

GENERAL PROGRAM

Sunday, September 8, 2024

2:00PM – 6:00PM	Registration	Ballroom Foyer
2:00PM – 6:00PM	Speaker Ready Room	Planner Office
2:00PM – 3:00PM	Contemporary waterpipes, waterpipe accessories, and waterpipe tobaccos. (W1-3, listing on page 31)	Oakwood
	John Lauterbach; Lauterbach & Associates	
3:00PM – 5:00PM	The University of Kentucky Center for Tobacco Reference Products Workshop. (W4-7, listing on page 31)	Maplewood
	Huihua Ji, Stacey Slone, Ruth McNees; University of Kentucky	
4:00PM – 6:00PM	Ownit Reception	Ballroom Foyer
6:30PM – 9:30PM	Welcome Reception <i>Hosted by SWM International</i>	The Backyard

Monday, September 9, 2024

7:15AM – 8:30AM	U.S. TAG: ISO/TC 126 Breakfast	Maplewood
7:30AM – 5:00PM	Registration	Ballroom Foyer
7:30AM – 5:00PM	Speaker Ready Room	Planner Office
8:00AM – 8:45AM	Session Chairs Breakfast	Oakwood A
8:30AM – 9:00AM	Morning Coffee	Ballroom Foyer
9:00AM – 11:30 AM	Symposium: Tobacco Harm Reduction: What Have We Learned and How Do We Move Forward?	Ravinia Ballroom
10:15AM – 10:35AM	Break	Ballroom Foyer
11:30AM – 1:00PM	Lunch	Dunwoody
12:30PM – 2:00PM	Poster Session (#7-38)	Ballroom Foyer
2:00PM – 3:30PM	Panel Discussion: Weight of the Evidence: Assessing the Benefits of Smokefree Alternatives to Adults who smoke and the Risk of Underage Initiation.	Ravinia D
3:30PM – 4:00PM	Break	Ballroom Foyer
4:00PM – 5:45PM	Session A: Regulatory and Public Health	Ravinia D
1:55PM – 4:00PM	Session B: Consumer Reported Outcome Measures	Ravinia A-C

Tuesday, September 10, 2024

7:30AM – 5:00PM	Speaker Ready Room	Planner Office
8:00AM – 8:45AM	Morning Coffee	Ballroom Foyer
8:45AM – 10:10AM	Planal Discussion: Advancing Science-Based Consensus Standards for Nicotine Pouches in the US: Pathway to Regulatory and Public Health Synergy.	Ravinia D
8:45AM – 10:10AM	Session B: Agronomy	Ravinia A-C
10:10AM – 10:30AM	Break	Ballroom Foyer
10:30AM – 12:15PM	Session A: ENDS Use Behavior	Ravinia D
10:30AM – 12:15PM	Session B: Method or Process Development	Ravinia A-C
12:15PM – 1:30PM	Lunch	Dunwoody
12:15PM – 2:00PM	Policy Committee Lunch	Azalea
1:00 PM – 2:30PM	Poster Session (#39-70)	Ballroom Foyer
2:30PM – 4:15PM	Panel Discussion: Tobacco Harm Reduction Success Stories: How Countries are embracing Smokeless Alternatives and Their Impact on Smoking.	Ravinia D
2:30PM – 5:15PM	Session B: Product Characterization	Ravinia A-C
4:15PM – 4:35PM	Break	Ballroom Foyer
5:15PM – 6:00PM	TSRC Business Meeting	Ravinia A-C
6:30PM – 10:00PM	Social Hour and Award Banquet	Ballroom Foyer

Wednesday, September 11, 2024

7:30AM – 12:00PM	Speaker Ready Room	Planner Office
8:00AM – 8:45AM	Morning Coffee	Ballroom Foyer
8:45AM – 10:10AM	Session A: Clinical Studies & Biomarkers	Dunwoody
8:45AM – 10:10AM	Session B: Method or Process Development	Ravinia A-C
10:10AM – 10:30AM	Break	Ballroom Foyer
10:30AM – 12:15PM	Session A: Toxicology	Dunwoody
10:30AM – 12:15PM	Session B: HTP Use Behavior	Ravinia A-C
12:15PM – 1:15PM	Lunch (take away available)	Ballroom Foyer
1:15PM – 2:00PM	Session A: Product Characterization	Dunwoody
1:15PM – 2:40PM	Session B: Agronomy	Ravinia A-C

ADJOURN

Panel Discussion

Session Chair: Elizabeth Becker

2:00 PM 71 **WEIGHT OF THE EVIDENCE: ASSESSING THE BENEFITS OF SMOKEFREE ALTERNATIVES TO ADULTS WHO SMOKE AND THE RISK OF UNDERAGE INITIATION.**

Elizabeth BECKER; Altria Client Services, Richmond, VA, USA

Benjamin Apelberg; CTP FDA, Washington, DC, USA

Tiffany Parms; RAI Services Company, Winston-Salem, NC, USA

Kate Vergara; Altria Client Services, Richmond, VA, USA

Agustin Rodriguez; Troutman Pepper, Richmond, VA, USA

3.30 PM

BREAK

Session A: Regulatory & Public Health

*Session Chair:
Candi Cunningham*

Session B: Consumer Reported Outcome Measures

Session Chair: Jessica Zdinak

4:00 PM

Welcome Remarks

Welcome Remarks

4:05 PM 72 **TOBACCO IMPLEMENTATION GUIDE (TIG) V1.0: A NEW STANDARD TO SUPPORT REGULATORY REVIEW AND DECISION MAKING.**

Chrissie CAI¹, Christine Connolly²; ¹US Food and Drug Administration, Beltsville, MD, USA, ²CDISC, Austin, TX, USA

