



**SAM HOUSTON STATE  
UNIVERSITY**

**DEPARTMENT OF  
FORENSIC SCIENCE**

**SCIENTIFIC  
PUBLICATIONS**

## Academic Year 2019-2020

Amanda Jenkins and Madeleine Gates. *Hallucinogens and Psychedelics* in **Principles of Forensic Toxicology**. Ed. by Barry Levine and Sarah Kerrigan, 5th edition, Zurich: Springer International (Aug 2020).

Emily Fairbanks, Jennifer Turner, Junkun Ma and Jorn Yu. **Development of a Novel Finger-Trigger Interface for Trigger Pull Measurement**. *Journal of Forensic Science*, epub ahead of print DOI: 10.1111/1556-4029.14538 (Aug 2020).

Jessica Cheng, Madeline Roman and Rachel Houston. **Genetic Differentiation of Marijuana and Hemp**. *Proceedings from the Association of Forensic DNA Analysts and Administrators* (Aug 2020).

Lindsay Glicksberg and Sarah Kerrigan. *Derivatization* in **Principles of Forensic Toxicology**. Ed. by Barry Levine and Sarah Kerrigan, 5th edition, Zurich: Springer International (Aug 2020).

Patrick Buzzini and Sarah Kerrigan. *Statistics for Forensic Toxicology* in **Principles of Forensic Toxicology**. Ed. by Barry Levine and Sarah Kerrigan, 5th edition, Zurich: Springer International (Aug 2020).

Ryan Gutierrez, Bobby LaRue and Rachel Houston. **Alternative Processing Techniques for Highly Degraded Samples**. *Proceedings from the Association of Forensic DNA Analysts and Administrators* (Aug 2020).

Sarah Kerrigan and Bruce Goldberger. *Opioids* in **Principles of Forensic Toxicology**. Ed. by Barry Levine and Sarah Kerrigan, 5th edition, Zurich: Springer International (Aug 2020).

Andra Lewis, Chris Palenik, Skip Palenik and Patrick Buzzini. **The Differentiation of Macroscopically Similar Black Fibers through Characterization of Nylanthrene Dyes using UV-Visible Microspectrophotometry and Thin Layer Chromatography**. *Proceedings from the Center for Forensic Research and Education's Online Trace Symposium* (Jul 2020).

Britni Skillman and Sarah Kerrigan. **CYP450-Mediated Metabolism of Suvorexant and Investigation of Metabolites in Forensic Case Specimens**. *Forensic Science International*, 312:110307 (Jul 2020).

Britni Skillman and Sarah Kerrigan. **Drug-Mediated Ion Suppression and Mitigation of Interferences Using Liquid Chromatography-Quadrupole/Time of Flight Mass Spectrometry (LC-Q/TOF-MS) and Liquid Chromatography Tandem**

