RESUME

BRUCE R. McCord, Ph.D.
Professor of Analytical and Forensic Chemistry
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Research: Development of methods for forensic DNA analysis, explosives residue detection and trace analysis of controlled substances. Forensic, genetic, and toxicological applications of chromatographic science. Areas of research include the development of procedures for DNA typing by capillary electrophoresis, development of microfluidic separation systems, and other applications in bioanalytical chemistry and nanotechnology. Other research areas include detection methods for improvised explosives and trace detection of drugs in biological fluids using liquid based separation techniques and electrospray mass spectrometry.

Teaching: Classes taught include Forensic Chemistry, DNA Typing, Instrumental Analysis, Chromatography, Arson and Explosives Analysis, and graduate and undergraduate research.

EDUCATION

1981 B.S. in Chemistry with Honors, The College of William and Mary
1986 Ph.D. in Analytical Chemistry, The University of Wisconsin-Madison
Research Advisor: James W. Taylor
Dissertation: Solvent and Ion Pairing Effects on the Chlorine Kinetic Isotope Effect of t-Butyl Chloride.

PRIOR POSITIONS
2008-present Professor of Chemistry, FIU, Miami, FL
2004-2007 Associate Professor of Chemistry, FIU, Miami, FL
1998-2004 Associate Professor of Chemistry, Ohio University, Athens, Ohio, 45701
1989-1998 Research Chemist, The FBI Laboratory, FSRTC, Quantico, VA 22135
1987-1988 Group Leader for Analytical Development, Syntex Pharmaceuticals, Bahamas
1986-1987 Senior Chemist, CIBA-Geigy, McIntosh, Alabama

MEMBERSHIP IN PROFESSIONAL ORGANIZATIONS

Alpha Chi Sigma Professional Chemistry Fraternity
American Academy of Forensic Sciences

AWARDS AND RECOGNITION

Editorial Advisory Board, **1994-1998** "Journal of Capillary Electrophoresis" ISC Technical Publications Inc. Shelton, CT

Labs Award -1995 Federal Bureau of Investigation - for contributions to quality in the laboratory.
Editorial Board 1995-1999, "Electrophoresis" VCH Verlagsgesellschaft mbH
Featured Scientist - August 1997 - Journal of Capillary Electrophoresis - for contributions to the advancement of forensic analytical chemistry.
Certificate of Appreciation, **April 2002** Alpha Chi Sigma – for distinguished service in the establishment of the Gamma Nu chapter of the Professional Chemistry Fraternity
Commissioner – 2002-2004 Forensic Science Education Programs Accreditation Commission, American Academy of Forensic Sciences,
Sigma Xi - May 2003 Ohio University
Chair, Forensics - Annual Meeting, FACSS October 2003
Tenure October 2003, Ohio University, **Fall 2004,** FIU
Editorial Board 2008-2018 Journal of Forensic Sciences
Editorial Board 2008- 2014 Electrophoresis
Paul Kirk Award 2008 - For distinguished service and contributions to the field of Criminalistics. American Academy of Forensic Sciences
Fellow 2010 - American Academy of Forensic Sciences
Scientific Advisory Board- Green Mountain DNA conference 2011-
Chair 2011 Latin American Conference on Capillary Electrophoresis, Hollywood, FL
Co-Chair 2012 Florida Forensic Forum, FIU, Miami, FL
Member, **2012-2014** North Carolina Forensic Science Advisory Board
Top DNA Analysis Professor 2013 Forensics Colleges and Universities, http://www.forensicscolleges.com/blog/profs/15-top-dna-analyst-professors
FIU Top Scholar Honoree -2014 Florida International University
Deputy Editor 2014 – Present Electrophoresis
Member, Biological Methods Subcommittee – **2014** Organization of Scientific Area Committees, (OSAC), National Institute of Standards and Technology
One of 10 Forensic Chemistry Professors you should know 2015, Forensics Colleges and Universities, http://www.forensicscolleges.com/blog/profs/forensic-chemistry-professors
Member, OSAC AAFS Liaison Committee 2015
Editorial Board 2016- present J. Forensic Chemistry
Member, AAFS Opioid Committee 2016- Present
College of Arts, Sciences and Education (CASE) Award for Research, **2017** Florida International University
Faculty Award for Excellence in Research and Creative Activities - 2017 Florida International University
Thought Leader – Pittcon, Orlando, 2018.
Qiagen Ambassador for Emerging Technologies , Qiagen, April 30, 2019**.**
Expertscape top published author in Forensic Medicine from 2009 through 2019 based on contributions to 23 articles on the topic. (0.08% of 72,797 published authors), ranked 9th in the world in forensic genetics.
Member, Florida International University Research Foundation, Inc. November 2019
CASE Award for Community Engagement, October 2020, Florida International University
Editor- *Forensic Sciences* MDPI 4/29/21- present
Faculty Award for Excellence in Mentoring, 10/2023, Florida International University

GRADUATE STUDENTS MENTORED

FBI Academy:

1. **John Butler, Ph.D.** 1995 University of Virginia, "Sizing and Quantitation of PCR Products by Capillary Electrophoresis"
2. **Alice Isenberg, Ph.D.** 1997 University of Virginia, "Separation of PCR Amplified DNA by Capillary Electrophoresis: A study of the effects of polymer characteristics and separation parameters"

(Program in Cooperation with Professor Ralph Allen, University of Virginia, funded through NIJ grant #93-IJ-CX-0030)

Ohio University:

Rob Heramb, **MS.** 2001 Ohio University, "The simultaneous analysis of anions and cations in explosives residue using ion chromatographic techniques"

3. **John Mathis, Ph.D**. 2004 Ohio University, "Development of chromatography and mass spectrometry methods for explosives analysis"
4. **Ahmed Al Najjar**, **Ph.D**. 2004, Ohio University, "Enhancement of sensitivity in capillary electrophoresis: Forensic and pharmaceutical applications"
5. **Denise Chung**, **Ph.D**. 2004, Ohio University, "The development of novel STR miniplex primer sets for the analysis of degraded and compromised DNA samples"
6. **Brittany Hartzell**, **Ph.D**. 2004, Ohio University "DNA manipulation and characterization for nanoscale electronics"
7. **Sandra Bishop**, **Ph.D**. 2004, Ohio University "The use of capillary electrochromatography in the analysis of benzodiazepines and GHB."
8. **Kristy Hopper**, **Ph.D**. 2004, Ohio University "The application of ion chromatographic techniques in the analysis of low explosives."

Florida International University:

Jessica Heiser, MS 2007 FIU The Effects of Diltiazem in Cocaine Analysis
Ada Nunez, MS 2008 FIU, Concordance study for Asian samples using MiniSTRs and commercial STR kits
Sacha Dehere, **MS** 2008 FIU, A study of the electrospray ionization of benzodiazepines classified as low dose and their subsequent fragmentation using a time-of-flight mass spectrometer
Rayna Hebard, MS 2008 FIU, An analysis of the effect of hair treatments on the recovery of mitochondrial DNA.

9. **Kerry Opel - Ph.D.** 2008 FIU Application of reduced-size short tandem repeat primer sets in the analysis of human DNA from degraded and compromised samples

Carla Turner – MS 2009 FIU Microfluidic detection of drugs of abuse
Sarah Hughes – **MS** 2010 FIU DNA typing and quantitation using real time PCR"

10. **Megan Bottegal Ph.D**. 2010 The detection of explosives residue

Heather Eric - MS 2010 A comparison of real time quantification techniques
Robyn Thompson –MS 2010 An analysis of efficiency and melt curve effects on QPCR inhibition
Tania Madi – MS 2011 Tissue specific DNA methylation patterns in forensic biofluids using bisulfite modification and pyrosequencing

11. **Maurice Aboud** – **PhD** 2012 Microfluidic systems for DNA analysis

Jorge Quintana – **MS** 2012 Antibody capture CE/MS of benzodiazepines
Arianna Pionzio MS 2013 effect of length and sequence in real time PCR
Paula Bolivar – MS 2013 Trace DNA detection in fingerprints

12. **Jennifer Thomas** – **PhD** 2013, UPLC of organic gunshot residue

13. **Britt Turnquest** – **PhD** 2013, In-line derivatization for CE-LIF of phenethylamines.

