

2016-2017 Presentations:

Michelle Peace and Justin Poklis, Co-Chairs. E-cigarettes: What you need to know and why you should care. Half-day Workshop. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Michelle Peace. Teaching, Research, and Grants. How to Get Involved. Young Forensic Toxicologists' Student Enrichment Program. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Karen E. Butler, Justin Poklis, Joseph B McGee Turner, **Alphonse Poklis, Michelle R. Peace.** Presumptive Analysis of E-cigarette Aerosol Using SPME for Analysis by GCMS and Accu-TOF DART Mass Spectrometry. Young Forensic Toxicologists Symposium Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Carl E. Wolf, *Hao-Jung Chun*, Justin L. Poklis, **Alphonse Poklis.** Platform Presentation. Brain on Alcohol: Method for Alcohol Analysis in Brain Tissue by Headspace Gas Chromatography with Flame Ionization Detector (HSGC-FID). Society of Forensic Toxicologists, Dallas, TX. October 2016.

Sara K. Dempsey, Carl E. Wolf, Justin L. Poklis, **Alphonse Poklis.** Molly, Daffy, and Kiddy-Coke Walk into a Rave: A Case of Polysubstance Overdose. Platform Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Carl E. Wolf, Justin L. Poklis, **Alphonse Poklis** Havoc in the Kitchen, Baking to get Baked, Preparation of Quality Control Materials. Platform Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Renata Nascimento, Justin L. Poklis, Joseph K. Ritter, Carl E. Wolf, **Alphonse Poklis.** Knowing Your B's and C's: The Identification of 25BNBOMe and 25C-NBOMe Biomarkers. Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Rose I. Krakowiak, Karen E. Butler, Joseph W. Stone, Tyson R. Baird, Justin L. Poklis, Joseph B. McGee Turner, **Alphonse Poklis, Michelle R. Peace.** Analysis of Aerosolized Methamphetamine Infused E-Liquids by Solid Phase Microextraction using Gas Chromatography Mass Spectrometry (SPME-GC-MS), Direct Analysis in Real Time AccuTOFTM Mass Spectrometry (SPME-DART-MS), and Headspace Gas Chromatography Mass Spectrometry (HS-GC-MS). Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Haley Mulder, Ivy P. Blue IV, Justin Poklis, *Jesse Patterson, Rose Krakowiak, Kaitlyn Forsythe, Jasmynn Royals, Alexandra Dupont*, **Alphonse Poklis, Michelle Peace**, Joseph Turner. Temperature Characterization of Electronic Cigarette Atomizer by Infrared Temperature Sensing. Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Katilyn N.L. Brooks, Justin Poklis, Joseph B. McGee Turner, **Alphonse Poklis**, **Michelle R. Peace**. The Effect of Light and Temperature on Electronic Cigarette E-Liquid Formulations. Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Laura A. McNew, Justin L. Poklis, Joseph B. McGee Turner, **Alphonse Poklis**, **Michelle R. Peace**. A Presumptive Evaluation of Commercial Refill Formulations for Nicotine by a Microchemical Analysis Method Developed as a Field Test. Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Ivy P. Blue IV, Karen E. Butler, Joseph B. McGee Turner, **Michelle R. Peace**. Passive Extraction of Nicotine from Components of Electronic Cigarettes using Charcoal Strips. Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Carrol R. Nanco, Kim Samano, Justin L. Poklis, Carl Wolf, **Alphonse Poklis**. Disposition of the Synthetic Cannabinoid CP47,497 in the Mouse. Poster Presentation. Society of Forensic Toxicologists, Dallas, TX. October 2016.

Patterson JL (presenter), Poklis JL, Hindle M, Wolf CE, McGee Turner JB, Poklis A, **Peace MR**. Evaluation of the Particle Size in an Aerosol Produced by an Electronic Cigarette. Society of Forensic Toxicologist, Dallas, TX. October 2016.