77 **CHARACTERIZING TOBACCO PRODUCT USE PATHWAYS LEADING TO AND FLOWING FROM REGULAR USE OF NICOTINE POUCHES.**

Gavin O'DOWD¹, Jon Laucirica¹, Jasmin Alipour¹, Luke Dubery¹, Marta Esposti¹, Christopher Russell²; ¹Haypp Group AB, Stockholm, Sweden, ²Russell Burnett Research & Consultancy, Glasgow, UK

- 4:25 PM 73 **“IT’S GOOD NEWS”:** 78 **TRENDS IN SMOKING
CASE STUDIES IN
THE FACT-
CHECKING OF
STATISTICAL BIAS
IN THE SCIENTIFIC
LITERATURE AND
ITS TRANSLATION
BY THE NEWS
MEDIA.** Gal COHEN;
Rose Research Center,
Raleigh, NC, USA
- 4:45 PM 74 **PREVENTING
YOUTH ACCESS
AND USE BY
OUTFITTING E-
CIGARETTES WITH
NEAR-FIELD
COMMUNICATION
(NFC)
TECHNOLOGY.**
Martin STEINBAUER¹,
Kylie Halperin¹, David
Lawson², Christopher
Russell³; ¹SkyX Group,
New York, NY, USA,
²Inter Scientific,
Liverpool, UK, ³Russell
Burnett Research and
Consultancy, Glasgow,
UK
- 79 **IDENTIFYING
PREDICTORS OF
SMOKING
SWITCHING
BEHAVIORS BASED
ON THE POPULATION
ASSESSMENT OF
TOBACCO AND
HEALTH STUDY
DATA: A MACHINE
LEARNING ANALYSIS.**
Xiaona LIU¹, Yue Cao¹,
Jiaxuan Li¹, Xi Chen¹,
Yuming Xiong¹, Fangzhen
Zheng¹, Jianqiang Zhang¹,
Xiaona Liu¹, Xuxi Zhang²,
Xinying Sun², Ian M.
Fearon³; ¹Smooore
Research Institute,
Shenzhen, Guangdong,
China, ²Peking University,
Beijing, China, ³whatIF?
Consulting, Harwell, UK

5:05 PM 75 **AWARENESS, SUSCEPTIBILITY, AND USE OF NICOTINE POUCHES AMONG A PROBABILITY-BASED SAMPLE OF UNDERAGE SUBJECTS IN THE UNITED STATES.**
Andrea PATTON,
Gabriel Barnard, Neil
Mckeganey; Centre for
Substance Use
Research, Glasgow, UK

80 **THE EFFECTS OF ELECTRONIC CIGARETTE USE PATTERNS ON HEALTH RELATED SYMPTOM BURDEN AND QUALITY OF LIFE: ANALYSIS OF US PROSPECTIVE LONGITUDINAL COHORT STUDY DATA.**
Xiaona LIU¹, Yue Cao¹,
Jiaxuan Li¹, Xi Chen¹,
Yuming Xiong¹, Fangzhen
Zheng¹, Jianqiang Zhang¹,
Xiaona Liu¹, Xuxi Zhang²,
Xinying Sun², Ian M.
Fearon³; ¹Smooore Research
Institute, Shenzhen,
Guangdong, China, ²Peking
University, Beijing, China,
³whatIF? Consulting,
Harwell, UK

5:25 PM 76 **DERIVATION OF EXCESS LIFETIME CANCER RISK FOR NON-COMBUSTIBLE NICOTINE PRODUCTS.** Ramez
LABIB; Consilium
Sciences, Glen Allen,
PA, USA

ADJOURN

TUESDAY, SEPTEMBER 10, 2024
TECHNICAL PROGRAM

Panel Discussion
*Session Chairs: Rachael
Schmidt & Lillian Ortega*

Session B: Agronomy
Session Chair: Collin Fisher

8:45 AM

Welcome Remarks

Welcome Remarks

8:50 AM 81

**ADVANCING
SCIENCE-BASED
CONSENSUS
STANDARDS FOR
NICOTINE POUCHES
IN THE U.S:
PATHWAY TO
REGULATORY AND
PUBLIC HEALTH
SYNERGY.**

Cliff Watson; CDC, Atlanta,
GA USA

Donna Smith; Altria Client
Services, Richmond, VA USA

Salome Bhagan; CTP/ Office
of Science, Washington, DC,
USA

John Lindholm; Swedish
Match, Richmond, VA USA

Markus Lindblad; HayPP
Group, Stockholm, Sweden

82

**THE ROOTS OF LOW
ALKALOID TOBACCO
PROBABLY
DETERMINE ITS POOR
LEAF QUALITY.**
Barunava PATRA, C.
Fisher, SK. Singh, J.
Kinney; University of
Kentucky, Lexington, KY,
USA

9:10 AM

**Panel Discussion &
Audience Q&A
(continue)**

83

**STACKING A NOVEL
LOW NICOTINE GENE
WITH THE LA
NIC₁NIC₂ MUTANTS
LOWERS NICOTINE
TO ULTRA-LOW
LEVELS.** Anne FISHER¹,
Stacey Slone¹, Barunava
Patra¹, Colin Fisher¹,
Huihua Ji¹, Jeffrey Kinney¹,
Shengming Yang²;
¹University of Kentucky,
Lexington, Kentucky, USA,
²US Dep. of Agriculture,
Fargo, ND, USA