Bingxue Zhang – MS 2014**,** CE of algal toxins

14. **Deepthi Nori** – **PhD** 2014, Rapid differential extraction using pressure cycling
15. **Hanzhou Fu** – **PhD** 2014, CE and CEC/MS for Drugs and Toxins.
16. **Kelley Peters** – **PhD** 2014, Presumptive and confirmatory methods for the detection of improvised explosives
17. **Erica Doctor- PhD** 2014, Development of a SERS method for benzodiazepines in urine
18. **Lilliana Moreno** –**PhD** 2015 The effect of sample matrices on DNA Processing
19. **Deborah Silva – PhD 2015** (Joint program with Pontifical Catholic University of Rio Grande do Sul (**PUCRS**)) Forensic applications of tissue typing and age determination using epigenetic markers
20. **Inge Corbin PhD 2016**– Analysis of improvised explosives by electrospray ionization–mass spectrometry and microfluidic techniques

Vanessa Martinez- MS 2016 Pressure based differential extraction and antibody based cell capture

Meghan Roig, MS 2017 – pressure based extraction of DNA

21. **Ling Wang** – **PhD 2017** Drug detection using paper microfluidics and aptamer binding
22. **Joana Antunes – PhD 2018** Epigenetic markers for tissue typing of body fluids.
23. **Georgiana Gibson-Daw PhD 2018** – Rapid direct PCR of crime scene samples
24. **Kathryn Chabaud PhD 2019** - Paper microfluidic systems for detection of explosives residue
25. **Hussain Alghanim PhD 2109** – Development of DNA Methylation Markers to Infer Age, Smoking Status and Body Fluid Types for Forensic Application

Mallory Baud MS, 2019– rapid direct methods for multiplexed PCR

26. **Thaddeus Mostowtt PhD, 2020** – Surface Enhanced Raman Spectroscopy of designer drugs
27. **Chiara Deriu, PhD, 2020** -SERS as a nanoscale adsorption phenomenon: development of tailored nanomaterials for applications in drug detection.
28. **Quentin Gauthier, PhD, 2020**- Development of a DNA methylation multiplex assay for body fluid identification and age determination.
29. **Rosa Cromarte PhD, 2021** – Paper based electrochemical sensors for opioids
30. **Fabiana Taglia, PhD, 2022** – Rapid Direct PCR and microwave extraction.

Daniel Rubin, MS, 2022- GC/MS and SERS detection of NPS drugs.

31. **Mirna Ghemrawi, PhD, 2022**- Epigenetics, species ID and metagenomics
32. **Nicole Fernandez Tejero, PhD, Novel methods for DNA screening using rapid DNA, epigenetics and digital PCR 2023**
33. **Mario Vendrell Dones, PhD,** SERS for the detection of synthetic cathinones in seized drugs 2023
34. **Karin Crenshaw, PhD,** Improving DNA recovery from fired cartridge casings. 2023
35. **Sevde Dogruer, PhD,** SERS and paperspray detection of fentanyl analogs, 2024

Joseph Ta, MS, SERS detection of fentanyl in oral fluids, 2024

36. **Agnes Winokur,** GC/FTIR of Fentanyl Analogs, with PI Jose Almirall (ret.) 2024

TJ Dickson, MS Capillary Electrophoresis of fentanyl analogs**.** 2024

Jaedon Corredor- SERS for oral fluid detection of Nitazines 2025

(36 PhD students mentored)
(20 MS students mentored)

FORMER POST DOCTORAL ASSOCIATES AND VISITING SCIENTISTS

Sharon Hinton, MS A dual channel fluorescence detector for DNA analysis
Federica Crivellente, **PhD** Development of New Analytical Buffer Systems for DNA Typing by Capillary Electrophoresis 2/99- 6/01.
Yin Shen, PhD Development of New Analytical Buffer Systems for DNA typing by Capillary Electrophoresis 8/01-3/02
Jiri Drabek, PhD Reduced size DNA markers for the analysis of degraded DNA 1/03-12/03
M. Younas Khokhar, **PhD** Fluorescent detection of drugs of abuse 4/05-4/06
Ahmed Al Najjar, PhD Microfluidic detection of drugs of abuse, 6/08-8/08
Maximilien Blas, **PhD**Microfluidic detection of drugs of abuse, 10/06-8/08
Maribel Funes, PhD – DNA inhibition and degradation pathways 3/21/08-8/21/09
Silvia Zoppis, MD - Effects of degradation and Low Copy # on Y STR analysis 20009
Jing Wang, MS–Magnetic bead hybridization 2010
Chloe DePerre, PhD – Electrospray MS for inorganic explosive detection 2010-2011
Robyn Thompson, MS – PCR inhibition 2011
Hye Hyun Oh, MS – Rapid, direct PCR 2012
Pero Dimsoski, PhD – Differential extraction of mixed DNA by pressure cycling 2012-2013
Patricia Albani- MS 2013– rapid Y STR typing
Gustavo Merola, MS – Capillary Electrophoresis Mass spectrometry of cathinone designer drugs. 2013.
Giacomo Musile MS – Paper microfluidics for drugs of abuse testing, fall 2014.
Marcelo Firmino de Oliveira, **PhD** - Screen printed electrochemical detection of drugs of abuse, 2014.
Steve Lee, PhD – rapid direct PCR, 2016
Illaria Pirazzini, MS paper microfluidic determination of smokeless powders 2016.
Marco Antonio Balbino, PhD - Drug detection by electrochemical sensing 2017
Izabel Eleotério, PhD - Drug Detection by electrochemical sensing, 2017
Irene Conticello, MS – Surface enhanced Raman spectroscopy for measuring, 2017 cannabinoids in saliva
Sohee Cho, PhD – Epigenetic methods for determination of age and body fluid type 2018
Majlinda Prifti, MS 2019 – SERS based detection of cannabinoids
Marlene Verano, BS, 2019, Paper microfluidics
Dide Bolens – MS, 2019 Rapid PCR using miniplex amplification
Svede Dogruer, BS 2019**–** SERS detection of opioids
George Duncan PhD- 2019 Metagenomics, epigenetics
Lucas Ribeiro MS 2019 **–** Genomic analysis of cannabis
Roberta Marriot, PhD- 2018-2019 Rapid PCR and genotyping of Y chromosome
Gustavo Merillo Alves 2020 Voltammetric detection of fentanyl using screen printed electrodes
Ling Wang, PhD – 2019-2021 Raman based detection of drugs of abuse on microfluidic devices
Supatana Buking PhD – 2021 DSC/TGA of explosives
Rosa Chromarte, PhD – 2022 Aptamer-based sensors for opioids.
Mohammed Albujja, PhD 2023–Forensic Epigenetics and microbiome studies
Alyssa Ezzo, MS –2023 Bacterial detection by realtime and digital PCR
Nicholas Kochanski, MS –2023 Fentanyl screening by surface enhanced Raman spectroscopy
Anna Rosenberg, MS – 2023 High resolution melt analysis for age determination
Thinnapong Wongpakdee, MS, 2023-2024 Electrochemical and Raman based analysis of GSR
Silvia Balboni-BS 2024 Microbial DNA and species ID

21 Postdoctoral Researchers advised.

CURRENT GRADUATE STUDENTS

Alyssa Sanchez- heroin decomposition kinetics
Silvia Etim – Microbial contamination of agricultural products assessed by digital PCR
Kristen Jerich – SERS of drug mixtures
Andrea Ramirez Torres – Microbial transfer as a method to detect sexual assault
Dipa**nwita Raha-** Detection of Microbial transfer by digital PCR

CURRENT UNDERGRADUATE STUDENTS

Emily Hernandez 2021 – 2023 SERS of fentanyl analogs
Leonela Placencia 2021 - 2023 Epigenetic DNA for body fluid analysis

CURRENT FUNDING

Developing methods for sensing mercury species at DOE sites using microfluidic devices, Battelle Savannah River Alliance, LLC, RFP #676493 FY24 MISPP CRA, Konstantinos Kavalieratos (PI) Bruce McCord, (co-PI) , $349,952.

Rapid screening and identification of fentanyl in drug mixtures using surface enhanced Raman spectroscopy, Award # 15PNIJ-23-GG-04230-RESS, Bruce McCord, PI, 1/24 - 8/25, $190,662.

The sexual assault microbiome: Detecting contact when minimal male DNA is present, Award # 15PNIJ-23-GG-04228-DNAX, Bruce McCord, PI, 1/24-12/25, $409,612.