Robert Stein, **Tal Simmons**, **Christopher Ehrhardt**, Jennifer Hankle. Trace Element Analysis of Dental Enamel for the Geographic Attribution of Unidentified Remains. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

JenaMarie Baldaino, Jack Hietpas, JoAnn Buscaglia. Morphology and Microanalysis of Aluminum Powders From Amateur Improvised Explosive Device Methods. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Amelia Bussell, Cynthia Cornelissen, Richard Sikon, **Baneshwar Singh**. Embalmed Human Cadavers Are Not Sterile: The Impact of Two Embalming Methods on the Microbiome of Human Cadavers. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Claire Cartozzo, **Baneshwar Singh**, Edward Boone, **Tal Simmons**. DNA Recovery From Waterlogged Bone: A Test of Three Methods. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Claire Cartozzo, **Tal Simmons**, Edward Boone, **Baneshwar Singh**. Predicting the Postmortem Submersion Interval (PMSI) Using the Microbiome of Waterlogged Bone. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Waldon Chen, Joseph McGee Turner, **Eric Hazelrigg**, **Christopher Ehrhardt**. Trace Chemical Analysis of Potassium Permanganate Hypergolic Mixtures Analyzed With

Inductively Coupled Plasma/Optical Emission Spectroscopy (ICP/OES). American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Autumn Cooper, Carl Wolf II, Justin Poklis, **Alphonse Poklis**. Preparation of “Gummy” Quality Control (QC) Material and the Analysis of Medible “Gummy” Products. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Jordan Cox, Teresa Sikes DeCarmen, **Catherine Cupples Connon**, Kemper Gibson, Kimberly Jackson, James Landers, **Tracey Dawson Cruz**. A Novel, Extraction-PCR Microdevice on a Rotation-Driven Platform: Buccal Swab to STR Product in Less Than Two Hours. American Academy of Forensic Science, New Orleans, LA. February 2017.

Clare Diester, **Tracey Dawson Cruz**, Reema Elshaer, Amelia Bussell, Bonnie Brown, **Sarah Seashols Williams**. The Evaluation of a Nanopore Sequencing Platform for Concordance and Reliability in Short Tandem Repeat (STR) Analyses. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Carolyn Lewis, Tiffany Layne, **Sarah Seashols Williams**. The Detection of MicroRNAs (miRNAs) in DNA Extraction Methods Commonly Used for Forensic Casework. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Madison Roussel, **Marilyn Miller**, Rebecca Nugent, Adam Becne III. The Evaluation of a Hand-Held Raman Spectrometer for Field Identification of Controlled Substances. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Molly Woodson, Kemper Gibson, Jordan Cox, Kimberly Jackson, James Landers, **Tracey Dawson Cruz**. Microchip-Based Antibody-Mediated Differential Lysis of Sperm Cells. American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Michael Woolf, Vanessa Sufrin, **Tal Simmons**, **Baneshwar Singh**. Changes in Bacterial Community Structure and the Estimation of Long-Term Postmortem Interval (PMI). American Academy of Forensic Sciences, New Orleans, LA. February 2017.

Michelle R. Peace, *Haley Mulder*, *Rose Krakowiak*, Joseph B Turner, Justin Poklis, Matthew Halquist, Carl Wolf, **Alphonse Poklis**. An Assessment of Drugs Other Than Nicotine (DOTNs) in Electronic Cigarette Product. Poster Presentation. PittCon, Chicago, IL. March 2017.

Justin L Poklis. Carl E Wolf, **Michelle R Peace**. Ethanol Concentration in 63 Refillable Electronic Cigarettes Liquid Formulations Determined by Headspace Gas Chromatography with Flame Ionization Detector (HS-GC-FID). Oral Sessions. PittCon, Chicago, IL. March 2017.

James Stewart, Joseph M Turner, Justin L Poklis, **Alphonse Poklis**, **Michelle R Peace**. Metal Composition of Electronic Cigarette Coils Pre- and Post-Heating by Scanning Electron Microscopy. Poster sessions. PittCon, Chicago, IL. March 2017.

*Jesse Lee Patterson, Justin Poklis, Michael Hindle, Joseph M Turner, Carl E Wolf, **Alphonse Poklis, Michelle R Peace***. Evaluation of the Nicotine Particle Size in an Aerosol Formed by an Electronic Cigarette. PittCon, Chicago, IL. March 2017.

Peace MR. "Chasing the Electronic Cigarette Dragon: Characterizing the Evolution of Design and Impact", Southwestern Association of Toxicologists. Wichita KS, 2017.

Mulder HA (presenter), Poklis JL, Wolf CE, **Peace MR.** "Analysis of Dried Blue Lotus Flower (*Nymphaea Caerulea*) Used in an Electronic Cigarette."Southwestern Association of Toxicologists. Wichita KS, 2017.