- Mass Spectrometry (LC-MS/MS).** Journal of Chromatography B, DOI 10.1016/j.jchromb.2020.122265 (Jul 2020).
- Erin Karschner, Madeleine Swortwood-Gates, and Marilyn Huestis. **Identifying and Quantifying Cannabinoids in Biological Matrices in the Medical and Legal Cannabis Era.** Clinical Chemistry, 66(7), 888-914 (Jul 2020).
- Madeline Roman and Rachel Houston. **Investigation of Chloroplast Regions rps16 and clpP for Determination of *Cannabis sativa* Crop Type and Biogeographical Origin.** Legal Medicine, epub ahead of print DOI: 10.1016/j.legalmed.2020.101759 (Jul 2020).
- Melissa Rae Garcia, Madeleine Swortwood, Christine Nicole Aune and Kaashif Aqeeb Ahmad. **Maternal Poppy Seed Tea Ingestion and Ensuing Neonatal Abstinence Syndrome.** Neonatology, epub ahead of print DOI:10.1159/000508446 (Jul 2020).
- Morgan Carpenter and Patrick Buzzini. **On the Effect of Data Fusion Methods for the Classification of Colored Automotive Paint Mixtures using Visible Microspectrophotometry and Raman Spectroscopy.** Proceedings from the Center for Forensic Research and Education's Online Trace Symposium (Jul 2020).
- Michael Baumann, Nancy Garibay, Michael Truver, Christina Smith and Madeleine Swortwood. **Pharmacodynamic Effects, Pharmacokinetics, and Metabolism of the Novel Synthetic Opioid, U-47700, in Male Rats.** Proceedings from the College on Problems of Drug Dependence (Jun 2020).
- Michael Truver, Christina Smith, Nancy Garibay, Theresa Kopajtic, Madeleine Swortwood and Michael Baumann. **Pharmacodynamics and Pharmacokinetics of the Novel Synthetic Opioid, U-47700, in Male Rats.** Neuropharmacology, epub ahead of print DOI: 10.1016/j.neuropharm.2020.108195 (Jun 2020).
- Blake Young, Madeline Roman, Bobby LaRue, David Gangitano and Rachel Houston. **Evaluation of 19 Short Tandem Repeat Markers for Individualization of *Papaver somniferum*.** Science & Justice, 60(3), 253-262 (May 2020).
- Stephanie Basiliere and Sarah Kerrigan. **CYP450-Mediated Metabolism of Mitragynine and Investigation of Metabolites in Human Urine.** Journal of Analytical Toxicology, 44(4), 301-313 (May 2020).
- Stephanie Basiliere, Justin Brower, Laura Friederich, Ruth Winecker and Sarah Kerrigan. **Identification of Five Mitragyna Alkaloids in Blood and Tissue using Liquid**

- Chromatography-Quadrupole/Time of Flight Mass Spectrometry.** Forensic Toxicology, 38, 420-435 (May 2020).
- Stephanie Basiliere and Sarah Kerrigan. **Temperature and pH-Dependent Stability of Mitragyna Alkaloids.** Journal of Analytical Toxicology, 44(4), 314-324 (May 2020).
- Britni Skillman and Sarah Kerrigan. **Identification of Suvorexant in Blood Using LC-MS/MS: Important Considerations for Matrix Effects and Quantitative Interferences in Targeted Assays.** Journal of Analytical Toxicology, 44(3), 245-255 (Apr 2020).
- Esiri Tasker, Madeline Roman, Mary Kosile, Carrie Mayes, Sheree Hughes and Bobby LaRue. **Efficacy of "touch" DNA Recovery and Room-temperature Storage from Assault Rifle Magazines.** Legal Medicine (Tokyo), 43, 101658 (Mar 2020).
- Jessica Lynn Ayala and Sarah Kerrigan. **HRMS-based Drug Screening in Forensic Toxicology: Data Acquisition Comparison.** Proceedings from the NIJ Forensic Science Research and Development Symposium at Pittcon (Mar 2020).
- Michael Truver and Madeleine Swortwood-Gates. **Long-term Stability of Novel Synthetic Opioids in Blood.** Forensic Science International, 308, 110175 (Mar 2020).
- Michelle Harrel and Sheree Hughes-Stamm. **A Powder-free DNA Extraction Workflow for Skeletal Samples.** Journal of Forensic Sciences, 65(2), 601-609 (Mar 2020).
- Stephanie Basiliere and Sarah Kerrigan. **Identification of Metabolites and Potential Biomarkers of Kratom in Urine.** Journal of Chromatography B, 1140(1), 121971 (Mar 2020).
- Andra Lewis, Chris Palenik, Skip Palenik and Patrick Buzzini. **Characterization of Nylanthrene Dyes in the Differentiation of Macroscopically Similar Black Fibers using Light Microscopy and UV-Visible Microspectrophotometry.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
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- Christina Smith and Madeleine Swortwood. **Chiral Separation of Methylphenidate, Ethylphenidate, and Ritalinic Acid in Blood.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Coral Loockerman, Sheree Hughes-Stamm and Rachel Houston. **Direct Polymerase Chain Reaction Using MicroFLOQ® Direct Swabs with a Modified Qiagen® Investigator 24plex GO! Protocol from Decomposing Human Remains for Disaster Victim Identification Applications.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Jessica Ayala and Sarah Kerrigan. **Comparison of Data Acquisition Methods for High Resolution Mass Spectrometry Drug Screening.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Kaitlyn Palmquist and Madeleine Swortwood. **Quantification of Furanyl Fentanyl and its Metabolites in Human and Rat Plasma using LC-MS/MS.** Journal of Analytical Toxicology, epub ahead of print DOI: 10.1093/jat/bkaa013 (Feb 2020).
- Madeline Roman, Ryan Gutierrez, Carrie Mayes, Bobby LaRue and Rachel Houston. **Evaluation of the Investigator® 26plex QS STR Kit and Comparison with Two Commercially Available STR Kits.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Madison Schackmuth and Sarah Kerrigan. **Physiochemical Characterization of 19 Fentalogs: Lipophilicity.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Morgan Carpenter and Patrick Buzzini. **Data Fusion from Spectroscopic Techniques for the Discrimination of Colored Automotive Paint Mixtures.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Nicholas Frey, Carilyn Santisteban, Khalid Noman, Mingkui Wei and Jorn Chi-Chung Yu. **The Development of an Intelligent Mobile Application to Enhance the Quality of Latent Fingerprint Acquisition.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
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- Patrick Buzzini. **The Methodology of Criminalistics Developed...By Crossing Borders.** Proceedings at the Young Forensic Scientists Forum from the American Academy of Forensic Sciences (Feb 2020).

