, USA

- 14. A COMPARISON OF HPHCS IN ON!<sup>®</sup> NICOTINE POUCHES TO HPHCS IN CIGARETTES AND SWEDISH SNUS.** Karl WAGNER, Timothy L. Danielson, Jason W. Flora, Vanessa E. Haase, Richard W. Morgan and Michael J. Morton; Altria Client Services, Richmond, VA, USA
- 15. COMPARATIVE TOXICITY ASSESSMENT OF MARKET ORAL NICOTINE POUCHES TO COMBUSTIBLE CIGARETTES AND ORAL TOBACCO USING REGULATORY IN VITRO CYTOTOXICITY AND GENOTOXICITY ASSAYS.** Mariana FARCAS, Doshi Utkarsh, Mingda Zhang, Yevgeniya V. Prepelitskaya, Thomas J. Hurst and Kyeonghee M. Lee; Altria Client Services, Richmond, VA, USA
- 16. A COMPARATIVE HPHC QUANTITATIVE RISK ASSESSMENT OF RELX INFINITY ENDS AEROSOLS WITH 1R6F CIGARETTE AND VUSE ALTO ENDS.** Charlene LIU<sup>1</sup>, Djerem Simidjoglu<sup>2</sup>, Perla Landestoy<sup>2</sup>, Emmanuel Minet<sup>2</sup> and Autumn Bernal<sup>3</sup>; <sup>1</sup>Cheerain HK Limited, Hong Kong, China, <sup>2</sup>Broughton Group Limited, Leeds, UK and <sup>3</sup>ToxCreative, Laguna Hills, CA, USA
- 17. AN ABUSE LIABILITY ASSESSMENT OF THE RELX INFINITY ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) WITH TOBACCO AND MENTHOL FLAVORED E-LIQUIDS IN ADULT ENDS CONSUMERS.** Donald GRAFF<sup>1</sup>, Rebeca Melara<sup>2</sup>, Ramadevi Vemuri<sup>2</sup> and Catherine Mills<sup>2</sup>; <sup>1</sup>Cheerain HK Limited, Hong Kong, China and <sup>2</sup>Altasciences Inc, Laval, QC, Canada
- 18. AN ABUSE LIABILITY ASSESSMENT OF THE RELX INFINITY ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) WITH TOBACCO AND MENTHOL FLAVORED E-LIQUIDS IN ADULT SMOKERS.** Donald GRAFF<sup>1</sup>, Rebeca Melara<sup>2</sup>, Ramadevi Vemuri<sup>2</sup> and Catherine Mills<sup>2</sup>; <sup>1</sup>Cheerain HK Limited, Hong Kong, China and <sup>2</sup>Altasciences Inc, Laval, QC, Canada
- 19. A BLACK BUFFALO NOVEL NICOTINE POUCH PRODUCT IS BIOEQUIVALENT TO 4 MG NICORETTE GUM.** Ed CARMINES<sup>1</sup>, Karen Carmines<sup>1</sup>, Lise Fraissinet<sup>1</sup>, Naama Levy- Cooperman<sup>2</sup> and Ryan Seltzer<sup>3</sup>; <sup>1</sup>Chemular Inc, Hudson, MI, USA, <sup>2</sup>Altros Research Partners, Toronto, ON, Canada and <sup>3</sup>Safety in Numbers, Tucson, AZ, USA
- 20. COMPARATIVE AEROSOL HPHC EVALUATION OF SEVEN FLAVORS OF A TEMPERATURE-REGULATED NICOTINE SALT-BASED CONNECTED ENDS PRODUCT WITH COMBUSTIBLE TOBACCO CIGARETTES.** Manoj MISRA, Ed Carmines and Lise Fraissinet; Chemular Inc, Alamo, CA, USA
- 21. COMPARATIVE AEROSOL HPHC EVALUATION OF SEVEN FLAVORS OF A TEMPERATURE-REGULATED NICOTINE SALT-BASED CONNECTED ENDS PRODUCT WITH MARKET STANDARD ENDS.** Manoj MISRA, Ed Carmines and Lise Fraissinet; Chemular Inc, Alamo, CA, USA

- 22. IN VITRO TOXICITY EVALUATION OF AEROSOL FROM SEVEN FLAVORS FROM A TEMPERATURE-REGULATED NICOTINE SALT-BASED CONNECTED ENDS PRODUCT.** Manoj MISRA; Chemular Regulatory Consulting, Alamo, CA, USA
- 23. PERCEPTIONS AND USE OF AN ENDS DEVICE FOR A VULNERABLE POPULATION: INCARCERATED PERSONS.** Cheryl OLSON<sup>1</sup>, Neil Sherwood<sup>2</sup> and Willie McKinney<sup>3</sup>; <sup>1</sup>Cheryl K. Olson, Sc.D., San Carlos, CA, USA, <sup>2</sup>Neil Sherwood Consulting, Nyon, Vaud, Switzerland and <sup>3</sup>McKinney Regulatory Science Advisors, Henrico, VA, USA
- 24. USING BOOTSTRAP SAMPLING TO ASSESS THE EFFECT OF LOW PARTICIPATION IN PROFICIENCY STUDIES.** Stacey SLONE, C. Ruth McNeas and Brent Shelton; University of Kentucky, Lexington, KY, USA
- 25. VITROCELL CELL EXPOSURE METHODS FOR SCREENING AND DOSE RESPONSE EXPERIMENTS TO MAXIMIZE DELIVERY AND REDUCE EXPOSURE TIMING.** Mariano SCIAN, Cameron Sovick, Christopher Damron, Benjamin Irvin and Pavel Kosachevsky; Enthalpy Analytical, Henrico, VA, USA
- 26. GENERATION AND TESTING OF HIGH CONCENTRATION HTP CONDENSATE IN THE NEUTRAL RED UPTAKE ASSAY.** Mariano SCIAN, M. Smith, P. Emma, C. Sovick, P. Kosachevsky and L. McFadden; Enthalpy Analytical, Henrico, VA, USA
- 27. GENERATION AND TESTING OF HIGH CONCENTRATION HTP CONDENSATE IN THE BACTERIAL REVERSE MUTATION ASSAY.** Mariano SCIAN, L. McFadden, A. Bhatnagar, G. Freeman, E. Wickersham, P. Morris, C. Sovick, P. Kosachevsky and M. Smith; Enthalpy Analytical, Henrico, VA, USA
- 28. INVESTIGATING THE POTENTIAL FOR KETENE GENERATION IN FLAVORED E-LIQUIDS VIA THERMAL DEGRADATION OF ESTER FLAVORANTS.** Joseph JABLONSKI, Andrew G. Cheetham and Ethan D. Sill; Enthalpy Analytical, Richmond, VA, USA
- 29. ANALYSIS OF GLYCIDOL IN ELECTRONIC NICOTINE DELIVERY SYSTEMS AND HEATED TOBACCO PRODUCTS AEROSOL BY GC/MS.** Joseph KENNADAY, Roy Hutchins, Michael J. Siernos and Carl J. Adams; Eurofins Professional Scientific Services, Winston-Salem, NC, USA