Jordan Cox. DNA Fragment Migration: Complex Problems Can Have Simple Solutions. Mid-Atlantic Association of Forensic Scientists. Pittsburg, PA. May 2017.

Clare Diester. The Evaluation of a Nanopore Sequencing Platform for Concordance and Reliability in Short Tandem Repeat (STR) Analyses. Mid-Atlantic Association of Forensic Scientists. Pittsburg, PA. May 2017.

2016-2017 Publications:

*Kwon, Y.J., Stanciu, C.E., Philpott, M.K., **Ehrhardt, C.J.*** 2016. Flow cytometry dataset from cells collected from touch surfaces. F1000 Research. 5:390: doi: 10.12688/f1000research.8338.2.

*Wang, C., Stanciu, C.E., **Ehrhardt, C.J.**, Yadavalli, V.* 2016. Evaluation of whole cell fixation methods for the analysis of nanoscale surface features of *Yersinia pestis* KIM. Journal of Microscopy. 263: 260-267. doi: 10.1111/jmi.12387

*Wang, C., Stanciu, C.E., **Ehrhardt, C.J.**, Yadavalli, V.* The effect of growth temperature on the nanoscale biochemical surface properties of *Yersinia pestis*, Journal of Analytical and Bioanalytical Chemistry. 408(20): 5585-91. doi: 10.1007/s00216-016-9659-9.

*Stanciu, C.E., Philpott, M.K., Bustamante, E.E., Kwon, Y.J., **Ehrhardt, C.J.*** Analysis of red autofluorescence (650-670nm) in epidermal cell populations and its potential for distinguishing contributors to 'touch' biological samples. F1000 Research. 5:180. doi: 10.1007/s00216-016-9659-9.

*Wang, C., **Ehrhardt, C.J.**, Yadavalli, V.* Nanoscale characterization of forensically relevant epithelial cells and surface associated extracellular DNA. Forensic Science International. 277: 252-258.

*Philpott, M.K., Stanciu, C.E., Kwon, Y.J., Bustamante, E.E., Greenspoon, S.A., **Ehrhardt, C.J.*** Analysis of cellular autofluorescence in touch samples by flow cytometry: implication for the front end separation of trace mixture evidence. Journal of

Analytical and Bioanalytical Chemistry. 409(17): 4167-4179. doi 10.1007/s00216-017-0364-0.

LR Camarena, BK Glasscock, N Ackley, M Sciarretta, **SJ Seashols**. An Optimized Centrifugal Method for Separation of Semen from Superabsorbent Polymers for Forensic Analysis. *Journal of Forensic Sciences*, 2017 Mar;62(2):411-416.

SJ Seashols-Williams, *C Lewis, C Calloway, N Peace, A Harrison, C Hayes-Nash, S Fleming, Q Wu, and ZE Zehner*. High-throughput miRNA sequencing and identification of biomarkers for forensically relevant biological fluids. *Electrophoresis*. 2016 Oct;37(21):2780-2788.

SJ Seashols-Williams, W Budd, K Sharma, E. Dragescou, and ZE Zehner. miR-9 acts as an OncomiR in prostate cancer through multiple pathways that drive tumour progression and metastasis. Manuscript submitted to PLOS One in December 2015, accepted for publication May 2016.

C Angevine, **SJ Seashols-Williams**, J Reiner. Infrared laser heating applied to nanopore sensing for DNA duplex analysis. *Analytical Chemistry*. 2016 Mar 1;88(5):2645-51.

Simmons, T. (2017) PMI estimation: an overview of techniques (Chapter 10) in *Taphonomy of Human Remains: Forensic Analysis of the Dead and Depositional Environment* (Eds) E.M.J. Schotsmans, N. Márquez-Grant & S. Forbes (editors), pp. 134-142. Chicheshter: John Wiley & Sons, Ltd.

Harrison, K. and **Simmons, T.** (2016) *Forensic Archaeology and Anthropology*. In: *From Crime Scene to Court*, Ed. P.C. White. Chapter 7. Cambridge: Royal Society of Chemistry.