9:30 AM	Panel Discussion & Audience Q&A (continue)	84	UNDERSTANDING THE MOLECULARMECHANISM UNDERLYING LOW ALKALOID ACCUMULATION IN A MUTANT BURLEY BREEDING LINE WITH NOVEL SPONTANEOUS MUTATION(S). <u>Barunava PATRA</u> , A. Fisher, S.K. Singh, J. Kinney; University of Kentucky, Lexington, KY, USA	
9:50 AM	Panel Discussion & Audience Q&A (continue)	85	POST TRANSLATIONAL REGULATION OF NICOTINE BIOSYNTHESIS BY MAP KINASE CASCADE NTMEKK1B-NTMCK2A-NTMPK4. <u>Yan ZHOU</u> , Yongliang Liu, Sitakanta Pattanaik, Barunava Patra, Ruiqing Lyu, Huihua Ji, Sanjay Singh, Ling Yuan; University of Kentucky, Lexington, KY, USA	
10:10 AM	<i>BREAK</i>			
	Session A: ENDS Use Behavior <i>Session Chair: Josh Karelitz</i>		Session B: Method or Process Development <i>Session Chair: Jesse Phillips</i>	
10:30 AM	Welcome Remarks		Welcome Remarks	
10:35 AM	86	ACTUAL EXPERIENCE CONDUCTING ACTUAL USE STUDIES: NOTES FROM THE FIELD ON EFFECTIVE LONGITUDINAL TRIALS. <u>Christopher FLEURY</u> , Victoria Hoverman; Ipsos-Insight, Washington, DC, USA	91	DETERMINATION OF ORGANIC ACIDS IN ENDS PRODUCTS BY GC-MS USING ALKYL CHLOROFORMATE DERIVATIZATION IN AQUEOUS SOLUTION. <u>Andrew CHEETHAM</u> ; Mckinney Specialty Labs, Richmond, VA, USA

- 10:55 AM 87 **PERSON-CENTERED APPROACHES TO UNDERSTAND CIGARETTE SWITCHING AND CIGARETTE REDUCTION RATES IN ACTUAL USE STUDIES.** Ian JONES, Jessica Zdinak, Kiri Li Stauch; Applied Research and Analysis Company, Richmond, VA, USA
- 92 **DETERMINATION OF NICOTINE IN OTDN AND LIQUID PRODUCTS BY UV-VIS SPECTROPHOTOMETRY.** Seok Chan PARK, Fadi Aldeek; Altria Client Services, Richmond, VA, USA
- 11:15 AM 88 **A RANDOMIZED EXPERIMENTAL STUDY TO ASSESS THE EFFECTS OF FLAVORED E-LIQUID PRODUCTS ON ADULT SMOKERS SWITCHING CIGARETTE CONSUMPTION BEHAVIORS.** Jessica ZDINAK¹, Ian Jones¹, Kiri Li Stauch¹, Willie McKinney²; ¹Applied Research and Analysis Company, Richmond, VA, USA, ²McKinney Regulatory Science Advisors, Richmond, VA, USA
- 93 **GAS PHASE INFRARED SPECTROSCOPY ENABLES PUFF-BY-PUFF PROFILING OF A NOVEL HEATED TOBACCO CAPSULE (HTC) PROTOTYPE.** Frank HIGGINS, Michael B. Brown, Zack W. Blackmon, Matt Melvin, Weiling Li, Yezdi B. Pithawalla; Altria Client Services, Richmond, VA, USA

- 11:35 AM 89 **MENTHOL, BLUEBERRY, AND WATERMELON NJOY ACE PROMOTES SIGNIFICANTLY GREATER COMPLETE SWITCHING COMPARED TO TOBACCO-FLAVORED NJOY ACE.** Kate VERGARA, Elizabeth Becker, Hui Chen; Altria Client Services, Richmond, VA, USA
- 94 **NON-TARGETED CHEMICAL ANALYSIS - TRANSITIONING FROM RESEARCH TO ROUTINE APPLICATIONS.** Mark CROSSWHITE, Roxana Weil, Willie McKinney; McKinney Regulatory Science Advisors, Richmond, VA, USA
- 11:55 AM 90 **SIX-WEEK ACTUAL USE STUDY TO EVALUATE THE EFFECT OF THE JUUL₂ SYSTEM ON CIGARETTE SMOKING AND TOBACCO PRODUCT USE BEHAVIORS AMONG ADULTS WHO SMOKE CIGARETTES IN THE UNITED STATES.** Nicholas GOLDENSON¹, Saul Shiffman², Ryan Black¹; ¹Juul Labs, Inc, Washington, DC, USA, ²PinneyAssociates, Pittsburgh, PA, USA
- 95 **ANALYSIS OF THE FULL COMPOSITION OF HEATED TOBACCO AEROSOLS BASED ON LARGE VOLUME THERMAL INJECTION-COLUMN INTERNAL EVAPORATION CONCENTRATION.** LI Junjie, Fei Ting, Qi Dawei, Cheng Qian, Zhang Wei, Wu Da; Shanghai Tobacco Group of CNTC, Shanghai, China

12:15 PM

LUNCH

1:00 PM

POSTER SESSION: 41-70 (listing on page 22)

Panel Discussion

Session Chair:

Mark Forster

**Session B: Product
Characterization I**

Session Chair:

Andrew Cheetham

2:30 PM

Welcome Remarks

Welcome Remarks

2:35 PM

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**TOBACCO HARM
REDUCTION
SUCCESS STORIES:
HOW COUNTRIES
ARE EMBRACING
SMOKELESS
ALTERNATIVES
AND THEIR
IMPACT ON
SMOKING.**

Karl Fagerström;
Fagerström Consulting,
Stockholm, Sweden

Marewa Glover; Centre of
Research Excellence:
Indigenous Sovereignty
& Smoking, Auckland,
New Zealand