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- Ryan Gutierrez, LeAnn Michelle Harrel, Sheree Hughes-Stamm, Rachel Houston and Bobby LaRue. **Mitochondrial Analysis of Challenging Samples Utilizing the ForenSeq™ mtDNA Control Region Solution on the MiSeq FGx.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Stephanie Basiliere and Sarah Kerrigan. **Identification of Mitragyna Alkaloids and Metabolites as Biomarkers of Kratom Use in Postmortem Urine Samples.** Proceedings from the American Academy of Forensic Sciences (Feb 2020).
- Michael Truver, Shimpei Watanabe, Anna Åstrand, Svante Vikingsson, Henrik Green, Madeleine Swortwood and Robert Kronstrand. **5F-MDMB-PICA Metabolite Identification and Cannabinoid Receptor Activity.** Drug Test Analysis, 12(1), 127-135 (Jan 2020).
- Colin Aitken, Ya-Ting Chang, Patrick Buzzini, Grzegorz Zadora and Genevieve Massonnet. **The Evaluation of Evidence for Microspectrophotometry Data using Functional Data Analysis.** Forensic Science International, 305, 110007 (Dec 2019).
- Michele Di Nunzio, Rachel Houston, Madeline Roman, Ciro Di Nunzio, David Gangitano and Carme Barro-Feixat. **European Validation of a Cannabis sativa 13-locus STR Multiplex Kit for Genetic Identification: A Preliminary Study.** Forensic Science International: Genetics Supplement Series, 7(1), 224-226 (Dec 2019).
- Jonna Berry, Ashley Gilbert and Justin Grodnitzky. **Cases of Kava Impairment in Iowa Drivers.** Journal of Forensic Sciences, 64(6), 1943-1949 (Nov 2019).
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- Madeline Roman, David Gangitano and Rachel Houston. **Characterization of New Chloroplast Markers to Determine Biogeographical Origin and Crop Type of Cannabis sativa.** International Journal of Legal Medicine, 133(6), 1721-1732 (Nov 2019).