- 30. ANALYTICAL METHOD VALIDATION FOR ANALYSIS OF METALS IN ELECTRONIC NICOTINE DELIVERY SYSTEM LIQUIDS WITHOUT THE USE OF MICROWAVE DIGESTION.** Carol KING, Donald Stogner, Carl J. Adams and Salem Chouchane; Eurofins Professional Scientific Services, Winston-Salem, NC, USA
- 31. VALIDATION OF A UPLC METHOD FOR THE DETERMINATION OF NAPHTHALENE, PYRENE AND BENZO[A]PYRENE IN HEATED TOBACCO PRODUCTS.** Flaubert MBEUNKUI, Osie V. Morrissey, Carl J. Adams and Salem Chouchane; Eurofins Professional Scientific Services, Winston-Salem, NC, USA
- 32. VALIDATION OF A GC/MS METHOD FOR DETERMINATION OF SODIUM PROPIONATE, POTASSIUM SORBATE AND SODIUM BENZOATE IN SMOKELESS TOBACCO PRODUCTS.** Flaubert MBEUNKUI, Nathan Weisner, Essoyodou Kpatcha, Carl J. Adams and Salem Chouchane; Eurofins Professional Scientific Services, Winston-Salem, NC, USA
- 33. USE OF DNPH-HCL FOR DERIVITIZATION AND ANALYSIS OF CARBONYLS IN ELECTRONIC NICOTINE DELIVERY SYSTEMS (LIQUID AND AEROSOL) AND AEROSOL FROM HEATED TOBACCO PRODUCTS.** Rebecca ROBERTS, Christie Brande, LaTya Lindsay, Matthew Watts, Stephen Vance, Angela Seamans, Carl J. Adams and Salem Chouchane; Eurofins Professional Scientific Services, Winston-Salem, NC, USA
- 34. THE ANALYTICAL TRANSFORMATION FROM HELIUM TO HYDROGEN.** Michael SIERNOS, Jimmy Lawson, Dkara Brant, Carl J. Adams and Salem Chouchane; Eurofins Professional Scientific Services, Winston-Salem, NC, USA
- 35. THE EFFECT OF DESIGN PARAMETERS ON YIELDS OF 33 HARMFUL AND POTENTIALLY HARMFUL CONSTITUENTS (HPHCS) IN MAINSTREAM SMOKE OF LARGE CIGARS.** Tianrong CHENG, Therese Ku, Scott Wasdo, Samantha Reilly and Charles Feng; Food and Drug Administration, Silver Spring, MD, USA
- 36. DEVELOPMENT AND VALIDATION OF A GC-MS METHOD FOR THE ANALYSIS OF PAHS IN HEATED TOBACCO PRODUCT (HTP) AEROSOLS.** Peter GIBBONS, Daniel Hammond, Jack Thomas and Sally McGuigan; Hall Analytical Laboratories, Manchester, UK
- 37. ELECTROMEMBRANE EXTRACTION FOR NICOTINE DETERMINATION IN AEROSOLS BY HPLC-UV: METHOD DEVELOPMENT AND VALIDATION.** Libin WAN<sup>1</sup>, Mantang Chen<sup>2</sup>, Yaqiong Qin<sup>2</sup>, Sheng Wang<sup>2</sup>, Shaofeng Liu<sup>2</sup>, Ge Zhao<sup>2</sup> and Fuwei Xie<sup>2</sup>; <sup>1</sup>Henan Academy of Sciences, Zhengzhou, Henan, China and <sup>2</sup>Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, Henan, China

- 38. USE OF DISSOLUTION TO CHARACTERIZE AND COMPARE ORAL NICOTINE PRODUCTS.** Helen CYRUS-MILLER<sup>1</sup> and Willie McKinney Jr.<sup>2</sup>; <sup>1</sup>HF Cyrus Miller, Sandston, VA, USA and <sup>2</sup>McKinney Regulatory Science Advisors, Richmond, VA, USA
- 39. PERCEPTIONS OF THE RELATIVE HARM OF ELECTRONIC CIGARETTES COMPARED WITH COMBUSTIBLE CIGARETTES IN THE USA: ANALYSIS OF THE POPULATION ASSESSMENT OF TOBACCO AND HEALTH (PATH) STUDY DATA, 2013-2019.** Xavier CAHOUS, Mengran Guo, Thomas Verron and Grant O'Connell; Imperial Brands, Bristol, UK
- 40. A 12 MONTH STABILITY STUDY ON JUUL MENTHOL FLAVOURED AEROSOLS USING TWO NON-TARGETED ANALYTICAL METHODS.** Mark CROSSWHITE, Lena N. Jeong, Patrick C. Bailey, J. Brian Jameson, Anastasia Lioubomirov, David Cook, Clarissa Yang, Adam Ozvald, Matthew Lyndon and I. Gene Gillman; Juul Labs, Washington, DC, USA
- 41. INTENTION TO PURCHASE MULTIPLE E-CIGARETTE FLAVORS AND ITS EFFECT ON PROJECTED USE RATE ACROSS TOBACCO USER AND NONUSER GROUPS.** Kimberly FROST-PINEDA<sup>1</sup>, Michael Polster<sup>2</sup>, Robyn Chae<sup>2</sup>, Nicole Dianno<sup>2</sup> and Robert Freeland<sup>1</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>Naxion, Philadelphia, PA, USA

## MONDAY AFTERNOON, SEPTEMBER 12, 2022

### SYMPOSIUM PANEL

**Are dual users of cigarettes and smoke-free products all the same?**

**The continuum of dual use behavior.**

*Session Chair: Mohamadi Sarkar*

**1:45PM – 3:30PM**

- 42. INTRODUCTIONS and OPENING REMARKS.** Mohamadi SARKAR; Altria Client Services, Richmond, VA, USA
- 43. IS “DUAL USE” AN EFFECTIVE HARM REDUCTION STRATEGY? A PUBLIC HEALTH PERSPECTIVE.** Maciej GONIEWICZ; Roswell Park Comprehensive Cancer Center, Buffalo, NY, USA
- 44. DUAL USE OF ENDS AND CIGARETTES: BEHAVIORAL TRAJECTORIES.** Arielle SELYA and Saul Shiffman; Pinney Associates, Bethesda, MD, USA
- 45. NOT ALL DUAL TOBACCO USE IS THE SAME: EVIDENCE FROM TOBACCO USE BEHAVIOR AND EXPOSURE.** Pavel N. LIZHNYAK; Altria Client Services, Richmond, VA, USA

46. **DISCUSSANT**; Jasjit S. AHLUWALIA; Brown University School of Public Health, Providence, RI, USA

## **PANEL DISCUSSION & AUDIENCE Q&A**

### **Break**

#### **Session A**

##### **Reduced Risk and Dual Use**

*Session Chair: Ian Fearon*

**3:50PM**

**47. REDUCED RISK CLAIMS COMPREHENSION AND RISK PERCEPTIONS IN ADULT TOBACCO USERS AND NONUSERS FOR AN ORAL TOBACCO-DERIVED NICOTINE PRODUCT AFTER EXPOSURE TO PROMOTIONAL MATERIALS.**

Diana MCKINNEY, Jennifer N. Lewis and Elizabeth A. Becker; Altria Client Services, Richmond, VA, USA

**4:10PM**

**48. IMPACT OF REDUCED RISK CLAIMS ON BEHAVIORAL INTENTIONS FOR AN ORAL TOBACCO-DERIVED NICOTINE POUCH PRODUCT.**

Elizabeth BECKER and Jennifer N. Lewis; Altria Client Services, Richmond, VA, USA

**4:30PM**

**49. COMPLETE OR PARTIAL SWITCHING FROM COMBUSTIBLE CIGARETTES TO THE RELX INFINITY ELECTRONIC NICOTINE DELIVERY SYSTEM (ENDS) OVER 8 WEEKS RESULTS IN LOWER EXPOSURE TO HARMFUL AND POTENTIALLY HARMFUL CONSTITUENTS**