Derek Yach; Global
Health Strategies,
Connecticut, USA

97

**A PRACTICAL
FRAMEWORK FOR
NOVEL ENDS
EVALUATION:
CHEMICAL AND
TOXICOLOGICAL
CHARACTERIZATION
OF JUUL² AEROSOL
AND COMPARISON
WITH REFERENCE
CIGARETTES.** David

COOK, Michael J.
Oldham, Jiaming Wang,
Austin Bates, Christina
Sulaiman, Karen Carter,
Candice Jongmsa, I. Gene
Gillman; Juul Labs, Inc,
Washington, DC, USA

2:55 PM

**Panel Discussion &
Audience Q&A
(continue)**

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**TARGETED
CHARACTERIZATION
OF THE CHEMICAL
COMPOSITION OF
NOVEL JUUL
SYSTEM'S AEROSOL
AND COMPARISON
WITH KENTUCKY
REFERENCE
CIGARETTES AND
ENDS.** Karen CARTER,
D.K. Cook, J. Wang, A.L.
Bates, C. Smith, I.G.
Gillman; Juul Labs, Inc,
Washington, DC, USA

3:15 PM	Panel Discussion & Audience Q&A (continue)	99	EXPANDED TARGETED CHARACTERIZATION OF THE CHEMICAL COMPOSITION OF JUUL SYSTEM'S AEROSOL AND COMPARISON WITH KENTUCKY REFERENCE CIGARETTES. <u>Candice JONGSMA</u> , Karen Carter, David K. Cook, Jiaming Wang, I. Gene Gillman; Juul Labs, Inc, Washington, DC, USA
3:35 PM	Panel Discussion & Audience Q&A (continue)	100	ACCELERATED AGING OF PROPYLENE GLYCOL AND GLYCEROL IN THE PRESENCE OF ORGANIC ACID AND NICOTINE. <u>Norman FRALEY</u> , Anastasia Lioubomirov, I. Gene Gillman; Juul Labs, Inc, Washington, DC, USA
3:55 PM	Panel Discussion & Audience Q&A (continue)	101	EVALUATION OF NICOTINE DEGRADANTS IN TOBACCO PRODUCTS INTENDED FOR ORAL CONSUMPTION. <u>Joseph JABLONSKI</u> , Andrew G. Cheetham; Mckinney Specialty Labs, Richmond, VA, USA

4:15 PM

BREAK

- 4:35 PM 102 **THE IMPACT OF PRINTED CIGARETTE PAPER ON PERMEABILITY AND DIFFUSION CHARACTERISTICS.** Michael LINDNER; Tann Holding, Traun, Austria
- 4:55 PM 103 **A CHALLENGE FOR ROUTINE SENSORY EVALUATION: INSTRUMENTATION AND DATA ANALYTICAL MODELS FOR SENSORY PREDICTIONS.** Ian TINDALL, Reddy Selvan, Laimon Hamzah; Cerulean, Milton Keynes, Buckinghamshire, UK
- 5:15 PM **BUSINESS MEETING (SESSION B, RAVINIA A-C):**
All conference attendees are encouraged to attend.
- 6:00 PM ***ADJOURN***
- 6:30 PM **COCKTAIL HOUR AND AWARDS BANQUET**

WEDNESDAY, SEPTEMBER 11, 2024
TECHNICAL PROGRAM

**Session A: Clinical Studies
& Biomarkers**

Session Chair: Ian Fearon

**Session B:
Agronomy II**

Session Chair: Anne Fisher

8:45 AM		Welcome Remarks		Welcome Remarks
8:50 AM	104	APPLICATION OF BIOMARKERS OF EXPOSURE AS COMPLIANCE MEASURES IN LONG-TERM AND EPIDEMIOLOGICAL STUDIES OF NEW NICOTINE AND TOBACCO PRODUCTS. <u>Max SCHERER</u> ; Abf Analytisch-Biologisches Forschungslabor, Planegg, Bavaria, Germany	108	SULFUR AND CHLORIDE FERTILIZATION IMPACT ON BURLEY TOBACCO GROWTH, YIELD AND LEAF CHEMISTRY. <u>Bob PEARCE</u> , Tara Valentine, Natalia Martinez, Magdalena Ricciardi; University of Kentucky, Lexington, KY, USA
9:10 AM	105	ENDS-INDUCED HEAVY METAL EXPOSURE AND OXIDATIVE INJURY IS MEDIATED BY VAPING BEHAVIOR. <u>Maureen MEISTER</u> ¹ , Xiaojia He ² , Jennifer Jeon ² , Patrick Chepaitis ² , Qian Zhang ² , Mark Wilson ² , Marilyn Black ² , Christa Wright ² , Akshanda Shinde ³ , Jonathan Shannahan ³ , Pam Cushenan ⁴ , Scott Weaver ⁴ , Ruiyan Luo ⁴ ; ¹ UL Research Institutes, Marietta, GA, USA, ² Chemical Insights Research Institute, Marietta, GA, USA, ³ Purdue University, West Lafayette, IN, USA, ⁴ Georgia State University, Atlanta, GA, USA	109	DISTRIBUTION OF TOBACCO CONSTITUENTS PON AND NNK IN CURED BURLEY TOBACCO LEAF TISSUE. <u>Ying WU</u> , Huihua Ji; University of Kentucky, Lexington, KY, USA