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- Kelsey Duxbury and Madeleine Swortwood. **Comparison of Extraction Methods for Novel Synthetic Opioids.** Proceedings of the Society of Forensic Toxicologists (Oct 2019).
- Madeline Roman, David Gangitano and Rachel Houston. **Development of Cannabis sativa Autosomal and Organelle Genotyping Methods for Forensic and Intelligence Purposes.** Proceedings of the Southeastern Regional Meeting of the American Chemical Society (Oct 2019).
- Michael Truver, Ashley Gilbert and Madeleine Swortwood. **Long-Term Stability of Novel Synthetic Opioids in Blood.** Proceedings of the Society of Forensic Toxicologists (Oct 2019).
- Michael Truver, Shimpei Watanabe, Anna Åstrand, Svante Vikingsson, Henrik Green, Madeleine Swortwood and Robert Kronstrand. **5F-MDMB-PINACA and 5F-MDMB-PICA Metabolite Identification and Cannabinoid Receptor Activity.** Proceedings of the Society of Forensic Toxicologists (Oct 2019).
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- Stephanie Basiliere and Sarah Kerrigan. **Stability of Mitragynine and 7-Hydroxymitragynine.** Proceedings of the Society of Forensic Toxicologists (Oct 2019).
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- Charia Talia, Panagotis Filis, N. Walker, Ugo Soffientini, Baltasar Lucendo-Villarin, Alex Douglas, David Hay, Sophie Shaw, John Iredale, Madeleine Swortwood, Marilyn Huestis, Michelle Bellingham, B. van der Burg, Lisa Connolly, Peter O'Shaughnessy, Paul Fowler. **Hepatic IGF Signaling is Dysregulated by in utero Exposure to Maternal Smoking.** Proceedings of the Congress of the European Societies of Toxicology (Sept 2019), Helsinki, Finland.
- Coral Loockerman, Sheree Hughes-Stamm and Rachel Houston. **Direct PCR using microFLOQä Direct Swabs with a Modified QIAGEN Investigator 24plex**



- GO! Protocol from Decomposing Human Remains for DVI Applications.** Proceedings of the International Society of Forensic Genetics (Sept 2019), Prague, Czech Republic.
- Coral Loockerman, Sheree Hughes-Stamm and Rachel Houston. **A Modified Direct PCR Protocol for DVI Applications using microFLOQ® Direct Swabs from Decomposing Human Remains Coupled with the Qiagen Investigator 24plex GO! Kit.** Proceedings of the International Symposium on Human Identification (Sept 2019).
- Esiri Tasker, Carrie Mayes, Bobby LaRue and Sheree Hughes-Stamm. **Collection and Direct Amplification Methods using the GlobalFiler™ Kit for DNA Recovered from Common Pipe Bomb Substrates.** Science & Justice, 59(5), 580-584 (Sept 2019).
- Jessica Winborn and Sarah Kerrigan. **Stability and Hydrolysis of Desomorphine-Glucuronide.** Journal of Analytical Toxicology, 43(7), 536-542 (Sept 2019).
- Madeline Roman, Michele Di Nunzio, Rachel Houston, Bobby LaRue and David Gangitano. **Characterization of New Chloroplast Polymorphisms to Determine Biogeographical Origin and Crop Type of Cannabis sativa Samples.** Proceedings of the International Society of Forensic Genetics (Sept 2019), Prague, Czech Republic.
- Madeline Roman, Ryan Gutierrez, Carrie Mayes, Bobby LaRue and Rachel Houston. **Evaluation of the Investigator® 26plex QS STR Kit and Comparison with Two Commercially Available STR Kits.** Proceedings of the International Symposium on Human Identification (Sept 2019).
- Michael Truver, Kaitlyn Palmquist and Madeleine Swortwood. **Oral Fluid and Drug Impairment: Pairing Toxicology with Drug Recognition Expert Observations.** Journal of Analytical Toxicology, 43(8), 637-643 (Sept 2019).
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- Michelle Harrel, Carrie Mayes, Rachel Houston, Amy Sorensen Holmes, Ryan Gutierrez and Sheree Hughes-Stamm. **Effectiveness of STR Quality Sensors to Inform Rework Strategies for Challenging Database and Casework Samples using a**



**Semi-Automated Workflow.** Proceedings of the International Symposium on Human Identification (Sept 2019).

Ryan Gutierrez and Bobby LaRue. **Alternative DNA Profiling Strategies for Rootless Hair Shafts.** Proceedings of the International Symposium on Human Identification (Sept 2019).

Ryan Gutierrez, Madeline Roman, Michelle Harrel, Sheree Hughes-Stamm, Rachel Houston and Bobby LaRue. **Improved Mitochondrial Control Region Analysis of Degraded Bone and Hair Samples for the Miseq FGX.** Proceedings of the International Symposium on Human Identification (Sept 2019).