#### **Session B**

##### **Oral Product Method**

##### **Development & Characterization**

*Session Chair: Karl Wagner*

**3:50PM**

**51. COMPARISON OF TWO APPARATUSES FOR NICOTINE DISSOLUTION TESTING IN SMOKELESS TOBACCO AND TOBACCO-FREE NICOTINE CONTAINING PORTIONED PRODUCTS.**

Nolan SPANN<sup>1</sup>, Candice K. Cunningham<sup>1</sup>, Taryn L. Winner<sup>1</sup> and Vivek Shah<sup>2</sup>; <sup>1</sup>R.J. Reynolds Tobacco Company, Winston-Salem, NC, USA and <sup>2</sup>Sotax Corporation, Westborough, MA, USA

**4:10PM**

**52. REAL-TIME MONITORING OF NICOTINE RELEASE FROM ORAL NICOTINE POUCHES USING A NOVEL BIORELEVANT DISSOLUTION METHOD.**

Matthias KNOPP<sup>1</sup> and Mikael Staaf<sup>2</sup>; <sup>1</sup>Bioneer A/S, Copenhagen, Capital Region, Denmark and <sup>2</sup>Swedish Match AB, Stockholm, Sweden

**4:30PM**

**53. NICOTINE PHARMACOKINETICS AND ABUSE LIABILITY ASSESSMENT OF VELO ORAL NICOTINE POUCHES.**

Milly KANOBE, Patrudu S. Makena, Jason S. Hong, Kristen N. Prevette, Sarah A. Ayoku, Janyra Williams and Sarah A. Baxter-Wright; RAI Services Company, Kernersville, NC, USA

**(HPHCS) FOUND IN CIGARETTE SMOKE.** Donald GRAFF<sup>1</sup>, Sabrina Ciric<sup>2</sup>, Erica Nachi<sup>2</sup>, Kirk Newland<sup>2</sup> and Yuli Xie<sup>2</sup>; <sup>1</sup>Cheerain HK Limited, Hong Kong, China and <sup>2</sup>Celerion, Lincoln, NE, USA

**4:50PM**

**50. A RANDOMIZED, CONTROLLED, OPEN-LABEL, IN-CLINIC STUDY EVALUATING CHANGES IN BIOMARKERS OF EXPOSURE IN ADULT SMOKERS WHO SWITCH TO ON! NICOTINE POUCHES FOR SEVEN DAYS.** Jesse RENSCH, Jeffery S. Edmiston, Jingzhu Wang, Xiaohong Jin and Mohamadi Sarkar; Altria Client Services, Richmond, VA, USA

**4:50PM**

**54. MEDIUM/LONG TERM VARIABILITY OF MOIST SMOKELESS TOBACCO PRODUCTS FROM THE UNITED STATES MARKETPLACE.** Michael MORTON, Raquel Olegario, Erica Sena and Karl Wagner; Altria Client Services, Richmond, VA, USA

**Adjourn**

**TUESDAY MORNING, SEPTEMBER 13, 2022**

**Session A**  
**E-Cigarettes Methods**  
**Development & Characterization**  
*Session Chair: Chris Junker*

**Session B**  
**Tobacco & Agronomy**  
*Session Chair: Rana Tayyarah*

**8:00AM**

**55. NON-TARGETED ANALYSIS OF ENDS – CHALLENGES, CONSIDERATIONS AND BEST PRACTICES.** Lena JEONG, M.R. Crosswhite, J.B. Jameson, M. Lyndon, D.K. Cook and I.G. Gillman; Juul Labs, Washington, DC, USA

**8:00AM**

**61. IMPACT OF HARVEST TIMING ON YIELD, LEAF QUALITY, ALKALOIDS, AND TOBACCO-SPECIFIC NITROSAMINES IN BURLEY TOBACCO IN TENNESSEE.** Mitchell RICHMOND; University of Tennessee, Knoxville, TN, USA



**8:25AM**

**56. DETERMINATION OF PARTICLE SIZE DISTRIBUTION FROM E-VAPOUR PRODUCTS USING THE DEKATI EDILUTER™ PRO AND ELPI®+ SYSTEM.** Peter JOZA, Angel Rodriguez-Lafuente and Hossein Bazargan; Labstat International, Kitchener, ON, Canada

**8:45AM**

**57. EFFECTS OF ION MOBILITY, LC SEPARATION, AND MASS SPECTROMETRY ON QUANTITATION OF WATER-SOLUBLE B VITAMINS IN MARKET PRODUCT VAPOR DEVICES.** Owen BUSSEY; R.J. Reynolds Tobacco, Winston Salem, NC, USA

**9:05AM**

**58. PARTIAL VAPOR PRESSURE, ACTIVITY, ACTIVITY COEFFICIENT AND HENRY'S LAW VAPORIZATION CONSTANT AT 25 °C OF NICOTINE FROM BINARY MIXTURES WITH GLYCERIN AND WITH PROPYLENE GLYCOL.** F. Kelley ST. CHARLES<sup>1</sup> and Serban C. Moldoveanu<sup>2</sup>; <sup>1</sup>St. Charles Consultancy, Lewisville, NC, USA and <sup>2</sup>R. J. Reynolds Tobacco, Winston-Salem, NC, USA

**9:25AM**

**59. HPHC MARKET MAP OF OPEN POD-BASED AND CLOSED POD-BASED E-CIGARETTES FROM THE NORTH AMERICAN MARKET INCLUDING A COMPARISON OF SELECTED ANALYTE YIELD IN THE AEROSOL TO 3R4F CIGARETTE SMOKE.** Thomas COCCIARDI, A.M.

**8:25AM**

**62. PRODUCING LOW ALKALOID FLUE-CURED TOBACCO – EFFECTS OF CULTIVAR SELECTION AND MANAGEMENT PRACTICES.** Matthew VANN; NC State University, Raleigh, NC, USA

**8:45AM**

**63. AGRONOMIC PERFORMANCE OF ULTRA-LOW NICOTINE CRISPR LINES.** Anne FISHER<sup>1</sup>, Barunava Patra<sup>1</sup>, Colin Fisher<sup>1</sup>, Huihua Ji<sup>1</sup>, Xuguo Zhou<sup>1</sup>, Jeffrey Kinney<sup>1</sup> and Shengming Yang<sup>2</sup>; <sup>1</sup>University of Kentucky, Lexington, KY, USA and <sup>2</sup>USDA, Fargo, ND, USA

**9:05AM**

**64. ANALYSIS OF TOBACCO LEAF TRANSCRIPTOMES REVEALS DIFFERENTIAL INFLUENCES OF KCL AND K2SO4 ON TOBACCO-SPECIFIC NITROSAMINE (TSNA) FORMATION.** Sanjay Kumar SINGH, Sitakanta Pattanaik, Adrea Keeney, Andy Bailey, Bob Pearce and Ling Yuan; University of Kentucky, Lexington, KY, USA

**9:25AM**

**65. HIGH-YIELD PRODUCTION OF TAXADIENE IN CHLOROPLAST-TRANSFORMED TOBACCO.** ZHANG Jianfeng<sup>1</sup>, Zheng Qingxia<sup>1</sup>, Xu Yalong<sup>1</sup>, Xie Xiaodong<sup>1</sup>, Liu Pingping<sup>1</sup>, Wu Mingzhu<sup>1</sup>, Wang Zhong<sup>1</sup>, Cai Changchun<sup>2</sup>, Yang Jun<sup>1</sup> and Cao Peijian<sup>1</sup>; <sup>1</sup>Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China and