- 9:30 AM 106 **POTENTIAL INSIGHTS FROM REVERSE DOSIMETRY FOR IN VITRO ENDS TESTING.** Michael OLDHAM; Juul Labs, Inc, Washington, DC, USA
- 9:50 AM 107 **ASSOCIATIONS OF E-CIGARETTE USE PATTERNS WITH THE PREVALENCE OF CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD) AND HEART DISEASE AMONG ADULT TOBACCO USERS IN THE UNITED STATES.** Xiaona LIU¹, Yue Cao¹, Jiaxuan Li¹, Xi Chen¹, Yuming Xiong¹, Fangzhen Zheng¹, Jianqiang Zhang¹, Xiaona Liu¹, Ian M. Fearon², Xuxi Zhang³, Xinying Sun³; ¹Smoore Research Institute, Shenzhen, China, ²whatIF? Consulting, Harwell, UK, ³Peking University, Beijing, China
- 110 **RESERACH AND APPLICATION OF KEY TECHNOLOGY FOR NEW MODEL OF SAFETY AND ENVIRONMENTAL PROTECTION STORED-TOBACCO PEST CONTROL IN HIGH-RACK WAREHOUSE.** QU Yongbo¹, Yin Dafeng¹, Xiao Fei¹, Fu Qiuping¹, Zhang Hui¹, Dai Lin¹, Liu Shiwei², Liu Xiaoqing²; ¹Technology Center Of Hunan Tobacco China Industry Co, Changsha, China, ² Hunan Huawang Fumigation And Disinfection Co, Changsha, China
- 111 **TOPPING DRIVES ADAPTIVE CHANGES OF TOBACCO ROOT-ASSOCIATED MICROBIOMES.** Peng LU¹, Mengli Gu^{1,2}, Jingjing Jin¹, Mengmeng Kong¹, Zechao Qu¹, Lingtong Cheng¹, Jianfeng Zhang¹, Peijian Cao¹, Jiemeng Tao¹; ¹ Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China, ²Zhengzhou University, Zhengzhou, China

10:10 AM

BREAK

Session A: Toxicology

*Session Chair:
Katarina Aleksa*

Session B:

HTP Use Behavior

*Session Chair:
Jessica Zdinak*

10:30 AM

Welcome Remarks

Welcome Remarks

10:35 am

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IDENTIFYING POTENTIAL ACUTE HEALTH HAZARDS FROM EXPOSURES TO (S)-6-METHYLNICOTINE TO INFORM PRODUCT DEVELOPMENT. Willie MCKINNEY¹, Marissa Smith², Ranulfo Lemus³, Roxana Weil¹; ¹Mckinney Regulatory Science Advisors, Henrico, VA, USA, ²Arivita, Richmond, VA, USA, ³Letox World, Xenia, OH, USA

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ACTUAL USE STUDY OF TOBACCO HEATING SYSTEM 3.0. Steve ROULET¹, Pierpaolo Magnani¹, Claudia Kanitscheider², Chris Freehauf², Stacey Bell², Eva Jenz³, Divine Akumo³, Gerd Kallischnigg⁴; ¹Philip Morris Products, Neuchatel, Neuchatel, ²Oracle Life Sciences (formerly Cerner Enviza, Munich, Germany), Austin, TX, USA, ³ZEG - Zentrum fur Epidemiologie und Gesundheitsforschung (Center for Epidemiology and Health Research), Berlin, Germany, ⁴ARGUS GmbH, Berlin, Germany

10:55 am

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EVALUATION OF THE GENOTOXIC POTENTIAL OF A FLAVORED ORAL NICOTINE POUCH PRODUCT USING INTEGRATED APPROACHES. Jingjie ZHANG, Richard Morgan, Uktarsh Doshi, Chastain Anderson, Wanyoike Kangethe, Donna Smith, K. Monica Lee (formerly of); Altria Client Services, Richmond, VA, USA

118

ACTUAL USE STUDY OF MARLBORO HEATED TOBACCO STICK PRODUCTS USED WITH THE PLOOM® HEATED TOBACCO DEVICE AMONG US ADULTS WHO SMOKE COMBUSTIBLE CIGARETTES. Joshua KARELITZ¹, Nelly Mainy², Elizabeth Becker¹; ¹Altria Client Services, Richmond, VA, USA, ²JT International SA, Geneva, Switzerland

- 11:15 AM 114 **ECOTOXICITY EVALUATION OF CIGARETTE BUTTS.**
Sandra DE JONGH,
Diane Raverdy
Lambert; SWM
International, Spay,
Sarthe, France
- 119 **PUFF TOPOGRAPHY OF MARLBORO HEATED TOBACCO STICK PRODUCTS USED WITH THE PLOOM® HEATED TOBACCO DEVICE AMONG ADULTS WHO SMOKE COMBUSTIBLE CIGARETTES.** Joshua KARELITZ¹, Kevin Ball¹, Nelly Mainy²; ¹Altria Client Services, Richmond, VA, USA, ²JT International, Geneva, Switzerland
- 11:35 AM 115 **RESEARCH ON THE RESPIRATORY ABSORPTION PATTERN OF SMOKE AEROSOLS.**
WANG Zhuo¹, Cui
Huapeng², Yan
Quanping², Wen
Jianhui¹, Tuo Suxing¹,
Wang Zhiguo¹, Liu
Wei¹, Du Wen¹; ¹China
Tobacco Hunan
Industrial Co of CNTC,
Changsha, Hunan,
China, ²Zhengzhou
Tobacco Research
Institute of CNTC,
Zhengzhou,
Henan,China
- 120 **ACTUAL USE OF A HEATED TOBACCO PRODUCT AND CHANGES IN CIGARETTE SMOKING BEHAVIOUR AMONG ADULTS WHO SMOKE IN CZECHIA.**
Christopher RUSSELL¹,
Gabriel Barnard², Neil
Mckeganey², Venus
Marza², Sophie Notley²,
Martin Fitzpatrick³,
Matthew Stevenson³,
Layla Malt³, Thomas
Nahde⁴; ¹Russell Burnett
Research & Consultancy,
Glasgow, UK, ²Centre For
Substance Use Research,
Glasgow, UK, ³Imperial
Brands, Bristol, UK,
⁴Imperial Brands
Reemtsma, Hamburg,
Germany