## Academic Year 2018-2019

- Carrie Polston, David Thompson, Patrick Buzzini, Yuriy Agalidii and Arif Mamedov. **Assessing the Impacts of Induction Spatial Effects on Magnetic Flux Measurements of Toners.** Proceedings of the American Society of Questioned Document Examiners (Aug 2019).
- Clarra Moore and Patrick Buzzini. **Analysis of Colored Felt-tipped Blending Marker Ink using Gray Value Measurements of Visual Spectral Data.** Proceedings of the American Society of Questioned Document Examiners (Aug 2019).
- Michelle Harrel, Carrie Mayes, Rachel Houston, Amy Sorensen Holmes, Ryan Gutierrez and Sheree Hughes-Stamm. **Evaluation of a Semi-Automated Workflow and Effectiveness of STR Quality Sensors to Inform Rework Strategies for Challenging Database and Casework Samples.** Proceedings of the Association of Forensic DNA Analysts and Administrators (Aug 2019).
- Patrick Buzzini, James Curran and Carrie Polston. **The Discrimination of Inkjet Printer Inks using microRaman Spectroscopy Part II: Comparing Visual Inspection and Different Variants of Linear Indiscriminant Analysis Methods.** Proceedings of the American Society of Questioned Document Examiners (Aug 2019).
- Andra Lewis, Justin Day and Patrick Buzzini. **Conceptualization of Assessing the Evidential Value of Vehicular Transmission Fluids, Brake Fluids, and Lubricating Greases.** Proceedings of the Inter/Micro Conference (Jun 2019).
- Carrie Mayes, Rachel Houston, Bobby LaRue, Sarah Seashols-Williams and Sheree Hughes-Stamm. **The Application of Targeted mRNA Massively Parallel Sequencing for Body Fluid Identification on Challenging and Mock Casework-type Samples.** Proceedings of the Human Identification Solutions (Jun 2019), Kobe, Japan.
- Esiri Tasker, Carrie Mayes, and Sheree Hughes-Stamm. **microFLOQ®: Collection and Direct Amplification Methods Using the GlobalFiler™ Kit from Common Pipe Bomb Substrates.** Proceedings of the Human Identification Solutions (Jun 2019), Kobe, Japan.
- Frank Qingzhong Liu and Jorn Chi-Chung Yu. **Differentiate Hemp and Non-hemp Cannabis by Headspace Cannabinoid Analysis.** Proceedings of the Forensic Science Research Innovation to Implementation Symposium (NIST) (Jun 2019).

- Jessica Winborn and Sarah Kerrigan. **Analysis of Desomorphine in Urine Using Liquid Chromatography-Tandem Mass Spectrometry.** Journal of Analytical Toxicology, 43(5), 340-345 (Jun 2019).
- Patrick Buzzini, James Curran and Carrie Polston. **The Classification of Raman Patterns of Inkjet Printer Inks: Comparing Visual Inspection and Different Variants of Linear Discriminant Analysis Methods.** Proceedings of the Inter/Micro Conference (Jun 2019).
- Patrick Buzzini, Meggan King, Sebastian Sparenga and Gary Laughlin. **An Update on the Effect of Ultraviolet Radiation on the Degradation of Dyed Fibers as a Function of Time using UV-Vis Microspectrophotometry.** Proceedings of the Inter/Micro Conference (Jun 2019).
- Britni Skillman and Sarah Kerrigan. **Side-by-Side Comparison of LC-Q/TOF-MS and LC-MS/MS Validation Parameters for the Detection of Suvorexant in Blood.** Proceedings of the Southwestern Association of Toxicologists (May 2019).
- Madeleine Swortwood. **Oral Fluid Workshop - From the Roadside to the Courtroom.** Proceedings of the SOFT Continuing Education Regional Workshop (May 2019).
- Madison Schackmuth and Sarah Kerrigan. **Immunoassay-based Detection of Fentanyl Analogs in Forensic Toxicology.** Proceedings of the Southwestern Association of Toxicologists (May 2019).
- Michelle Harrel, David Gangitano and Sheree Hughes-Stamm. **The Effects of Extra PCR Cycles When Amplifying Skeletal Samples with the GlobalFiler® PCR Amplification Kit.** International Journal of Legal Medicine, 133(3), 745-750 (May 2019).
- Christina Smith, Michael Truver and Madeleine Swortwood. **Quantification of U-47700 and its Metabolites in Plasma by LC-MS/MS.** Journal of Chromatography B, 1:1112, 41-47 (Apr 2019).
- Joan Bytheway and Jennifer Kiely. **The Effects of Fire on the Human Body.** Proceedings of the Wisconsin Association of Homicide Investigators (Apr 2019).
- Kaitlyn Palmquist and Madeleine Swortwood. **Data-independent Screening Method for 14 Fentanyl Analogs in Whole Blood and Oral Fluid Using LC-QTOF-MS.** Forensic Science International, 297, 189-197 (Apr 2019).
- Aikaterini Zafeiri, Panagiotis Filis, Sophie Shaw, John Iredale, Madeleine Swortwood, Rod Mitchell, David Hay, Peter O'Shaughnessy and Paul Fowler. **Maternal Smoking during Pregnancy and Changes in Prostaglandin Enzymes in the**