Ozvald, J.B. Jameson, J. Wang, A.L.  
Bates, S. Ullah, C. Yang, L.N. Jeong,  
D.K. Cook and I.G. Gillman; Juul Labs,  
Washington, DC, USA

<sup>2</sup>Tobacco Research Institute of Hubei  
Province, Wuhan, China

**9:45AM**

**60. A 12 -MONTH STABILITY  
STUDY ON JUUL2 VIRGINIA  
TOBACCO AND CRISP MENTHOL  
FLAVOURED AEROSOLS USING  
TARGETED ANALYTICAL  
METHODS.** David COOK, L.N. Jeong,  
J. Wang, A.L. Bates, S. Ullah, K.C  
Carter and V. Schwartz; Juul Labs,  
Washington, DC, USA

**9:45AM**

**66. STRIGOLACTONE/NTCCD8  
REGULATES LEAF ANGLE  
THROUGH BRASSINOSTEROID IN  
TOBACCO.** Lin WANG, Xiaodong Xie,  
Chen Wang, Yalong Xu, Zhaopeng Luo,  
Zhong Wang, Jun Yang and Peijian Cao;  
Zhengzhou Tobacco Research Institute of  
CNTC, Zhengzhou, Henan, China

**Break**

**TUESDAY AFTERNOON, SEPTEMBER 13, 2022**

**SYMPOSIUM PANEL**

**Flavored smoke-free products – Are they necessary?**

*Session Chair: Mohamadi Sarkar*

**10:25AM – 12:05PM**

**67. INTRODUCTIONS AND OPENING REMARKS.** Mohamadi SARKAR;  
Altria Client Services, Richmond, VA, USA

**68. A QUESTION OF TASTE: THE PUBLIC HEALTH CASE FOR  
FLAVORED NICOTINE PRODUCTS.** Guy BENTLEY; Reason Foundation,  
Washington, DC, USA

**69. PUBLIC HEALTH CONCERNS RELATED TO UNDERAGE USE OF  
FLAVORED SMOKE-FREE TOBACCO PRODUCTS.** Andrea  
VANSICKEL; Altria Client Services, Richmond, VA, USA

**70. THE ROLE OF FLAVORS IN MIGRATING SMOKERS TO  
ALTERNATIVE NICOTINE PRODUCTS.** Sarah A. BAXTER; RAI Services  
Company, Winston-Salem, NC, USA

**71. DISCUSSANT.** Mohamadi SARKAR; Altria Client Services, Richmond, VA,  
USA

**PANEL DISCUSSION & AUDIENCE Q&A**

**12:05PM      Lunch**

**1:00PM      Poster Session**

- 72. ENDS DEVICE DESIGN CONTROL.** Lise FRAISSINET, Bryan Burd, Kevin Burd, Ed Carmines and Manoj Misra; Chemular Inc, Hudson, MI, USA
- 73. SALT VS. FREE-BASE NICOTINE IN E-LIQUIDS DOES NOT IMPACT NICOTINE PLASMA LEVELS.** Ed CARMINES<sup>1</sup>, Karen Carmines<sup>1</sup>, Lise Fraissinet<sup>1</sup> and Naama Levy-Cooperman<sup>2</sup>; <sup>1</sup>Chemular Inc, Hudson, MI, USA and <sup>2</sup>Altrees Research Partners, Toronto, ON, Canada
- 74. ACTUAL USER TESTING OF E-CIGARETTE AGE GATING TECHNOLOGY.** Ed CARMINES<sup>1</sup>, Lise Fraissinet<sup>1</sup> and Azure Steele<sup>2</sup>; <sup>1</sup>Chemular Inc, Hudson, MI, USA and <sup>2</sup>M/A/R/C<sup>®</sup> Research, Irving TX, USA
- 75. SIMULATED USER TESTING OF E-CIGARETTE AGE GATING TECHNOLOGY.** Ed CARMINES<sup>1</sup>, Lise Fraissinet<sup>1</sup> and Azure Steele<sup>2</sup>; <sup>1</sup>Chemular Inc, Hudson, MI, USA and <sup>2</sup>M/A/R/C<sup>®</sup> Research, LLC, Irving TX, USA
- 76. COMPARISON OF CNT SYNTHETIC AND TOBACCO DERIVED NICOTINE.** Ed CARMINES, Bryan Burd and Kevin Burd; Chemular Inc, Hudson, MI, USA
- 77. ANALYSIS OF AROMATIC ALDEHYDES IN E-VAPOR PRODUCTS BY GC-MS/MS.** Leona SIRKISOON, Lewhy Via, Jeff Zhu, and Rana Tayyarah; ITG Brands, Greensboro, NC, USA
- 78. ANALYSIS OF GLYCIDOL IN E-VAPOR PRODUCTS BY GC-MS.** Jeff ZHU, Kaylee Campbell, Kristin Pruitt and David Skinner; ITG Brands, Greensboro, NC, USA
- 79. ANALYSIS OF SELECTED ORGANIC ACIDS IN E-LIQUIDS BY ION CHROMATOGRAPHY.** Jeff ZHU, Gwen Hagerty, Erin Snead and David Skinner; ITG Brands, Greensboro, NC, USA
- 80. GLUCATELL<sup>®</sup> METHOD TO ASSESS THE LEVELS OF B-(1,3)-GLUCAN IN E-LIQUID AND AEROSOL SAMPLES.** Pavan ADISESHAIAH, Deb Czarnecki, David Cook, Gene Gillman and Dan Myers; Juul Labs, Washington, DC, USA
- 81. SIMULTANEOUS DETERMINATION OF 9 ORGANIC ACIDS IN E-LIQUIDS AND AEROSOLS BY ION CHROMATOGRAPHY.** Lillian LI<sup>1</sup>, Manali Aggarwal<sup>2</sup>, Jason Chan<sup>2</sup>, Huan Wang<sup>2</sup>, Kate Pearce<sup>2</sup> and Dan Myers<sup>2</sup>; <sup>1</sup>Juul Labs, Mountain View, CA, USA and <sup>2</sup>Juul Labs, Washington, DC, USA

82. **QUANTIFICATION OF SOLID PARTICULATES IN E-LIQUID AND AEROSOL IN REFERENCE CIGARETTE AND A VARIETY OF ELECTRONIC NICOTINE DELIVERY SYSTEMS (ENDS).** Lillian LI, Huan Wang, Jason Chan, Kate Pearce, Gene Gillman and Dan Myers; Juul Labs, Washington, DC, USA
  
83. **GLYCIDOL MEASUREMENTS IN REFERENCE CIGARETTE SMOKE USING DIRECT INJECTION GAS CHROMATOGRAPHY COUPLED TO MASS SPECTROMETRY.** Valerie SCHWARTZ, K.M Carter, A.M. Ozvald, D.K. Cook and I.G. Gillman; Juul Labs, Washington, DC, USA
  
84. **IN VITRO ASSESSMENT OF INTERNATIONAL JUUL2 PRODUCTS.** Roxana WEIL, J. Yao, K. Demir, G. Lalonde, M.J. Oldham; Juul Labs, Washington, DC, USA
  