Improving sampling: applications of surface enhanced Raman Spectroscopy in forensic analysis, CARFS NSF Patrick Roman, PI, Bruce McCord co-PI, $25,000 2024-2025.

PAST FUNDING

Analysis of Heroin breakdown products, Bruce McCord, PI, CARFS/NSF, 2021-2023 24,000.

Follow-on Funding: Developing methods for trace detection of fecal contamination on agricultural products using nanodrop digital PCR.U. S. Department of Homeland Security Summer Research Team Program for Minority Serving Institutions, Bruce McCord, PI, 4/23-10/24 $50,000.

Forensic Body Fluid ID by Epigenetics, Frederic Reiders Foundation/National Institute of Justice, Bruce McCord (PI) 2020-DQ-BX-0015, $129,406 1/1/21-8/31/22

Developing methods for trace detection of fecal contamination on agricultural products using nanodrop digital PCR.U. S. Department of Homeland Security Summer Research Team Program for Minority Serving Institutions, Bruce McCord, PI, Summer 2022 ($29,000)

Analysis of opioids and fentanyl analogs using electrochemical methods, Bruce McCord, PI, CARFS/NSF, 2019-2022, 25,000.

The Development of Novel Sensing Pads for the Rapid Detection of Mixtures of Fentanyl in Cocaine and Heroin using Raman Spectroscopy, Bruce McCord, PI, CARFS/NSF, 2019-2022 25,000.

Rapid Microwave extraction for DNA Analysis, Broad Agency Announcement: Combating Terrorism Technical Support Office/Technical Support Working Group, Steve Lee, Bruce McCord, Kevin Lothridge, BAA 18-S-3001, $281,471.00. 1/20- 6/21

An epigenetic multiplex amplification for the determination of age and body fluid, National Institute of Justice, Bruce McCord (PI) 2017-NX-BX-0001, 368,512, 1/1/18-12/31/20

Non-destructive, enhanced collection and recovery from difficult forensic samples, improving the "front end" processes of DNA typing, National Institute of Justice, Dee Mills (PI) Bruce McCord (co-PI) 2017-DN-BX-0137 $286,931. 1/1/18-12/31/19

The development of surface enhanced Raman spectroscopy as a method for toxicological screening of opioids, National Science Foundation, OUCRC, Bruce McCord, PI $ 22,500. 9/30/17-9/30/19

Aptamer-Based, Exonuclease-Amplified, Colorimetric, Onsite Screening of Methylenedioxypyrovalerone (MDPV) and Mephedrone in Oral Fluid, Xi Xiao, PI, National Institute of Health, $337,240.000, McCord's Portion $31,873.74, 9/30/15 – 09/29/19.

The application of gold nanoparticles for the trace detection of synthetic cannabinoids in saliva and urine by surface enhanced Raman spectroscopy, Bruce McCord, PI, 2015-IJ-CX-K006, $333,582, 1/1/16-9/30/19.

Ultrahigh speed direct PCR, A method for obtaining STR genotypes in under 6 minutes, Bruce McCord, PI, 2015-R2-CX-K038, National Institute of Justice, $400,265, 1/1/16- 9/30/19.

DNA methylation analysis using High Resolution Melt for body fluid identification in forensic sciences, Graduate fellowship for Joana Antunes part 2, 2015-R2-CX-0012**,** National Institute of Justice $50,000, 1/1/16-12/30/16.

Internal Validation of a Qiagen Investigator Kit, Bruce McCord, PI Qiagen, $27,340.00 1/1/16-12/31/16

DNA methylation analysis using High Resolution Melt for body fluid identification in forensic sciences, Graduate fellowship for Joana Antunes, 2015-R2-CX-0012**,** National Institute of Justice $49,994, 1/1/16-12/30/17.

Paper Microfluidic Systems for Rapid and Inexpensive Presumptive Detection of Drugs and Explosives, National Institute of Justice, 2012-DN-BX-K048 Bruce McCord, (PI) $180,224, 01/01/13-10/31/15.

Body fluid identification using epigenetic methylation markers and pyrosequencing" National Institute of Justice, 2012-DN-BX-K018 Bruce McCord, (PI) 316,850, 01/01/13-10/31/15.

Developing a portable, paper-based microfluidic device for trace drug screening, National Institute of Justice Yi Xiao (PI), Bruce McCord (Co-PI) 2013-DN-BX-K032, $352,223, 01/2014-01/2016. (McCord's Portion- $133,451.65

Development of PCT based processing of sexual assault kits by differential extraction, Bruce McCord, PI, Pressure Biosciences $70,000, 9/1/15-12/31/16.

Rapid and selective extraction of male DNA from rape kits and other forensic evidence using pressure cycling. National Institute of Justice, 2011-NE-BX-K550, Bruce McCord, (PI) $349,130 01/01/12-10/31/14.

Detection and remediation of PCR inhibition using real time PCR melt curves as a diagnostic tool" National Institute of Justice 2010-DN-BX-K204 Bruce McCord (PI) $294,800 10//10-9/14

Rapid Screening and Confirmation of Organic Gunshot Residue Using Electrospray Mass Spectrometry, National Institute of Justice, 2009-DN-BX-K251 Bruce McCord (PI) $291,339 11/1/09-6/1/13.

Resolution Enhancement of a Qiagen System, Qiagen, Bruce McCord, (PI), $31,500, 4/12-2/13

UPLC/MS for smokeless powder determination, Waters Academic Grant Program $12,000 to support Jennifer Greaux's research, student in Dr. McCord's lab 1/15/13-7/15/13

The Development of Applications in DNA Typing and Evidence Screening using the Agilent Bioanalyzer, Agilent Technologies, Bruce McCord, PI, $41,545.49 4/28/2010.

Using visible light to modulate biological systems, NIH, Watson Lees, (PI) Bruce McCord Collaborator ($12,000) 2009-20012

Analysis of urea nitrate and ammonium nitrate on surfaces using ion chromatography and electrospray MS-TOF methods, Department of Homeland Security HSARPA Bruce McCord (PI) $366,490.89 6/1/09-2/23/11

Development of polymeric sieving matrices for forensic DNA typing, FSS subcontract from Arizona University, $71,000 6/30/09-6/30/10

Delivery of Academic Workshops in Advanced DNA typing analyses and population statistics, National Institute of Justice, 2008-DN-BX-K194, Dee Mills (PI) Bruce McCord, (Co PI) $282,505, 10/1/08-10/1/10.

An investigation of the effect of DNA degradation and inhibition on PCR amplification of single source and mixed forensic samples, National Institute of Justice, 2006-91704-FL-IJ, Bruce McCord (PI) $347,399, 12/1/06-2/30/10

The development of microfluidic devices for the rapid isolation and detection of drugs of abuse, National Institute of Justice, 2004-WG-BX-K077, $497,805, Bruce McCord, (PI) 11/1/04-11/1/08

The development of a mixed HEC/PVP soluble polymer system for genotyping DNA, McNair fellowship to Stephano Boulos, Bruce McCord, mentor $3000 6/07-5/08.

Investigation of fossils of Archaeological Centre Olomouc by molecular genetics methods, AMVIS cooperative US/Czech program, Jiri Drabek, PI Bruce Mccord, (co-PI) $31,650 1/12/06-1/12/07

The Use of MiniSTRs as Tools for the Investigation of DNA Degradation and Inhibition, National Institute of Justice, 2005-MU-BX-K073 $171,394, Bruce McCord, (PI) 1/1/06-1/1/07

Novel STR Multiplexes with reduced size to analyze DNA, National Institute of Justice, 2002-IJ-CX-K007, $453,110 (6/02-12/04), B. McCord (PI)

"Forensic Analysis of Explosive Residue Background" Technical Services Working Group DAAD05-02-C-0035, $219,846, (5/09/02 - 10/1/04), B. McCord (PI)

"Enhancement of the Research Infrastructure: Forensic Anthropology and Biology & DNA Research Facility" 1804 Fund, $29,098 (9/1/ 04-9/1/ 05) Scott Moody, Biological Sciences, Nancy Tatarek, Sociology & Anthropology, and Bruce McCord, Chemistry & Biochemistry.

Enhancement of Campus-wide Facility for Laser Scanning Confocal Microscopy, 1804 fund $30,000, 3/9/2003, Robert Colvin, Scott Hooper, Ellengene Peterson, and Soichi Tanda,; Douglas Goetz; Bruce McCord and Allan Showalter.