Moffatt, C, **Simmons, T** and Lynch-Aird, J (2016) An Improved Equation for TBS and ADD: Establishing a Reliable Postmortem Interval Framework for Casework and Experimental Studies. *Journal of Forensic Sciences*61(S1):S201-S207

Simmons, T, Goodburn, B and Singhrao, S. Decision Tree Analysis as a Supplementary Tool to Enhance Histomorphological Differentiation when Distinguishing Human from Non-human Cranial Bone in both Burnt and Unburnt States: A feasibility study. *Medicine, Science and the Law* 2016, Vol. 56(1) 36–45

Bharti, M., and **Singh, B.** (In Press) DNA-based identification of forensically important blow flies (Diptera: Calliphoridae) from India. *Journal of Medical Entomology*, doi: 10.1093/jme/tjx084. (DNA-Based-Identification-of-Forensically-Important)

Tomberlin, J. K., Crippen, T.L., Tarone, A. M., Chaudhury, M. F. B., **Singh, B.**, Cammack, J. A., and Meisel, R. P. (2017) A Review of Bacterial Interactions With Blow

Flies (Diptera: Calliphoridae) of Medical, Veterinary, and Forensic Importance. *Annals of the Entomological Society of America*, 110(1), 19-36.

Brundage, A. L., Crippen, T.L., **Singh, B.**, Benbow, M. E., Liu, W., Tarone, A. M., Wood, T. K., and Tomberlin, J. K. (2017) Interkingdom cues by bacteria associated with conspecific and heterospecific eggs of *Cochliomyia macellaria* and *Chrysomya rufifacies* (Diptera: Calliphoridae) potentially govern succession on carrion. *Annals of the Entomological Society of America*, 110(1), 73-82.

Singh, B., Crippen, T., and Tomberlin, J.K. (2017) Chapter 5: An introduction to metagenomic data generation, visualization, and interpretation, pp. 94-126. In *Forensic Microbiology*, Edited by Carter D.O., Tomberlin, J.K., Benbow, M.E., and Metcalf, J.M. Wiley-Blackwell Publishers, USA (in partnership with the American Academy of Forensic Sciences "Focus on Forensics" series).

Poklis JL, Wolf, CE, **Peace MR.** Ethanol Concentration in 56 Refillable Electronic Cigarettes Liquid Formulations Determined by Headspace Gas Chromatography with Flame Ionization Detector (HS-GC-FID). *Drug Testing and Analysis* DOI: 10.1002/dta.2193

Poklis JL, *Mulder HA*, Halquist MS, Wolf CE, Poklis A, **Peace MR.** The Blue Lotus Flower (*Nymphaea Caerulea*) Resin Used in a New Type of Electronic Cigarette, the Re-buildable Dripping Atomizer. *Journal of Psychotropic Drugs* (2017). DOI: 10.1080/02791072.2017.1290304

Peace MR., *Krakiwiak RI*, Wolf CE, Poklis A, Poklis JL. Identification of MDMB-FUBINACA in Commercially Available E-liquid Formulations for Use in Electronic Cigarettes. *Forensic Science International* (2016), doi.org/10.1016/j.forsciint.2016.12.031

Peace MR., *Butler KE*, Wolf CE, Poklis JL, Poklis A. Evaluation of Two Commercially Available Cannabidiol Formulations for use in Electronic Cigarettes, *Frontiers in Pharmacology*, August 29, 2016. doi: 10.3389/fphar.2016.00279.

Morales-Colon E, Hernandez M, Candelario M, Melendez M, **Dawson Cruz T.** (2017). Evaluation of a freezer mill for bone pulverization prior to DNA extraction: an improved workflow for STR analysis. *J Forensic Sci.* (accepted April 2017; in press).

Solomon AD, *Hytinen ME*, *McClain AA*, **Miller MT**, **Dawson Cruz T** (2017) An optimized DNA analysis workflow for the sampling, extraction, and concentration of DNA obtained from archived latent fingerprints. *J Forensic Sci.* (in press; doi: 10.1111/1556-402913504).

Hytinen ME, *Solomon AD*, **Miller MT**, **Dawson Cruz T** (2017) Methods for Obtaining high quality touch DNA from a nonporous surface after latent fingerprint collection. *J. Forensic Ident* 67(1):71-84.

Cox JO, Sikes T, **Connon C**, Jackson K, Ouyang Y, Strachan B, Nelson D, Thompson B, Sloane H, Landers JP, **Dawson Cruz T**. (2016) A novel, integrated forensic microdevice on a rotation-driven platform: buccal swab to PCR product in less than two hours. Electrophoresis 37(23-24):3046-3058.