11:55 PM 116 **IN VITRO TOXICOLOGICAL EVALUATION OF CIGARETTE BASED ON AIRWAY ORGANOID.** TIAN Yushan¹, Li Xiao^{1,2,3}, Wang Xianglong^{1,2,3}, Wang Hongjuan^{1,2,3}, Fu Yaning^{1,2,3}, Han Shulei^{1,2,3}, Chen Huan^{1,2,3}, Hou Hongwei^{1,2,3}, Hu Qingyuan¹; ¹China National Tobacco Quality Supervision & Test Center, Zhengzhou, China, ²Beijing Life Science Academy, Beijing, China, ³Key Laboratory of Tobacco Biological Effects, Zhengzhou, China

121 **STRUCTURAL EQUATION MODELING FOR ADVANCED INSIGHT FROM BEHAVIORAL SURVEYS.** Ryan SELTZER; Safety in Numbers, Tucson, AZ, USA

12:15 PM

LUNCH

Session A: Product Characterization II
Session Chair:
Clarissa Tatum

Session B: Agronomy III
Session Chair: Huihua Ji

1:15 PM

Welcome Remarks

Welcome Remarks

1:20 PM 122 **ANALYSIS OF HEATED BOTANICAL SUBSTRATE AEROSOL EMISSIONS COMPARED TO A HEATED TOBACCO PRODUCT.** Stéphane DEJOIE, C. Rigoulay, N. Durot, O. Brenner, D. Raverdy-Lambert; SWM c/o LTR Industries, Allonnes, France

124 **TIME SERIES TRANSCRIPTIONAL LANDSCAPE OF TOBACCO LEAVES IN RESPONSE TO HERBIVORE AT SINGLE-CELL RESOLUTION.** Huan SU¹ Lingtong Cheng¹, Jiemeng Tao^{1,2}, Peng Lu^{1,2}, Jianfeng Zhang^{1,2}, Peijian Cao^{1,2}, Jingjing Jin^{1,2}; ¹Zhengzhou Tobacco Research Institute of CNTC, Zhengzhou, China, ²Beijing Life Science Academy, Beijing, China

1:40 PM 123 **ACCELERATED SHELF-LIFE METHOD FOR HEATED BOTANICAL SUBSTRATE CONTAINING NICOTINE.** Nathalie DUROT, D. Raverdy-Lambert, S. Dejoie, C. Rigoulay, O. Brenner; Ltr Industries C/O Swm Usine Le Mans France

125 **THE INTERACTIONS BETWEEN ETHIOPIAN TOBACCO BUSHY TOP VIRUS AND ITS SATELLITE RNA OR AN UNRELATED SATELLITE RNA.** MO Xiaohan¹, Zhao Xingneng^{1,2,3}, Zhang Wei^{1,4}, Zhang Lifang^{1,2}, Xu Ping^{1,2}, Li Yanqiong^{1,2}, Yu Qing¹, Yu Min⁴, Chen Hairu²; ¹Yunnan Academy of Tobacco Agricultural Science, Kunming, Yunnan, China, ²Yunnan Agricultural University, Kunming, Yunnan, China, ³Wenshan Branch of Yunnan Tobacco Company, Wenshan, Yunnan, China, ⁴College of Life Sciences, Yunnan University, Kunming, Yunnan, China

2:00 PM

126 **PREPARATION OF PH-RESPONSIVE DSRNA DELIVERY SYSTEM BASED ON BOVINE SERUM ALBUMIN FOR PEST CONTROL WITH HIGH RNAI EFFICIENCY.** Chuantao XU², Chenyu Su¹, Meixue Sun¹, Jingfang Cun¹, Robert I. Graham³, Zhang Yonghui², Xie Qiang², Xiufang Wang¹, Hao Zong⁴, Yingjie Liu⁵; ¹Tobacco Research Institute of Chinese Academy of

Agricultural Sciences,
Qingdao, China, ²Luzhou
City Company of Sichuan
Province Tobacco Company,
Luzhou, China, ³SRUC,
Aberdeen, UK, ⁴ Shandong
Tobacco Company, Linyi,
China, ⁵ Staff Development
Institute of China National
Tobacco Corporation,
Zhengzhou, China

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Wanrong, Yang Zhen, Cao
Yu, Jia Yun, Liu Lulu, Li
Dongliang; China Tobacco
Sichuan Industrial Co,
Chengdu, Sichuan, China**

CONFERENCE ADJOURNS

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8. **AN EFFICIENT ROUTINE METHOD FOR THE DETERMINATION OF OXIDES OF NITROGEN IN SIDESTREAM SMOKE OF CIGARETTES BY ONLINE CHEMILUMINESCENCE MEASUREMENT.** Thomas SCHMIDT, Frank Kraemer, Katrin Schade, Beata Kowalski; Körber Technologies Instruments Gmbh, Hamburg, Hamburg, Germany
9. **A SIMPLIFIED MEASUREMENT METHOD FOR CLASSIFICATION OF E-CIGARETTES.** Thomas SCHMIDT, Frank Kraemer, Katrin Schade, Alexander Kitta; Körber Technologies Instruments Gmbh, Hamburg, Hamburg, Germany
10. **PERCEPTIONS OF RISK OF THE MARLBORO HEATED TOBACCO STICK PRODUCTS USED WITH THE PLOOM® HEATED TOBACCO DEVICE AMONG US ADULTS.** Jennifer LEWIS¹, Nelly Mainy², Elizabeth Becker¹; ¹Altria Client Services, Richmond, VA, USA, ²JT International SA, Geneva, Switzerland
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12. **A RANDOMIZED STUDY EVALUATING THE IMPACT OF ENDS ADVERTISING AND PROMOTIONAL MATERIALS ON USE INTENTIONS AMONG ADULTS WHO SMOKE AND NON-TOBACCO USERS.** Nicholas GOLDENSON¹, Stacey A. McCaffrey¹, Saul Shiffman²; ¹Juul Labs, Inc, Washington, DC, USA, ²Pinney Associates, Bethesda, MD, USA