The Detection of Date Rape Drugs by Capillary Electrochromatography Using Monolithic Columns, National Institute of Justice, 2002-MU-MU-K002, $183,206 (1/01/02 - 8/31/04), B. McCord (PI)

"Zeolitic Materials for Nanoscale Electronics and Quantum Computation", National Science Foundation, $1,160,000 (6/1/01-8/31/04), V. Soghomonian with cograntees B. McCord, J. Heremans, N. Bonesteel, and S. Ulloa.

“The Analysis of GHB and Benzodiazepines by Capillary Electrochromatography,” J. Edgar Hoover Foundation Scientific Scholarship, $25,000 (2/2001 –2/2004) Sandra Bishop (PI) and graduate student in Dr. McCord’s research group.

“Mass Spectrometry Consortium for Materials and Medical Research,” Hayes Investment Fund, $180,000 (5/01/02- 5/01/03), B. McCord (PI) with cograntees E. Barbar, J. Hines, M. Kieliszewski, P. Harrington, and J. Kopchick.

"The Development of New Analytical Buffer Systems for the Separation and Analysis of PCR Amplified DNA by Capillary Electrophoresis" National Institute of Justice, 1999-IJ-CX-K014, $279,201 (8/1/99-6/30/02) Bruce McCord (PI)

"The Analysis of Date-Rape Drugs Using On-Line Extraction and Capillary Electrophoresis" OURC, $2,950, (4/3/99-6/30/00) Bruce McCord (PI)

PATENTS:

1. Paper Microfluidic Devices for Detection of Improvised Explosives
   Patent number: 9891207
   Filed: March 17, 2014
   Date of Patent: February 13, 2018

Assignees: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
Inventors: Bruce R. McCord, Inge Corbin, Lucas Blanes

2. Materials and methods for achieving differential lysis of mixtures with the aid of alkaline lysis and pressure cycling technology (PCT)
   Patent number: 9809794
   Filed: February 18, 2015
   Date of Patent: November 7, 2017
   Assignees: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES, PRESSURE BIOSCIENCES, INC.
   Inventors: Bruce R. McCord, Deepthi V. Nori, Nathan P. Lawrence, Richard Schumacher

3. Paper microfluidic devices for forensic serology
   Patent number: 9791434
   Filed: September 6, 2016
   Date of Patent: October 17, 2017
   Assignee: The Florida International University Board of Trustees
   Inventors: Bruce McCord, George Duncan, Ashley Wardlow

4. Materials and methods for detecting vaginal epithelial cells
   Patent number: 9702006
   Filed: December 28, 2016
   Date of Patent: July 11, 2017
   Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
   Inventors: Bruce McCord, Joana Antunes

5. Materials and methods for detecting source body fluids
   Inventors: Bruce McCord, Joana Antunes
   Patent number: 10,053,740 B1
   Filed: March 14, 2018
   Date of Patent: August 21, 2018
   Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY

6. Paper microfluidic devices for detection of improvised explosives
   Patent number: 10,036,738
   Filed: December 4, 2017
   Date of Patent: July 31, 2018
   Assignee: The Florida International University Board of Trustees
   Inventors: Bruce McCord, Inge Corbin,
   Blanes

7. CPG sites differentially methylated in smokers and non-smokers
   Patent number: 10344323
   Filed: February 20, 2018
   Date of Patent: July 9, 2019
   Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
   Inventors: Bruce McCord, Hussain Alghanim

8. Materials and methods for detecting source body fluids
   Patent number: 10619218
   Filed: August 3, 2018
   Date of Patent: April 14, 2020
   Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
   Inventors: Bruce McCord, Joana Antunes

9. DNA methylation assays for body fluid identification
   Patent number: 10704089
   Filed: December 12, 2019
   Date of Patent: July 7, 2020
   Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
   Inventors: Bruce McCord, Hussain Alghanim

10. DNA methylation assays for body fluid identification
    Patent number: 10907203
    Filed: June 15, 2020
    Date of Patent: February 2, 2021
    Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
    Inventors: Bruce McCord, Hussain Alghanim

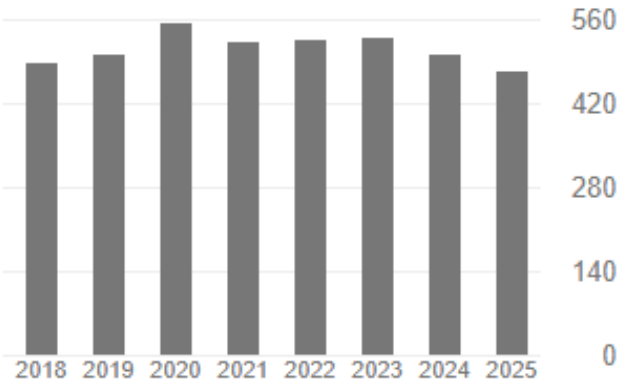
11. Materials and methods for age-at-death estimation
    Patent number: 11312989
    Filed: March 20, 2021
    Date of Patent: April 26, 2022
    Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
    Inventors: Sara Casado Zapico, Bruce R. McCord

12. Materials and methods for multiplex detection of body fluids
    Patent number: 11345965
    Type: Grant
    Filed: November 25, 2020
    Date of Patent: May 31, 2022
    Assignee: THE FLORIDA INTERNATIONAL UNIVERSITY BOARD OF TRUSTEES
    Inventors: Bruce McCord, Quentin Gauthier, Sohee Cho

PUBLICATIONS

Google Scholar Citations 7/31/25

Cited by		VIEW ALL
	All	Since 2020
Citations	8584	3114
h-index	51	29
i10-index	132	83



Peer Reviewed Journal Articles

151. **S**evde Dogruer Erkok; Martin Kimani; Adam Lanzarotta, Bruce McCord, Detecting Fentanyl Analogs in Counterfeit Pharmaceuticals by Surface-Enhanced Raman Spectrometry using Handheld Raman Spectrometers, *Forensic Science International,* 112679

150. Balamurugan, K; Staples, E; Alghanim, H; Duncan, G. McCord, B. DNA Methylation Markers and the Identification of Buccal Samples for Forensic Tissue Determination, Forensic Sciences, *Forensic Sci.* **2025**, *5*(2), 26.

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2. "Forensic epigenetics- methods for body fluid identification and phenotyping based on DNA methylation, Latin American Conference on Capillary Electrophoresis Dec 4-7, 2021 virtual.

3. Detection and Quantification of Trace Fentanyl in Mixtures with Portable Raman and Chemometrics Ling Wang, PhD; Mario O. Vendrell-Dones, MS; Chiara Deriu, PhD; Sevde Dogruer; Peter Harrington, PhD*; Bruce R. McCord, PhD, Current Trends in

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4. Implementation of epigenetics into forensic science: Development of a PCR based multiplex for the simultaneous analysis of age and body fluid identification, Bruce McCord, 2022 NIJ Forensic Science Research and Development (R&D) Symposium March 1, 2022

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10. LACE 2021 (Poster Presentation) Virtual Microwave pre-processing method to increase the success of direct and rapid DNA analysis Nicole Fernández Tejero, Fabiana Taglia, Ling Wang, Casandra H. Setser, Robert O'Brian, Kevin Lothridge, Bruce McCord1, Steve Lee 12/4/21

11. "Microwave pre-processing for Enhanced Rapid DNA Analysis of Forensic Samples Oral-Proceedings of the 74th American Academy of Forensic Sciences Meeting, Seattle, WA. Nicole Fernández Tejero, Fabiana Taglia, Ling Wang, Casandra H. Setser, Robert O'Brian, Kevin Lothridge, Bruce McCord1,Steve Lee (2/21/2022) "

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13. The Application of Electrospun Polymers With Metallic Nanoparticles for Use in the Detection of Fentanyl by Surface-Enhanced Raman Spectroscopy (SERS) Daniel Rubin, BA*; Mario Vendrell-Dones, MS; Ling Wang, PhD; Bruce McCord, PhD, American

Academy of Forensic Science (AAFS) 74th Annual Scientific Meeting Feb 21, 2022, Seattle, WA, February 2022

14. "Torres, A.R., Ghemrawi, M., "Development of qPCR Assay for Genital Microbial Signatures"International Symposium on Human Identification (ISHI), September 14th,, 2021 (Poster Presentation)"

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18. Improving Age–at–Death Estimation in Forensic Anthropology Applying a Translational Approach Sara C. Zapico, PhD*; Quentin Gauthier, PhD; Aleksandra Antevska, BS; Bruce McCord, PhD American Academy of Forensic Science (AAFS) 74th Annual Scientific Meeting Feb 21, 2022, Seattle, WA, February 2022

19. Silver-Doped Nanofibers as Surface-Enhanced Raman Spectroscopy (SERS) Substrates for the Detection of Synthetic Cathinones Mario Vendrell-Dones, MS*; Daniel Rubin, BA; Ling Wang, PhD; Bruce McCord, PhD, American Academy of Forensic Science (AAFS) 74th Annual Scientific Meeting Feb 21, 2022, Seattle, WA, February 2022

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26. Chromatographic and colorimetric methods, Lecture and laboratory, Forensic Summer camp July 27-31 2020.