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- Carrie Mayes, Rachel Houston, Bobby LaRue, Sarah Seashols-Williams and Sheree Hughes-Stamm. **Evaluating the Stability and Persistence of mRNA and miRNA for Body Fluid Identification in Forensic Samples.** Proceedings of the NIJ Forensic Science Research and Development Symposium at Pittcon (Mar 2019).
- Carrie Mayes, Rachel Houston, Sarah Seashols-Williams, Bobby LaRue and Sheree Hughes-Stamm. **The Stability and Persistence of Blood and Semen mRNA and miRNA Targets for Body Fluid Identification in Environmentally Challenged and Laundered Samples.** Legal Medicine (Tokyo), 38, 45-50 (Mar 2019).
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- Andra Lewis. **Crime Scene Reconstruction Based on the Interpretation of Physical Evidence.** Proceedings of the Association of Crime Scene Reconstruction (Feb 2019).
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- Carrie Polston, David Thompson and Patrick Buzzini. **Assessing the Impacts of Induction Spatial Effects on Magnetic Flux Measurements of Toners.** Proceedings of the American Academy of Forensic Sciences (Feb 2019).

- Clarra Moore and Patrick Buzzini. **Evaluation of Gray Value Measurements of Visual Spectral Data to the Characterization of Alcohol-based Inks from Colored Felt-tipped Blending Markers.** Proceedings of the American Academy of Forensic Sciences (Feb 2019).
- Esiri Tasker, Carrie Mayes, and Sheree Hughes-Stamm. **MicroFLOQ®: Collection and Direct Amplification Methods Using the GlobalFiler™ Kit for DNA Recovered From Common Pipe Bomb Components.** Proceedings of the American Academy of Forensic Sciences (Feb 2019).
- Jessica Winborn and Sarah Kerrigan. **Quantitative Analysis of Desomorphine in Blood and Urine Using Solid Phase Extraction and Gas Chromatography-Mass Spectrometry.** Journal of Chromatography B, 1106-1107, 43-49 (Feb 2019).
- Jorn Chi-Chung Yu. **A Chemical Analysis of Controlled Substances Using Automated Headspace Solid-Phase Microextraction-Gas Chromatography/Mass Spectrometry.** Proceedings of the NIJ Forensic Science Research and Development Symposium at the American Academy of Forensic Sciences (Feb 2019).
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- Meggan King, Sebastian Sparenaga, Gary Laughlin and Patrick Buzzini. **The Effect of Ultraviolet Radiation on the Microspectrophotometry (MSP) of Dyed Textile Fibers: Spectral Alteration Categories.** Proceedings of the American Academy of Forensic Sciences (Feb 2019).

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- Morgan Carpenter and William Davis. **The Determination of Weathering Levels of Gasoline Using Various Methods of Analysis.** Proceedings of the American Academy of Forensic Sciences (Feb 2019).
- Patrick Buzzini, James Curran and Carrie Polston. **The Classification of Raman Patterns from Inkjet Printer Inks Using Visual Comparisons of Spectra and Different Statistical Methods.** Proceedings of the American Academy of Forensic Sciences (Feb 2019).
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- Christina Smith and Madeleine Swortwood. **Quantification of U-47700 and its Metabolites in Plasma by LC-MS/MS.** *Proceedings of the Society of Forensic Toxicologists* (Oct 2018).



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