85. **HPHC MARKET MAP OF CLOSED POD-BASED E-CIGARETTES FROM THE NORTH AMERICAN MARKET: CHARACTERIZATION OF AEROSOL CARBONYLS.** Adam OZVALD, Thomas S. Cocciardi, J. Brian Jameson, Jiaming Wang, Austin L. Bates, Cameron R. Smith, Clarissa Yang, Lena N. Jeong, David K. Cook and I. Gene Gillman; Juul Labs, Washington, DC, USA
  
86. **HPHC MARKET MAP OF OPEN POD-BASED E-CIGARETTES FROM THE NORTH AMERICAN MARKET: CHARACTERIZATION OF AEROSOL METALS.** Austin BATES, Sifat Ullah, Thomas S. Cocciardi, Adam M. Ozvald, J. Brian Jameson, Jiaming Wang, Cameron R. Smith, Clarissa Yang, Lena N. Jeong, David K. Cook and I. Gene Gillman; Juul Labs, Washington, DC, USA
  
87. **HPHC MARKET MAP OF CLOSED POD-BASED E-CIGARETTES FROM THE NORTH AMERICAN MARKET: CHARACTERIZATION OF AEROSOL METALS.** Cameron SMITH, T.S. Cocciardi, A.M. Ozvald, J.B. Jameson, J. Wang, A.L. Bates, S. Ullah, C. Yang, L.N. Jeong, D.K. Cook and I.G. Gillman; Juul Labs, Washington, DC, USA
  
88. **HPHC MARKET MAP OF OPEN POD-BASED E-CIGARETTES FROM THE NORTH AMERICAN MARKET: CHARACTERIZATION OF AEROSOL CARBONYLS.** Jiaming WANG, T.S. Cocciardi, A.M. Ozvald, J.B. Jameson, A.L. Bates, S. Ullah, C.R. Smith, C. Yang, L.N. Jeong, D.K. Cook and I.G. Gillman; Juul Labs, Washington, DC, USA
  
89. **A COMPARISON OF METHODS FOR THE QUANTIFICATION OF TOBACCO-SPECIFIC NITROSAMINES (TSNAs) VIA LC-MS/MS.** Navid ADNANI, Pavan Adisheshaiah and Dan Myers; Juul Labs, Washington, DC, USA

- 90. TARGETED CHEMICAL CHARACTERIZATION OF JUUL<sup>2</sup>® PRODUCT AEROSOL AND COMPARISON WITH 3R4F REFERENCE CIGARETTE SMOKE.** Karen CARTER, D.K. Cook, V. Schwartz, A.L. Bates, S. Ullah, J. Wang and I.G. Gillman; Juul Labs, Washington, DC, USA
- 91. REPLACEMENT OF HELIUM CARRIER GAS WITH HYDROGEN CARRIER GAS FOR THE GC ANALYSIS OF NICOTINE AND WATER.** Andrew HUCKINS, Darren Steelman, Gwendolyn Hagerty and T Jeffrey Clark; Liggett Group, Mebane, NC, USA
- 92. METHOD VALIDATION TO QUANTITATE SMOKE CONSTITUENTS IN ENVIRONMENTAL TOBACCO SMOKE FROM A HEATED TOBACCO PRODUCT AND COMBUSTIBLE CIGARETTES.** Eckhardt SCHMIDT, Gary M. Dull, John Darnell, Buddy G. Brown (Contractor) and Sarah Baxter-Wright; RAI Services Company, Winston Salem, NC, USA
- 93. IN VITRO CYTOTOXICITY ASSESSMENT OF WHOLE AEROSOL/ SMOKE GENERATED FROM HEATED TOBACCO PRODUCTS AND COMBUSTIBLE CIGARETTES IN THE EPIAIRWAY TISSUE MODEL.** John WERTMAN<sup>1</sup>, Tom Shutsky<sup>1</sup>, Brian M. Keyser<sup>1</sup>, Kristen Jordan<sup>1</sup> and Michael Hollings<sup>2</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>Labcorp Early Development Laboratories, Harrogate, UK
- 94. ACTUAL USE STUDY OF AN ORAL NICOTINE POUCH PRODUCT.** Patrudu MAKENA<sup>1</sup>, Erin Evans<sup>1</sup>, Chris Campbell<sup>1</sup>, Peter Chen<sup>1</sup>, Hsiao-Pin Liu<sup>1</sup>, Leanne Campbell<sup>1</sup>, Kristen Prevette<sup>1</sup>, Sarah Baxter<sup>1</sup>, Rachel Hart<sup>2</sup>, Mandara Shetty<sup>2</sup>, Krishna Prasad<sup>2</sup>, Janyra Williams<sup>3</sup>, Michael Feehan<sup>4</sup>, Jenny Cai<sup>4</sup>, Jennifer Lyden<sup>4</sup> and Claudia Kanitscheider<sup>5</sup>; <sup>1</sup>RAI Services Company, Winston Salem, NC, USA, <sup>2</sup>British American Tobacco, Southampton, UK, <sup>3</sup>RAI Services Company (contractor), Winston-Salem, NC, USA, <sup>4</sup>Cerner Enviza, Kansas City, MO, USA and <sup>5</sup>Cerner Enviza, Munich, Germany
- 95. LONGITUDINAL ANALYSIS ON THE EFFECT OF E-CIGARETTE USE ON CIGARETTE SMOKING USING THE PATH ADULT STUDY.** Emery NGAMASANA<sup>1</sup>, Red Thaddeus D. Miguel<sup>2</sup>, David Huang (Intern)<sup>1</sup>, John W. Caraway<sup>1</sup> and Mimi Kim<sup>1</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>Thera-Business, Kanata, ON, Canada
- 96. GENOTOXICITY ASSESSMENT OF HEATED TOBACCO PRODUCT AND COMBUSTIBLE CIGARETTE AEROSOLS IN THE AMES AND IN VITRO MICRONUCLEUS ASSAYS.** Kendall SZELIGA<sup>1</sup>, John Wertman<sup>1</sup>, Kristen Jordan<sup>1</sup>, Dhatri Lakshmanan<sup>2</sup>, Dariush Lavani<sup>2</sup> and Ian Crooks<sup>3</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA, <sup>2</sup>Labstat International, Kitchner, ON, Canada and <sup>3</sup>BAT, Southampton, UK