27. Bruce McCord, Forensic Chemistry, Western Massachusetts University, Nov 30, 2020 (virtual)

28. Bruce McCord, The future of forensic DNA testing, Colorado State University, 3/10/21 (virtual)

29. qPCR Assay Design for Genital Microbial Signatures, Andrea Ramírez Torres Mentors: Dr. Bruce McCord Mirna Ghemrawi, Undergraduate research 2021 ,FIU, Mar 25, 2021 09:00 AM Eastern Time (US and Canada)

30. The Development of Epigenetic Methylation Markers for Skin/Sweat Nicole Fernandez Tejero, BS*; Quentin T. Gauthier, MSFS; Bruce R. McCord, PhD Feb 8-12 2021

31. An Epigenetic Multiplex Capable of Discriminating Body Fluid Type, Age, and Phenotype Bruce R. McCord, PhD (NIJ Research symposium at AAFS) Feb 8-12,2021

32. Increasing the Speed and Efficiency of DNA Extractions Using a Microwave Toward Increasing the Speed and Success of Rapid DNA Analysis Fabiana Taglia*; Ling Wang, PhD*; Kevin Lothridge, MSc; Robert I. O'Brien, BS; Bruce R. McCord, PhD; Steven B. Lee, PhD Feb 8-12, 2021.

33. Surface Enhanced Raman Spectroscopy for the Trace Detection of Fentanyl in Siezed Drug Mixtures; Bruce McCord, CARFS , new directions in forensic chemistry research, Pittcon 2021 3/10/2021

34. The development of rapid and presumptive methods for forensic analysis Prof. Bruce McCord, Rapid methods, RME 20221, The Netherlands (Remote) Feb 2, 2021

35. Application of Microbiome Transfer for Sexual Assault Detection Using Deep Sequencing and Real-Time PCR. Mirna Ghemrawi, Andrea Ramirez, Bruce McCord Crossing forensic borders, Webinar, April 15,2021

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13. Bruce McCord Forensic epigenetics, a powerful technique to determine body fluids and phenotype. B. Mccord, 71st SERMACS 2019, Savanna GA, 10/20-23

14. Bruce McCord, Hussain Alghanim, Green Mountain DNA Conference, Determination of suspect age using epigenetics and pyrosequencing, 7/31/19, Burlington, Vt.

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17. Bruce McCord Night at the museum/forensics from the field to the lab Lectures and Hands-on Laboratory demonstrations. Frost Science Museum Miami, FL,10/18/19

18. Bruce McCord, Chemical analysis for drug detection, TLC, and latent fingerprints, IFRI Forensic Science Summer Camp, 7/15-19/19
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27. Rosa Cromartie, B.S., Shekhar Bhansali, PhD and Bruce McCord, PhD (Poster Presentation) The Application of Screen Printing Electrodes for the Detection of Opioids in Sweat. The American Academy of Forensic Sciences, Anaheim,California, USA, February 20, 2020

28. Ghemrawi, M., Fischinger, F., Duncan, G., McCord, B. "Pyrosequencing-based method for species ID." (2019). (Poster) Proceedings of the 30th International Symposium on Human Identification, Palm Springs, CA

29. Steven Lee, Eric Yan-Hung Yu, Kenya Thomas, Georgiana Gibson Daw, Ling Wang , Dide Bolens, Roberta Mariot, Meghan Roig, Mallory Baud, Mirna Ghemrawi, Fabiana Taglia, Kevin Lothridge and, Bruce McCord. Accelerating DNA Extractions Using a Microwave Toward Increasing the Speed and Success of Rapid DNA Analysis. Poster presented at the 2020 American Academy of Forensic Science Meeting. February 17-22, 2020. Anaheim, CA.

30. Adonicah Cummings, Steven Lee, Ling Wang, Fabiana Taglia, Bruce McCord, The application and optimization of microwave extraction and rapid STR genotyping, Undergrad Research FIU Honors College, March 24, 2020.

31. Ling Wang, PhD*; Mario O. Vendrell-Dones, BS; Sevde Dogruer; Bruce R. McCord, PhD, The Detection and Quantification of Trace Fentanyl in Mixtures With a Portable Raman Instrument and Chemometrics 2020 American Academy of Forensic Science Meeting. February 17-22, 2020. Anaheim, CA.

32. Ling Wang, Bruce McCord, SERS of Fentanyls, IFRI conference, May 1, 2019, Miami, FL

33. Meghan Roid, Bruce McCord, Pressure Cycling and Alkaline lysis, IFRI Conference, May 1, 2019, Miami, FL

34. Bruce McCord, Opioid Crisis Panel, IFRI conference, May 1, 2019 Miami, FL

35. Bruce McCord, Next generation sequencing and future applications, Qiagen Workshop, IFRI Conference, Miami, FL April, 30, 2019

36. "Bruce McCord, Forensic applications for paper microfluidics
LACE 2018 Mendoza Argentina, December1-4, 2018"

37. Bruce McCord, Surface Enhanced Raman Spectroscopy of Opioids, CARFS, Atlanta, GA

38. Bruce McCord, Papermicrofluidics for fieldable forensic testing, Webinar RTI, October 3, 2019

39. "Ultra High Speed Genotyping Using Rapid Direct PCR, Bruce McCord, 2018 GRC conference on forensic DNA, Sunday River, ME

40. Bruce McCord, Using Methylation Patterns to Determine Origin of Biological Material and Age, Webinar, Forensic Magazine, August 15, 2018.

41. The Implementation of a Method for Rapid Direct Polymerase Chain Reaction (PCR) Mallory Baud, BS*; Georgiana C. Gibson-Daw, PhD; Bruce R. McCord, PhD, AAFS, YFSF, Feb 18-23, 2019

42. Bruce McCord, Development of a PCR based multiplex for the simultaneous analysis of age and body fluid identification, Webinar, Emerging Forensic Research Series: Forensic Biology, FTCOE, April 9, 2019

43. Discovery of New Loci of Interest for Body Fluid, Identification Through DNA Methylation Melt Analysis JOANA ANTUNES, Florida International University, George Duncan, Bruce McCord, Pittcon, March 17-21, Philadelphia, PA

44. Recovering Trace DNA from Cotton Swabs Using Pressure Cycling and Alkali-Based Lysis MEGHAN N ROIG, Florida International University, Nicole Fernandez Tejero, Vanessa Martinez, Bruce McCord Pittcon, March 17-21, Philadelphia, PA

45. Detection of Opioids by Surface Enhanced Raman Spectroscopy, LING WANG, Florida International University, Bruce McCord, Chiara Deriu, Pittcon, Philladelphia, PA, March 17-21, 2019

46. "The Application Surface Enhanced Raman Spectroscopy for the Rapid Screening of Cannabinoids and Other Drugs in Toxicological Matrices BRUCE MCCORD, Florida International University, Pittcon, March17-19, 2019, Philadelphia, PA"

47. Developmental Validation of a Body Fluid Identification Multiplex via DNA Methylation Analysis QUENTIN GAUTHIER, Florida International University, Bruce McCord, Pittcon, march17-21, 2019, Philadelphia, PA

48. Understanding the Feasibility of a SERS-Based Screening Tool for Synthetic Cannabinoids in Oral Fluid CHIARA DERIU, Florida International University, Irene Conticello, Alexander Mebel, Bruce McCord

49. Ultrahigh-Speed Direct Polymerasae Chain Reaction (PCR): A Method for Obtaining Short Tandem Repeat (STR) -Based Genotypes in Less Than Six Minutes Bruce R. McCord, PhD, Forensic Science Research and Development Symposium, AAFS, February 19, 2019 Baltomore, MD.