- 13 **STABILITY OF CERTIFIED REFERENCE CIGARS DURING LONG-TERM STORAGE.** Huihua JI, Zhenyu Jin, Laura Fenton; University Of Kentucky, Lexington, KY, USA
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- 15 **WHITE FOX 4 MG NICOTINE POUCH PRODUCTS ARE BIOEQUIVALENT TO 4 MG NICORETTE GUM.** Ed CARMINES¹, Karen Carmines¹, Lise Fraissinet¹, Naama Levy-Cooperman², Ryan Seltzer³; ¹Chemular, Scottsdale, AZ, USA, ²Altreos Research Partners Inc, Toronto, Canada, ³Safety in Numbers, Tucson, AZ, USA
- 16 **IN VITRO TOXICOLOGICAL ASSESSMENT OF WHITE FOX MODERN ORAL NICOTINE POUCH PRODUCTS.** Manoj MISRA, Ed Carmines, Chris Woodruff, Lise Fraissinet; Chemular Regulatory Consulting, Hudson, MI, USA
- 17 **HPHC ANALYSIS OF WHITE FOX MODERN ORAL NICOTINE POUCH PRODUCTS.** Manoj MISRA, Ed Carmines, Chris Woodruff, Lise Fraissinet; Chemular Regulatory Consulting, Hudson, MI, USA
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- 19 **RISK PERCEPTIONS AND MISPERCEPTIONS OF NJOY ACE® 2.0 BLE ENDS PRODUCTS AMONG ADULTS 21+ WHO SMOKE COMBUSTIBLE CIGARETTES.** Kate VERGARA, Brandon Newmyer; Altria, Richmond, VA, USA
- 20 **ASSESSMENT OF THE ADVERSE EFFECTS OF REPEATED 28-DAY HEATED TOBACCO PRODUCTS (HTPS) EMISSION INHALATION EXPOSURE IN RATS.** Jinhee KIM¹, Su-Hyun Choi¹, Mi Jin Yang¹, Kyung-Chul Choi², Dohee Ahn², Bumseok Kim³, Min-Seok Kim¹; ¹Korea Institute of Toxicology, Jeongeup, Jeonbuk, Korea, ²Chungbuk National University, Cheongju, Chungbuk, Korea, ³Jeonbuk National University, Iksan, Jeonbuk, Korea

- 21 **EVALUATION OF NICOTINE, ACETALDEHYDE, CROTONALDEHYDE, AND FORMALDEHYDE LEVELS IN SMOKELESS TOBACCO PRODUCTS OBTAINED AT DIFFERENT PROCUREMENT TIMES.** Selvin EDWARDS¹, Matthew D. Hassink¹, An T. Vu¹, Kenneth M. Taylor²; ¹Center for Tobacco Products, Food and Drug Administration, Silver Spring, Maryland, USA, ²Center for Veterinary Medicine, Food and Drug Administration, Laurel, MD, USA
- 22 **ACTUAL USE STUDY OF THE P4M3 GEN 2.0 CLOSED-END ELECTRONIC NICOTINE DELIVERY SYSTEM.** Steve ROULET¹, Claudia Kanitscheider², Pierpaolo Magnani¹, Aurelie Formey-Leichti¹, Alexandre Soulan¹, Felix Marckzykowski², Laura Marquis², Kelly Peters³, Gerd Kallischnigg⁴; ¹Philip Morris Products, Neuchatel, Neuchatel, Switzerland, ²Oracle Life Sciences, Munich, Germany (formerly Cerner Enviza), ³Oracle Life Sciences, Austin, TX, USA (formerly Cerner Enviza), ⁴ARGUS, Berlin, Germany
- 23 **PRODUCT PERCEPTION AND INTENTION STUDY OF THE P4M3 GEN 2.0 CLOSED-END ELECTRONIC NICOTINE DELIVERY SYSTEM.** Steve ROULET¹, Pierpaolo Magnani¹, Medy Ehtesham¹, Alexandre Soulan¹, Sarah Farnsworth², Eva DeJong²; ¹Philip Morris Products, Neuchatel, Switzerland, ²PEGUS Research, Salt Lake City, UT, USA
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- 28 **COMPARATIVE ANALYSIS OF HEATED TOBACCO PRODUCTS AND 1R6F REFERENCE CIGARETTE RESPONSES IN TK6 AND CHO CELL LINES UTILIZING HIGH THROUGHPUT FLOW CYTOMETRY AND MANUAL COUNTING FOR THE IN VITRO MICRONUCLEUS ASSAY.** Katarina ALEKSA, Dong Ma, Bonnie Coffa; Labstat International, Kitchener, ON, Canada
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- 30 **EVALUATION OF ENVIRONMENTAL EMISSIONS FROM GLO HEATED TOBACCO PRODUCTS AND COMBUSTIBLE CIGARETTES.** Milly KANOBE, John Darnell, Tao Jin, Jeff Coffield, Brian M. Keyser, Patrudu Makena, Sarah A. Baxter, Kristen G. Jordan, Gary M. Dull (formerly of), Buddy Brown (retired); RAI Services Company, Winston-Salem, NC, USA
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- 34 **HEALTHCARE PROVIDERS' AWARENESS AND TRUST OF THE UNITED STATES FOOD AND DRUG ADMINISTRATION FOR REGULATING TOBACCO AND NICOTINE-CONTAINING PRODUCTS.** Deena BATTISTA¹, Susan Martelle², Michael Polster³; ¹Womble Bond Dickinson, Winston-Salem, NC, USA, ²RAI Services Company, Winston-Salem, NC, USA, ³Naxion, Philadelphia, PA, USA
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- 46 **AWARENESS AND USE PATTERNS OF ORAL NICOTINE POUCHES AMONG REPRESENTATIVE UNDERAGE SAMPLES IN THE UNITED STATES.** Evan WINIGER, Nadja Richter, Pavel Lizhnyak; Altria Client Services, Richmond, VA, USA