- 97. DISTINGUISHING TOBACCO-DERIVED NICOTINE FROM SYNTHETIC NICOTINE IN COMMERCIAL NICOTINE SAMPLES.** Gary DULL<sup>1</sup>, Serban C. Moldoveanu<sup>2</sup> and Karen B. Kilby<sup>2</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>R.J. Reynolds Tobacco Company, Winston-Salem, NC, USA
- 98. A SEARCH FOR NOVEL, CRYSTALLINE NICOTINE SALTS AND COCRYSTALS.** Gary DULL<sup>1</sup>, Andrew Carr<sup>2</sup> and Emma Sharp<sup>3</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA, <sup>2</sup>Charles River Laboratories, Essex, UK and <sup>3</sup>Johnson Matthey Pharmorphix<sup>®</sup>, Cambridge, UK
- 99. A STUDY DESIGN OF A SINGLE-CENTER, OPEN-LABEL, PARALLEL-COHORT STUDY TO EVALUATE ENVIRONMENTAL TOBACCO SMOKE CONSTITUENTS FROM A HEATED TOBACCO PRODUCT AND COMBUSTIBLE CIGARETTES.** Gary DULL, John Darnell, Milly Kanobe, Eckhardt Schmidt, Sarah Baxter-Wright and Buddy G. Brown (Contractor); RAI Services Company, Winston-Salem, NC, USA
- 100. A TWO-ARM RANDOMIZED, WITHIN-ARM CROSSOVER STUDY IN CONFINEMENT TO ASSESS ABUSE LIABILITY OF GLO HEATED TOBACCO PRODUCTS.** Kyung-soo (Jason) HONG, Kristen Prevette, Peter Chen, Eckhardt Schmit, Shana Burns, Patrudu Makena and Sarah A. Baxter-Wright; RAI Services Company, Winston-Salem, NC, USA
- 101. A SINGLE ARM, RANDOMIZED CROSS OVER STUDY IN CONFINEMENT TO ASSESS ABUSE LIABILITY AND NICOTINE PHARMACOKINETICS OF VUSE ALTO ENDS.** Kyung-soo (Jason) HONG, Kristen Prevette, Gwyn Gibson, Herman Krebs, Eckhardt Schmidt, Tao Jin, Sarah Ayoku, Tom Kirby, Patrudu Makena and Sarah A. Baxter-Wright; RAI Services Company, Winston-Salem, NC, USA
- 102. THE USE OF CONNECTED DEVICES IN HUMAN RESEARCH.** Robert UNDERLY<sup>1</sup>, Bradley Brown<sup>2</sup> and Sarah Baxter-Wright<sup>1</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>Carolina Medical Electronics, East Bend, NC, USA
- 103. CYTOTOXICITY ASSESSMENT OF HEATED TOBACCO PRODUCT AND COMBUSTIBLE CIGARETTE AEROSOLS UTILIZING WHOLE AEROSOL EXPOSURE IN THE NEUTRAL RED UPTAKE ASSAY.** Kristen JORDAN<sup>1</sup>, Robert Leverette<sup>1</sup>, Thomas Shutsky<sup>1</sup> and Rebecca Payne<sup>2</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>Labcorp Early Development Laboratories, Harrogate, UK
- 104. TOBACCO HARM REDUCTION: A CHEMISTRY PERSPECTIVE OF THE RISK CONTINUUM.** Carlton BEQUETTE; R.J. Reynolds Tobacco Company, Winston-Salem, NC, USA

- 105. ASSOCIATION BETWEEN INITIAL SOME DAYS OR EVERY DAY USE OF E-CIGARETTES AND SUBSEQUENT REGULAR CIGARETTE SMOKING AMONG ADULTS.** Red Thaddeus MIGUEL<sup>1</sup>, Emery L. Ngamasana<sup>2</sup>, Mimi M. Kim<sup>2</sup> and Geoffrey M. Curtin<sup>3</sup>; <sup>1</sup>Thera-Business, Kanata, ON, Canada, <sup>2</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>3</sup>Womble Bond Dickinson, Winston-Salem, NC, USA

### **Session A**

#### **Perception & Behavior Studies**

*Session Chair: Tiffany Parmis*

**1:45PM**

**106. FDA-CTP AND CDISC PROJECT TO DEVELOP TOBACCO RELATED STANDARDS TO ACHIEVE EFFICIENCIES FOR ALL STAKEHOLDERS.** Rhonda FACILE<sup>1</sup> and Amy Malla<sup>2</sup>; <sup>1</sup>CDISC, Austin, TX, USA and <sup>2</sup>U.S. Food and Drug Administration, Silver Spring, MD, USA

**2:10PM**

**107. ASSESSING THE US POPULATION HEALTH IMPACT OF INTRODUCING A NEW E-CIGARETTE PRODUCT TO MARKET USING INTENTIONS TO USE DATA.** Thomas VERRON, Mengran Guo, Thomas Nahde, Grant O'Connel and Xavier Cahours; Imperial Brands, Bristol, UK

**2:30PM**

**108. SOCIAL AND BEHAVIORAL SCIENCE RESEARCH: BEST PRACTICES & METHODOLOGICAL CONSIDERATIONS FOR INDUSTRY.** Jessica ZDINAK<sup>1</sup> and James Grice<sup>2</sup>; <sup>1</sup>Applied Research and Analysis Consulting, Richmond, VA,

### **Session B**

#### **Oral Product Method Development & Characterization**

*Session Chair: Fraser Williamson*

**1:45PM**

**114. HARMFUL AND POTENTIALLY HARMFUL CONSTITUENTS IN SELECTED NOVEL NICOTINE POUCH PRODUCTS IN COMPARISON WITH TOBACCO BASED NICOTINE DELIVERY PRODUCTS AND PHARMACEUTICAL NICOTINE REPLACEMENT THERAPY PRODUCTS (NRTS).** Johan REDEBY, Susanne Back, Anna Masser, Lars Rutqvist, Johan Lindholm and Johan Redebý; Swedish Match, Stockholm, Sweden

**2:10PM**

**115. NICOTINE CHARACTERIZATION IN MODERN ORAL NICOTINE POUCH PRODUCTS.** Andrew CHEETHAM, Bonnie G. Coffa and Susan E. Plunkett; Enthalpy Analytical, Richmond, VA, USA

**2:30PM**

**116. MODIFIED QuEChERS METHOD FOR THE EXTRACTION OF NICOTINE FROM ORAL TRADITIONAL AND INNOVATIVE TOBACCO PRODUCTS USING UPLC-MS/MS.** Vanessa LOPEZ, Fadi

USA and <sup>2</sup>Oklahoma State University,  
Stillwater, OK, USA

**2:50PM**

**109. ASSESSMENT OF PERCEPTIONS AND INTENTIONS TO USE VITRO AND VITRO-AC ENDS AMONG CURRENT, FORMER AND NON-SMOKERS.** Ian M. FEARON<sup>1</sup>, Christopher Russell<sup>2</sup>, Ryan G. N. Seltzer<sup>3</sup>, Trisha L. Houser<sup>4</sup>, Mitchell Nides<sup>5</sup>, Xiang Gao<sup>6</sup>, Yatao Liu<sup>6</sup> and Fany Guo<sup>7</sup>; <sup>1</sup>whatIF? Consulting, Harwell, Oxfordshire, UK, <sup>2</sup>Russell Burnett Research and Consultancy, Glasgow, UK, <sup>3</sup>Safety in Numbers, Tucson, AZ, USA, <sup>4</sup>Houser Clinical Research Writing and Consulting, Durham, NC, USA, <sup>5</sup>LA Clinical Trials, Burbank, CA, USA, <sup>6</sup>Scientific Horizons Consulting, Irvine, CA, USA and <sup>7</sup>Shenzhen JWEI Electronics Co, Shenzhen, China

Aldeek and John H. Miller; Altria  
Client Services, Richmond, VA, USA

**2:50PM**

**117. TECHNIQUE FOR NICOTINE POLACRILEX ANALYSIS.** Serban MOLDOVEANU; R.J. Reynolds Tobacco Company, Winston-Salem, NC, USA

## Break

**Session A**  
**Toxicology & Public Health**  
*Session Chair: Rana Tayyarah*

**SYMPOSIUM PANEL**  
**FDA Validation and Q&A**  
*Session Chair: Fraser Williamson*

**3:30PM**

**110. REGULATORY AND NON-REGULATORY DRIVERS OF ESG ADOPTION WITHIN THE REDUCED HARM NICOTINE PRODUCTS INDUSTRY.** Gwendolyn LUCHA; Cardno ChemRisk now Stantec, Houston, TX, USA