50. DNA Methylation-Based Assay for the Identification of Smoking Status Hussain J.H. Alghanim, MS*; Bruce R. McCord, PhD; Wensong Wu, PhD, AAFS, February 18-23, Baltimore, MD

51. A Developmental Validation of a Body Fluid Identification Multiplex Via DNA Methylation Analysis Quentin T. Gauthier, MSFS*; Sohee Cho, PhD; Bruce R. McCord, PhD, AAFS, February 18-23, Baltimore, MD

52. Forensic epigenetics, a novel method for body fluid identification and phenotyping, Green Mountain DNA Conference, Bruce McCord, Florida International University, July 24-26, 2017

53. Kenya Thomas, *Eric Yu, *Georgiana Gibson-Daw, *Meghan Roig, Bruce McCord and Steven B. Lee. 2017. Rapid, microwave-accelerated DNA extraction from saliva, semen and hair for downstream PCR typing. Poster presented at the 28th International Symposium on Human Identification. Seattle, WA October 2-5, 2017

54. Bruce McCord, Capillary electrophoresis for DNA typing- (workshop on Capillary Electrophoresis, Dec 2) LACE 2017 Mexico City Mexico, Dec 1-5, 2017.

55. Rosa Cromarte; George Duncan: Bruce McCord The development of a multi-analyte paper based device for Serological Measurements AAFS, Seattle, WA Feb 19-24, 2018

56. Meghan Roig; Vanessa Martinez; Deepthi Nori: Bruce McCord. The development and optimization of a direct PCR based resolution of mixtures of sperm and epithelial lysates from cotton swabs. AAFS, Seattle, WA Feb 19-24, 2018.

57. Ling Wang, Bruce McCord, The development of a multichannel paper based device for the detection of drugs of abuse using gold nanoparticle/aptamer complexes, AAFS, Seattle, WA Feb 19-24, 2018

58. Quentin Gaither, Sohee Cho, Joanna Antunes, Bruce McCord, Identification of body fluids using multiplexed PCR, AAFS, Seattle, WA Feb 19-24, 2018

59. Hussain Alghanim, Bruce McCord, The development of Epigenetic DNA methylation markers to predict tobacco smoking of unknown suspects, AAFS, Seattle, WA Feb 19-24, 2018

60. Katherine Chabaud, Bruce McCord, Ilaria Pirazzini, The development of a paper microfluidic device to detect organic smokeless powder residue. AAFS, Seattle, WA Feb 19-24, 2018

61. Irene Conticello, Chiara Deriu, Thaddeus, Mostowtt, Bruce McCord, Surface Enhanced Raman Spectroscopy (SERS) based screening test for synthetic cannabinoids in oral fluids. AAFS, Seattle, WA Feb 19-24, 2018

62. McCord, Bruce - Forensic Epigenetics, Pittcon, Orlando , FL, Feb 26- March 1, 2018

63. "Chiara Deriu, Bruce McCord, Tailored SERS-Active Substrate for Forensic Trace Detection, Pittcon, Orlando , FL, Feb 26- March 1, 2018

64. Kathryn Chibaud, Bruce McCord, IlariaPirazzini, MichelleTorres,Sheila Oliveira Development of Paper Microfluidic Devices for the Detection of Organic and Inorganic Low Explosives Residue, Pittcon, Orlando , FL, Feb 26- March 1, 2018

65. Ling Wang, AuNPs/Aptamer Based Paper Microfluidic Devices for the Detection of Cocaine, Pittcon, Orlando , FL, Feb 26- March 1, 2018

66. Quentin Gaither, Joana Antunes, Vanessa Aguiar-Pulidob, KuppareddiBalamuruganc, George Duncan, Giri Narasimhan and Bruce McCord, High-resolution melt analysis of DNA methylation patterns can discriminate body fluid of origin in crime scene samples Pittcon, Orlando , FL, Feb 26- March 1, 2018

67. "Bruce McCord, Rapid Direct PCR, a Method for Ultra High Speed Genotyping, Emirates Forensic Conference, Dubai, UAE April 9-11, 2018

68. Bruce McCord, 'The Application of Surface Enhanced Raman Spectroscopy for the Determination of Synthetic Cannabinoids in Oral Fluids, , Emirates Forensic Conference, Dubai, UAE April 9-11, 2018

69. Sohee Cho, Bruce McCord, Forensic Applications of Epigenetics, 7th QIAGEN Investigator Forum, Main session, San Antonio, TX, March 1-3, 2018

70. Quentin Gaither, Multiplexed Epigenetics for body fluid identification, 7th IFRI Symposium, May1-2, Miami, Fl

71. Bruce McCord, Introduction to Chromatography, Instrumental chromatographic separation techniques for forensic analysis: Application to the analysis of emerging drugs. Workshop, AAFS, New Orleans, February 14, 2017.

72. Bruce McCord, Forensic epigenetics, a novel method for body fluid identification and phenotyping May 23-25, 2016, Forensica, Olomouc, Czech Republic

73. Bruce McCord, Next-Generation Technology under Development for Rapid, Comprehensive DNA Analysis, August 22-23 , 2016,Cambridge Healthtech Next Generation Summit, DNA forensics, Washington, DC

74. Bruce McCord, Forensic Epigenics, A powerful technique to discriminate body fluids at crime scenes, Sept 22-24 , 2016,Netherlands Forensic Institute, University of Amsterdam

75. Bruce McCord, Development of a Surface Enhanced Raman Spectroscopy (SERS) Method as an Alternative Method for Toxicological Drug Screening, Sept 22-24 , 2016, Netherlands Forensic Institute, Amsterdam
76. Bruce McCord, Forensic Epigenetics, Sept 27-28 , 2016,SAFS, Clearwater Beach, October 26, 2016.

77. Bruce McCord, New Progress in Pyrosequencing for tissue sourcing and age prediction, Qiagen, October 26, 2017 https://qa-preproduction.qiagen.com/uz/resources/e-learning/webinars/human-identity-and-forensics/new-progress-in-pyrosequencing-for-tissue-sourcing-and-age-prediction/

78. Bruce McCord, March 3-5, 2017, The Future of Forensic Science, Plenary Speaker, Chemistry Day, Clemson University, Clemson, SC

79. Bruce McCord, Forensic Applications of Pyroseqencing, April 3-7, 2017, Qiagen Users Forum, Prague, Czech Republic

80. Bruce McCord, The application of surface enhanced Raman spectroscopy in toxicological analysis, April 24-25, 2017 McMasters University, Ontario, CA

81. Thaddeus Mostowtt, MFS; Chiara Deriu, MS; Jonanthan Munoz; Bruce McCord, PhD. The Evaluation of Mono-, Di-, and Trivalent Cations for the Optimized Surface-Enhanced Raman Spectroscopy (SERS) Enhancement to Detect Synthetic Cannabinoids in Biological Samples", AAFS, New Orleans, LA, February 2017 (Poster).

82. Joana Antunes, MS (presenting); Vanessa Aguiar-Pulido, PhD; Kuppareddi Balamurugan, PhD; George T. Duncan, PhD; Giri Narasimhan, PhD; Bruce R. McCord, PhD, A New Approach Combining In Silico and High-Resolution Melt (HRM) Analysis to Quickly Identify New Loci for
Body Fluid Identification Using DNA Methylation Melt Analysis" (oral presentation) AAFS, New Orleans, February 13-18, 2017

83. Georgiana Gibson-Daw, Bruce McCord. Ultrahigh speed PCR: a method for obtaining STR based genotypes in 8 minutes or less. AAFS, New Orleans, February 13-18, 2017. (presentation)

84. Ling Wang, Bruce McCord, Gold Nanoparticle/Aptamer-Based Paper Microfluidic Devices Developed for the Detection of Cocaine, (poster) AAFS, New Orleans, February 13-18, 2017.