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- 50 **CHANGES IN BIOMARKERS OF EXPOSURE AMONG ADULT CIGARETTE SMOKERS WHO TRANSITIONED TO ENDS USE OR QUIT SMOKING: THE POPULATION ASSESSMENT OF TOBACCO AND HEALTH STUDY, 2013-2019.** Paul LIZHNYAK, Hui Cheng, Mingda Zhang; Altria Client Services, Richmond, VA, USA
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- 53 **CHARACTERIZATION OF VOLATILES FROM HEATED REFERENCE CIGARETTES 3R4F USING THERMAL SEPARATION PROBE-GC/MS.** Antoaneta MIHAYLOVA-KROUMOVA, George J. Wagner, Victor D. Korenkov; University of Kentucky, Lexington, KY, USA

- 54 **COMPARISON OF POLYCYCLIC AROMATIC HYDROCARBON QUANTITIES AND YIELDS IN FILLER AND SMOKE AMONG SELECT CIGAR PRODUCTS.** Aireen ROMU, Rachel Lerebours, Mimy Young, Tricia Johnson, Charles Feng; Food and Drug Administration, Silver Spring, MD, USA
- 55 **PHARMACOKINETICS, PHARMACODYNAMICS, AND NICOTINE EXTRACTION IN A NOVEL NICOTINE POUCH PRODUCT COMPARED TO TRADITIONAL MOIST SNUFF.** Mikael STAAF, Camilla Pramfalk, Anna Masser, Tryggve Ljung, Robert Pendrill, Johan Lindholm; Swedish Match, Stockholm, Sweden
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- 58 **DISSOLUTION TESTING OF WHITE FOX BRAND MODERN ORAL NICOTINE POUCHES.** Ed CARMINES¹, Chris Woodruff¹, Lise Fraissinet¹, Mengliang Bao²; ¹Chemular, Hudson, MI, USA, ²Labstat International, Kitchener, ON, Canada
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- 61 **A SENSITIVE GC-MS/MS METHOD FOR THE QUANTIFICATION OF BENZO[A]PYRENE TETROL IN URINE.** Max SCHERER, F. Pilz, A. Gärtner, G. Scherer, N. Plum; Abf Analytisch-Biologisches Forschungslabor, Planegg, Bavaria, Germany
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- 65 **CHANGES IN E-VAPOR HARM PERCEPTION AND RELATED TRANSITION BEHAVIORS AMONG US ADULTS WHO SMOKE: LONGITUDINAL ANALYSIS OF POPULATION ASSESSMENT OF TOBACCO AND HEALTH (PATH) STUDY WAVES 1 TO 6 DATA.** Lai WEI, Raheema Muhammad-Kah, Edward Largo, Maria Gogova, Mohamadi Sarkar; Altria Client Services, Richmond, VA, USA
- 66 **THE HEATED TOBACCO PRODUCT MARKET.** Phil SAUNDERS, Malcolm Saxton; Broughton Life Sciences, Earby, Lancashire, UK
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- 70 **OPTIMIZATION OF A GC-MS METHOD FOR THE DETERMINATION OF ETHYLENE OXIDE IN HEATED TOBACCO PRODUCT (HTP) AEROSOLS.** Jacqueline COLLINS, Alexandra M. Martin; Mckinney Specialty Labs, Richmond, VA, USA

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- W2 **W2. MIXING DIFFERENT FLAVORED WATERPIPE TOBACCOS: CONSUMER PREFERENCE, MARKETING GIMMICK AND/OR REGULATORY CONUNDRUM?** John LAUTERBACH; Lauterbach & Associates, Deland, FL, USA
- W3 **USE OF HEAT MANAGEMENT DEVICES IN CONJUNCTION WITH ELECTRIC HEATERS FOR THE GENERATION OF EMISSIONS FROM WATERPIPE TOBACCOS.** John LAUTERBACH; Lauterbach & Associates, Deland, FL, USA
- W4 **ANALYSIS OF COMMERCIAL CIGARS FOR DEVELOPMENT OF DESIGN PARAMETERS FOR REFERENCE CIGARS.** Huihua JI; University of Kentucky, Lexington, KY, USA
- W5 **THE HISTORY OF THE CENTER FOR TOBACCO REFERENCE PRODUCTS AND THE ADDITION OF CERTIFIED REFERENCE CIGARS.** Ruth MCNEES; University of Kentucky, Lexington, KY, USA
- W6 **DETERMINATION OF CERTIFIED VALUES AND UNCERTAINTIES FOR REFERENCE CIGARS.** Stacey SLONE; University of Kentucky, Lexington, KY, USA
- W7 **LONG-TERM SUSTAINABILITY AND FUTURE PLANS FOR THE CENTER FOR TOBACCO REFERENCE PRODUCTS.** Ruth MCNEES; University of Kentucky, Lexington, KY, USA