**3:50PM**

**111. WHERE CIGARETTES SERVE AS CURRENCY...CAN VAPING BE BETTER? REDUCING HARM FOR PEOPLE IN CUSTODY.** Cheryl OLSON; McKinney Regulatory Science Advisors, San Carlos, CA, USA

**3:30PM – 4:50PM**

**118. METHOD VALIDATION GUIDANCE PRACTICES: A COMPREHENSIVE REVIEW OF PROPOSED METHODOLOGY IN ENDS ANALYSIS.** A. PENNINGTON, K. Humphries, I.G. Gillman and Q. Liang; Juul Labs, Washington, DC, USA

**119. FDA'S GUIDANCE ON VALIDATION AND VERIFICATION OF ANALYTICAL TESTING METHODS USED FOR TOBACCO PRODUCTS.** Melis CORAGGIO, Jeffery Ammann and Todd Cecil; FDA Center for Tobacco Products, Calverton, MD, USA



**4:10PM**

**112. STATISTICALLY  
OPTIMIZING YOUTH RISK AND  
SMOKING CESSATION: A  
NOVEL, DATA-DRIVEN  
APPROACH TO EVALUATE  
APPROPRIATENESS FOR THE  
PROTECTION OF PUBLIC**

**HEALTH.** Ryan SELTZER<sup>1</sup>, Jessica Parker-Zdinak<sup>2</sup> and Ian M. Fearon<sup>3</sup>;  
<sup>1</sup>Safety in Numbers, Tucson, AZ, USA,  
<sup>2</sup>Applied Research and Analysis Consulting, Richmond, VA, USA and  
<sup>3</sup>whatIF? Consulting, Harwell, UK

**4:30PM**

**113. ANALYSIS OF TOXICITY  
ASSAY OPTIONS FOR DATA  
POOR CHEMICAL INHALATION  
LIMIT SETTING: FLAVORS AS A  
CASE STUDY.** Melissa VINCENT<sup>1</sup>,

Heidi C O'Neil<sup>2</sup>, Andrew Maier<sup>1</sup>, Amanda N Buerger<sup>1</sup> and Amy K Madl<sup>3</sup>; <sup>1</sup>Cardno ChemRisk now Stantec, Cincinnati, OH, USA, <sup>2</sup>Cardno ChemRisk now Stantec, Boulder, CO, USA and <sup>3</sup>Cardno ChemRisk now Stantec, Orange County, CA, USA

**5:00 PM** – TSRC Business Meeting – All attendees are encouraged to attend.

**6:30 PM** – Reception and Banquet

**Adjourn**

**WEDNESDAY MORNING, SEPTEMBER 14, 2022**

**Session A**  
**Pharmacokinetics & Modeling**  
*Session Chair: TC Deluca*

**Session B**  
**Perception & Behavior Studies**  
*Session Chair: Willie Tran*

**8:30AM**

**123. FORWARD DOSIMETRY  
MODELING OF CIGARETTE  
SMOKE HPHCS IN HUMANS  
USING OPEN-SOURCE PBPK**

**120. DISCUSSANT.** I.G. GILLMAN, Juul Labs, Washington, DC, USA

**121. DISCUSSANT.** Pete JOZA, Labstat International, Kitchener, ON, Canada

**122. DISCUSSANT.** Todd CECIL, FDA CTP, Washington, DC, USA

**PANEL DISCUSSION  
& AUDIENCE Q&A**

**8:30AM**

**133. ACTUAL USE STUDY OF A  
HEATED TOBACCO PRODUCT.**  
Mandara SHETTY<sup>1</sup>, Rachel Hart<sup>1</sup>, Erin Evans<sup>2</sup>, Chris Campbell<sup>2</sup>, Patrudu

**MODELING.** Jingjie ZHANG<sup>1</sup>, K. Monica Lee<sup>2</sup>, David Hines<sup>3</sup>, Bethany Cook<sup>3</sup> and Shannon Bell<sup>3</sup>; <sup>1</sup>ALCS, Glen Allen, VA, USA, <sup>2</sup>Altria Client Services, Richmond, VA, USA and <sup>3</sup>Integrated Laboratory Systems, Morrisville, NC, USA

Makena<sup>2</sup>, Peter Chen<sup>2</sup>, Hsiao-Pin Liu<sup>2</sup>, Leanne Campbell<sup>2</sup>, Janyra Williams<sup>2</sup>, Kristen Prevette<sup>2</sup>, Krishna Prasad<sup>1</sup>, Sarah Baxter<sup>2</sup>, Michael Feehan<sup>3</sup>, Jennifer Lyden<sup>3</sup> and Claudia Kanitscheider<sup>4</sup>; <sup>1</sup>British American Tobacco, Southampton, UK, <sup>2</sup>RAI Services Company, Winston-Salem, NC, USA, <sup>3</sup>Cerner Enviza, Kansas City, MO, USA and <sup>4</sup>Cerner Enviza, Munich, Germany

**8:55AM**

**8:55AM**

**124. NICOTINE PHARMACOKINETICS OF VELO AND VELO MAX NICOTINE POUCHES IN A RANDOMISED CROSS-OVER STUDY.** Michael MCEWAN<sup>1</sup>, Linsey Haswell<sup>1</sup>, Filimon Meichanetzidis<sup>1</sup>, George Hardie<sup>1</sup>, Sarah Baxter-Wright<sup>2</sup> and Tao Jin<sup>2</sup>; <sup>1</sup>British American Tobacco, Southampton, Hampshire, UK and <sup>2</sup>Reynolds American, Winston-Salem, NC, USA

**134. ACTUAL USE PUFFING TOPOGRAPHY AND MOUTH LEVEL EXPOSURE (MLE) TO AEROSOL AND NICOTINE FOR AN EVOLVING SERIES OF ELECTRONIC NICOTINE DEVICE SYSTEMS (ENDS).** Krishna PRASAD, Adam Gray and Lauren Edward; British American Tobacco, Southampton, Hampshire, UK

**9:15AM**

**9:15AM**

**125. PHARMACOKINETICS OF FREEBASE NICOTINE AND NICOTINE SALTS FOLLOWING SUBCUTANEOUS ADMINISTRATION IN RATS.** Hongwei HOU, Ya'ning Fu, Shulei Han, Huan Chen, Yuan Zhang, Ruijuan Miao, Peipei Ren, Pengpeng Yu, Zhihao Shi, Yushan Tian, Hongjuan Wang, Tong Liu and Qingyuan Hu; China National Tobacco Quality Supervision and Test Center, Zhengzhou, Henan, China

**135. PREVALENCE ESTIMATES OF PRODUCT SPECIFIC ENDS USE AMONG A NATIONALLY REPRESENTATIVE SAMPLE OF YOUTH AND ADULTS IN THE UNITED STATES.** Neil MCKEGANEY, Andrea Patton and Gabe Barnard; Centre for Substance Use Research, Glasgow, Scotland

**9:35AM**

**9:35AM**

**126. NRF2 RESPONSES IN A 3D HUMAN AIRWAY MODEL EXPOSED TO WHOLE AEROSOL FROM COMBUSTIBLE CIGARETTES OR HEATED TOBACCO PRODUCTS.** Brian KEYSER<sup>1</sup>, John Wertman<sup>1</sup>, Kristen

**136. CONSUMER-REPORTED OUTCOME MEASURE (CROM) GUIDELINES WITH RESPECT TO DESCRIPTIVE-CROM FOR RESEARCH ON TOBACCO AND NICOTINE-CONTAINING PRODUCTS.** Lai WEI<sup>1</sup> on behalf of