85. Rosa Cromarte, Ashley Wardlow, George Duncan, and Bruce McCord, Rapid and reliable validation of body fluids using paper microfluidic devices. AAFS, New Orleans, February 13-18, 2017. (poster)

86. Meghan Roig, Vanessa Martinez, Deepthi Nori, and Bruce McCord, A method for optimizing pressure-based extraction and direct PCR of simulated sexual assault samples. AAFS, New Orleans, February 13-18, 2017

87. AuNPs/Aptamer Based Paper Microfluidic Devices for the Detection ofCocaine LING WANG,Florida International University, Bruce McCord, Pittcon, Chicago, IL March 5-9, 2017

88. Tailored SERS-Active Substrate for Forensic Trace Detection CHIARA DERIU, Florida International University, Bruce McCord, Pittcon, Chicago, IL March 5-9, 2017

89. Development of Paper Microfluidic Devices for the Detection of Organic and Inorganic Low Explosives Residue KATHRYN CHABAUD, Florida International University,Bruce McCord, IlariaPirazzini,MichelleTorres,Sheila Oliveira, Pittcon 2017, Pittcon, Chicago, IL March 5-9, 2017.

90. Joana Antunes, Vanessa Aguiar-Pulido, Kuppareddi Balamurugan, George Duncan, Giri Narasimhan and Bruce McCord. High-resolution melt analysis of DNA methylation patterns can discriminate body fluid of origin in crime scene samples. International Symposium for Human Identification, September 26-29, 2016; Minneapolis, MN. Poster presentation

91. Bruce McCord, Paper microfluidics for explosives detection, IFRI/Elsevier Symposium, Florida International University, May 5-6, 2015

92. Bruce McCord, Microfluidics and Nanotechnology in Forensic Science, George Washington University, Washington, DC, June 16, 2015

93. Bruce McCord, Fundamentals of CE Analysis and Troubleshooting, Promega Latin American DNA Conference, Miami, FL July 1, 2015

94. Bruce McCord and Deepthi Nori, Differential extraction using Alkaline Lysis and Pressure cycling, Green Mountain DNA Conference, Burlington, Vt, July 27, 2015

95. Bruce McCord, Explosives Residue Detection, University of Bologna, Bologna, Italy, November 27, 2015.

96. Bruce McCord, Chair, Forensic Mixtures: Assessment, Analysis and Technology: Current Methods, New Approaches and Disruptive Technologies, Promega ISHI Conference, Grapevine, TX, October 11-15

97. Bruce McCord, Presentations on current research efforts in analytical and bioanalytical forensic chemistry NSF/NIJ-Sponsored Industry University Collaborative Research Center (I/UCRC) on Forensic Science July 8-10, 2015 Washington D.C.

98. Bruce McCord, Setting Thresholds in DNA analysis, IFRI Symposium, 2015, Florida International University, March 16,17, 2016

99. Bruce McCord, The development of surface enhanced Raman spectroscopy as a method for toxicological drug screening – Bruce McCord, Thaddeus Mostowtt and Erica Doctor, IFRI symposium, March 16-17.

100. Ira S. Lurie, Stephanie Breitenbach, Walter F. Rowe , Bruce McCord, Should Forensic Laboratories Embrace Ultra-High Performance Supercritical Fluid Chromatography as a Separation Technique for the Analysis of Seized Drugs? NIJ Research Symposium, 68th Annual American Association for Forensic Sciences, February 2016, Las Vegas, NV

101. Bruce McCord, The Application of Alkaline Lysis and Pressure Cycling in Forensic Differential Extraction, Microscale Bioseparations, 2016, Niagra by the Lake, Ontario, Canada, April 3-7, 2016

102. Roig, M.; Simoes, T.; Nori, D.; McCord, B. Comparison of extraction methods on cotton swabs. 68th Annual American Association for Forensic Sciences, February 2016, Las Vegas, NV

103. Antunes J., Silva DSBS., Balamurugan K., Duncan G., Alho C., McCord B., "High resolution melt analysis of DNA methylation to discriminate semen in biological stains", Graduate Student Appreciation Week, March 2016, Florida International University, Miami, Florida.

104. Antunes J., Silva DSBS., Balamurugan K., Duncan G., Alho C., McCord B., "High resolution melt analysis of DNA methylation to discriminate semen in biological stains" Young Forensic Science Forum at the 68th Annual American Association for Forensic Sciences, February 2016, Las Vegas, NV

105. Ashley Wardlow, George Duncan, and Bruce McCord, A paper Microfluidic Method for Forensic Serological Investigations, McNair Symposium at FIU, September 4, 2015

106. Ling Wang,Giacomo Musile,Jashaun Bottoms,Franco Tagliaro,Bruce McCord, Colorimetric Reagent based Paper Microfluidic Devices Designed for Seized Drugs of Abuse, Florida International University GSAW 2016, Miami, FL, USA, March 28, 2016

Ling Wang,Giacomo Musile,Jashaun Bottoms,Franco Tagliaro,Bruce McCord, Colorimetric-Based Paper Microfluidic Devices for the Presumptive Determination of Seized Drugs, IFRI Forensic Science Symposium 2016, Miami, FL, USA, March 15, 2016

107. Ling Wang,Giacomo Musile,Jashaun Bottoms,Franco Tagliaro,Bruce McCord, Colorimetric-Based Paper Microfluidic Devices for the

Presumptive Determination of Seized Drugs, American Academy of Forensic Science (AAFS) 68th Annual Scientific Meeting, Las Vegas, NV, USA, Feb. 24, 2016

108. Georgiana Gibson-Daw; Patricia Albani, Marcus Gassmann, and Bruce McCord, Rapid PCR of an YSTR multiplex as a screening tool for presence of male DNA. 68th Annual Scientific Meeting, Las Vegas, NV, USA. Feb 26, 2016.

109. Kathryn Chabaud, Bruce McCord. Development of paper microfluidic devices for the detection of low explosives residues. American Academy of Forensic Sciences 68th Annual Scientific Meeting, Las Vegas, NV, USA. Feb 26, 2016.

110. Kathryn Chabaud, Bruce McCord. Development of paper microfluidic devices for the detection of low explosives residues. International Forensics Research Institute Annual Research Symposium, Miami, FL, USA. May 15, 2016.

111. Deborah Silva, Joana Antunes, Kuppareddi Balamurugan, George Duncan, Clarice Alho, Bruce Mccord. DNA methylation patterns as markers in forensic investigation. American Academy of Forensic Sciences 67th Annual Meeting, Orlando, FL, USA. February 21, 2016.

112. Thaddeus Mowstatt and Bruce McCord "The Application of Gold Nanoparticles for the Trace Detection of PINACAs in Urine by Surface Enhanced Raman Spectroscopy (SERS)" presented at AAFS in February 2016 and at IFRI in March 2016.

113. Bruce McCord and Kelly Peters Paper microfluidic sensors for explosives, , FIU booth, Emerge May 5, 6, 2016

114. George Duncan, Jennifer Parker Bruce McCord, Ron Fourney, Investigative NGS, Green Mountain July 27-31 Burlington Vermont, 2016

115. Bruce McCord DNA typing of degraded evidence,ENQFOR Ribierao Preto Brazil, 2016

116. Bruce McCord, The Future outlook for Forensic Science, Analytical, Life Science, and Diagnostic Association, Half moon Bay, CA, Sept 28-Oct 1, 2016

117. Bruce McCord, Instructor, Workshop on Forensic DNA typing, Jerusalem, Israel Dec 8-13, 2015

118. Bruce McCord, Detection of improvised explosives as ion pairs using crown ether complexes Florida International University, ASMS Sanibel Conference, January 23-24, 2015

119. Bruce McCord, Co-chair, Workshop on difficult samples, AAFS, Orlando, FL

Feb 15-19, 2015

120. Bruce McCord,Epigenetic Tissue Typing, NIJ Grantees Meeting, AAFS, Orlando, FL Feb 15-19, 2015

121. Bruce McCord, Paper microfluidics for explosives detection, Pittcon March 11-13, 2015

122. Bruce McCord, The Development of methods for forensic genetic analysis, Forensic Genetics Symposium, Seoul, Korea

123. March 24-29, 2015

124. Troubleshooting Capillary Electrophoresis systems, Mexico City, Mexico, 2014s kype webinar, sponsored by Promega

125. Troubleshooting STR systems sponsored by Forensic Magazine, and Promega, and was given June 4, 2014. *https://www.promega.com/resources/webinars/worldwide/archive/the-fundamentals-of-ce-based-dna-analysis-and-related-interpretation-issues/*

126. Trailblazing: Novel Techniques and Tools for Forensic Analysis, Part II and was sponsored by the NIJ. and RTI in North Carolina, May 14,2015. . *https://www.forensiced.org/training/viewcourse.cfm?moduleid=ed407787-967d-4bfa-9ffe-e234f463bdfc*

127. Life-in-the-Fast-Lane-Advances-and-Applications-of-Rapid-PCR and was sponsored by Biotechniques and Streck. March 10, 2015. *http://www.biotechniques.com/community/events/Life-in-the-Fast-Lane-Advances-and-Applications-of-Rapid-PCR/biotechniques-356434.html*

128. *Surface-Enhanced Raman Analysis of Synthetic Cannabinoids Using Gold Nanoparticles and Various Aggregating Agents*, 67th Annual Scientific Meeting of the AAFS, Orlando, Fl, Febuary 2015.