Jordan<sup>1</sup> and Michael Hollings<sup>2</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>2</sup>Labcorp Early Development Laboratories, Harrogate, UK

the CROM Task Force, Mohamadi Sarkar<sup>1</sup>, Emilie Clerc<sup>2</sup>, Christelle Chrea<sup>2</sup>, Mandara Shetty<sup>3</sup>, Krishna Prasad<sup>3</sup>, Mimi Kim<sup>4</sup> and Nicholas Goldenson<sup>5</sup>; <sup>1</sup>Altria Client Services, Richmond, VA, USA, <sup>2</sup>PMI R&D, Philip Morris Products S.A., Neuchâtel, Switzerland, <sup>3</sup>British American Tobacco, Southampton, UK, <sup>4</sup>RAI Services Company, Winston-Salem, NC, USA and <sup>5</sup>Juul Labs, Washington, DC, USA

**9:55AM**

**127. APPLICATION OF PHARMACOKINETIC MODELLING TO PREDICT NICOTINE BLOOD PROFILES ASSOCIATED WITH VARYING E-LIQUID NICOTINE PROTONATION.** Sharlee MORE<sup>1</sup>, Amy Madl<sup>2</sup>, Stephanie Thornton<sup>3</sup> and Kenneth Unice<sup>3</sup>; <sup>1</sup>Cardno ChemRisk, Portland, OR, USA, <sup>2</sup>Cardno ChemRisk, Aliso Viejo, CA, USA and <sup>3</sup>Cardno ChemRisk, Pittsburgh, PA, USA

**9:55AM**

**137. DESIGN OF A MULTI-SITE, OPEN-LABEL, 8-WEEK, PROSPECTIVE OBSERVATIONAL ACTUAL USE STUDY.** Erin EVANS<sup>1</sup>, Rachel Hart<sup>2</sup>, Mandara Shetty<sup>2</sup>, Chris Campbell<sup>1</sup>, Patrudu Makena<sup>1</sup>, Peter Chen<sup>1</sup>, Hsiao-Pin Liu<sup>1</sup>, Leanne Campbell<sup>1</sup>, Janyra Williams<sup>1</sup>, Kristen Prevette<sup>1</sup>, Sarah Baxter<sup>1</sup>, Michael Feehan<sup>3</sup>, Jenny Cai<sup>3</sup>, Jennifer Lyden<sup>3</sup> and Claudia Kanitscheider<sup>4</sup>; <sup>1</sup>RAI Services Company, Winston-Salem, NC, USA, <sup>2</sup>British American Tobacco, Southampton, UK, <sup>3</sup>Cerner Enviza, Kansas City, MO, USA and <sup>4</sup>Cerner Enviza, Munich, Germany

**Break**

**Session A**  
**Product Design & Chemistry**  
*Session Chair: TC Deluca*

**Session B**  
**Water Pipe Methods**  
**Development & Characterization**  
*Session Chair: Willie Tran*

**10:35AM**

**128. MECHANICALLY GENERATED SURFACE STRUCTURES ON TIPPING PAPER AND THEIR EFFECTS ON HAPTIC AND VISUAL CHARACTERISTICS.** Michael LINDNER; Tannpapier GmbH, Traun, Austria

**10:35AM**

**138. AMOUNT/COMPOSITION OF FLUIDS EXPRESSED UNDER PRESSURE FROM CONTEMPORARY DOMESTIC AND OFF-SHORE MANUFACTURED WATERPIPE TOBACCOS AND PARTICLE SIZE DISTRIBUTION  $\pm 5$  MM AS ESTIMATES OF PERFORMANCE OF THESE PRODUCTS DURING**

**EMISSIONS TESTING USING ISO 22486: 2019. PART 1. RATIONALE AND SAMPLE PREPARATION PROCEDURES.** John LAUTERBACH; Lauterbach & Associates, Macon, GA, USA

**10:55AM**

**129. RESEARCH ON MORPHOLOGICAL DETECTION METHOD OF CUT TOBACCO BASED ON TWO-DIMENSIONAL FLUIDIZED BED AND HIGH-SPEED IMAGING**

**TECHNOLOGY.** Wenkui ZHU<sup>1</sup>, Liu Hongkun<sup>1</sup>, Li Bin<sup>1</sup>, Deng Guodong<sup>1</sup>, Su Ziqi<sup>1</sup>, Hejin<sup>2</sup>, Dingding<sup>2</sup> and Zhanghaobo<sup>2</sup>; <sup>1</sup>Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, Henan, China and <sup>2</sup>Shanghai Tobacco Group Company, Shanghai, China

**10:55AM**

**139. AMOUNT/COMPOSITION OF FLUIDS EXPRESSED UNDER PRESSURE FROM CONTEMPORARY DOMESTIC AND OFF-SHORE MANUFACTURED WATERPIPE TOBACCOS AND PARTICLE SIZE DISTRIBUTION  $\pm 5$  MM AS ESTIMATES OF PERFORMANCE OF THESE PRODUCTS DURING EMISSIONS TESTING USING ISO 22486: 2019. PART 2. TESTING PROCEDURES AND RESULTS.** John LAUTERBACH; Lauterbach & Associates, Macon, GA, USA

**11:15AM**

**130. RESEARCH ON XGBOOST MODEL BASED MACHINE LEARNING INVERSE PREDICTION ALGORITHM FOR TAR QUANTIFICATION.**

Jian ZHOU<sup>1</sup>, Liu Yanju<sup>1</sup>, Li Xiaopeng<sup>1</sup>, Shi Fengcheng<sup>1</sup>, Zhang Xiaolin<sup>1</sup>, Huang Xin<sup>1</sup>, Zou Yuanwen<sup>2</sup>, He Gang<sup>3</sup>, Nie Cong<sup>4</sup> and Sun Xuehui<sup>4</sup>; <sup>1</sup>China Tobacco Sichuan Industrial, Chengdu, Sichuan, China, <sup>2</sup>Sichuan University, Chengdu, Sichuan, China, <sup>3</sup>Southwest University of Science and Technology, Mianyang, Sichuan, China and <sup>4</sup>Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, Henan, China

**11:15AM**

**140. DEVELOPMENT OF AN ELECTRICALLY HEATED PHUNNEL BOWL FOR USE WITH WATERPIPE TOBACCOS.** John LAUTERBACH; Lauterbach & Associates, Macon, GA, USA

**11:35AM**

**11:35AM**

**131. THE EFFECT OF ETHYL  
PALMITATE ON THE RELEASE OF  
AROMA COMPOUNDS IN THE  
PROPANEDIOL-ETHANOL  
SOLUTION AND ITS MECHANISM.**

Hui XI; Zhengzhou Tobacco Research  
Institute of CNTC, Zhengzhou, Henan,  
China

**141. PREPARATION AND  
TESTING OF REFERENCE  
PRODUCTS FOR EVALUATION  
OF WATERPIPE TOBACCOS. John  
LAUTERBACH; Lauterbach &  
Associates, Macon, GA, USA**

**11:55AM**

**132. DETERMINATION OF 21  
SENSORY AMIDES IN  
MAINSTREAM CIGARETTE  
SMOKE BY GAS  
CHROMATOGRAPHY-TANDEM  
MASS SPECTROMETRY  
COMBINED WITH DISPERSIVE  
SOLID PHASE EXTRACTION.**

Lining PAN; Zhengzhou Tobacco  
Research Institute of CNTC, Zhengzhou,  
Henan, China

**Adjourn**