129. *Surface-Enhanced Raman Analysis of Synthetic Cannabinoids Using Gold Nanoparticles and Various Aggregating Agents*, FIU GSAW scholarly forum, Miami, FL, April 2015. (third place winner)

130. Steven B. Lee, Maurice Aboud, Hye Hyun Oh, Dominique Cooper, George Duncan, Georgiana Gibson-Daw, Bruce McCord The development of new enzymes for rapid direct amplification of DNA and its application in presumptive testing 67th Annual Scientific Meeting of the AAFS, Orlando, Fl, Febuary 2015.

131. Hanzhuo Fu, Gustavo Merola, Franco Tagliaro, Teodora Macchia, Bruce R McCord. Simultaneous Chiral Separation of 12 Cathinone Analogs by Cyclodextrin-assisted Capillary Electrophoresis Mass Spectrometry. the 41st International Symposium and Exhibit on High Performance Liquid Phase Separations and Related Techniques (HPLC 2014), New Orleans, LA, USA. May 13, 2015.

132. Steven B. Lee, Sudhir Sinha and Bruce McCord 2015. Advances in Screening of Forensic Biological Samples: 1) Inter-laboratory Performance and Utility of a triplex qPCR on degraded samples 2) Accelerating Rapid PCR : Road to the Final 4 minute PCR in a flow based cycler. Invited platform presentation at Promega Technology Tour San Diego CA in conjunction with the BODE Advanced DNA Technology Workshop West March 2015.

133. Ling Wang, Bruce McCord, Detection for drug of abuse with paper microfluidic devices assised colorimetric tests. Florida Annual Meeting and Exposition 20014, Plam Harbor, Florida, May 8, 2014

134. Ling Wang, Giacomo Musile, Jashaun Bottoms, Franco Tagliaro, Bruce McCord, Presumptive determination of seized drugs using paper microfluidic devices, AAFS 67th Annual Scientific Meeting, Orlando, Florida, February 18, 2015

135. Ling Wang, Giacomo Musile, Jashaun Bottoms, Franco Tagliaro, Bruce McCord, Presumptive determination of seized drugs using paper microfluidic devices, Florida International University GSAW Scholarly Forum, Miami, Florida, April 6, 2015

136. Kathryn Chabaud, Bruce McCord *Paper microfluidic devices for explosive residue detection*, 67th Annual Scientific Meeting of the AAFS, Orlando, Fl, February 2015.

137. Deborah Silva, Joana Antunes, Kuppareddi Balamurugan, George T. Duncan, Clarice Alho, and Bruce R. McCord, PhD, DNA Methylation Patterns as Markers in Forensic Investigation, 67th Annual Scientific Meeting of the AAFS, Orlando, Fl, February 2015

138. Silva, Deborah S.B.S.; Antunes, J.; Alho, C.S.; McCord, B. **Epigenetics markers for identification of body fluids. Qiagen North American Users' Meeting, Houston-TX, USA, 2014 (Oral Presentation)**

139. Silva, Deborah S.B.S.; Antunes, J.; Alho, C.S.; McCord, B. **Epigenetics markers for identification of body fluids. Association of Forensic DNA Analysts and Administrators, Houston-TX, USA, 2014 (Oral Presentation)**2013-2014

140. Hanzhuo Fu, Gustavo Merola Franco Tagliaro, Teodora Macchia, Bruce R. McCord

141. Chiral Separation of 12 Cathinone Analogs by Cyclodextrin-assisted Capillary Electrophoresis with UV and Mass Spectrometry Detection. IFRI Third Annual Forensic

Science Symposium. Miami, FL. April 30th, 2014.

142. Kelley Peters and Bruce McCord, "Comprehensive detection of improvised explosives as ion pairs and single ions using non–aqueous electrospray mass spectrometry techniques." International Symposium for the Analysis and Detection of Explosives; The Hague, Netherlands, 2013.

143. Kelley Peters, "New Technology for Rapid Detection of Explosives." TEDxFIU; Miami, FL, 2013.

144. Kelley Peters and Bruce McCord, Presumptive and Confirmatory Detection of Multiple Explosive Compounds." IDGA 9th Counter IED Summit; Washington, DC, 2014.

145. Kelley Peters and Bruce McCord, "Development of Paper Microfluidic Devices for the Rapid On-Site Detection of Explosives." NIJ Grantees Meeting; Seattle, Washington, 2014.

146. Kelley Peters and Bruce McCord, Development of Paper Microfluidic Devices for the Rapid On-Site Detection of Explosives." American Academy of Forensic Sciences 66th Annual Scientific Meeting; Seattle, Washington, 2014.

147. Kelley Peters and Bruce McCord, Comprehensive Analysis for the Detection of Multiple Explosives." International Forensic Research Institute Science Symposium; Miami, FL, USA, 2014.

148. Kelley Peters and Bruce McCord, Development of Paper Microfluidic Devices for the Rapid On-Site Detection of Explosives." Florida International University Scholarly Forum; Miami, FL, 2014.

149. Erika L. Doctor* and Bruce McCord, "Development of a surface-enhanced Raman spectroscopy method for the detection of benzodiazepines in urine." November 2013, Sumerset, NJ. EAS.

150. Erika L. Doctor* and Bruce McCord, "Development of a surface-enhanced Raman spectroscopy method for the detection of benzodiazepines in urine." February 2014, Seattle, WA AAFS,

151. Erika L. Doctor* and Bruce McCord, "Development of a surface-enhanced Raman spectroscopy method for the detection of benzodiazepines in urine. IFRI symposium FIU 4/30/14

152. Deepthi Nori and Bruce McCord, Application of Pressure Cycling Technology (PCT) in Differential Extraction, AAFS, February, 2014, Seattle, WA.

153. Deepthi Nori, Application of Pressure Cycling Technology (PCT) in Differential Extraction FIU Scholarly Forum, March 31, 2014. (3rd place)

154. Thomas J.L. A Rapid UPLC/MS/MS Method for the Analysis of Smokeless Powders and Organic Gunshot Residue. Presented at the IAI Annual International Educational Conference, Providence, RI, August 8, 2013.

155. Antunes J., Madi T., Balamurugan K., Bombardi R., Duncan G., McCord B., DNA methylation markers as a powerful technique to discriminate body fluids present in crime scenes, International Association for Identification Educational Conference, August 4-10, Providence, Rhode Island – NIST stipend provided

156. Antunes J., Madi T., Balamurugan K., Bombardi R., Duncan G., McCord B., DNA methylation markers as a powerful technique to discriminate body fluids present in crime scenes, International Symposium for Human Identification, October 7-10, Atlanta, Georgia

157. Antunes J., Madi T., Balamurugan K., Bombardi R., Duncan G., McCord B., DNA methylation markers as a powerful technique to discriminate body fluids present in crime scenes, American Academy of Forensic Sciences Annual Scientific Meeting, February 17-22, Seattle, Washington

158. Kyle Zreibe, Kelley L. Peters, Bruce McCord, Development of Paper Microfluidic Devices for the Rapid, On-Site Detection of Multiple Explosive Compounds, Fourth Annual Florida Undergraduate Research Conference (FURC 2014) February, 21-22, 2014, FIU

159. Bruce McCord, Rapid/Direct PCR for Producing Genotypes in under 25min, Bode East Symposium, Amelia Island, FL, May 22-23, 2013

160. Bruce McCord, Promega Workshop on DNA typing, Mexico City, Mexico June 2013

161. Bruce McCord, Workshop on capillary electrophoresis and setting instrument thresholds, Miami Dade Police Laboratory, July, 23, 2013

162. Bruce McCord, George Duncan Establishing a Real Time PCR Based Cut-off forAnalysis, Green Mountain DNA Conference, Burlington, VT, July 29-31, 2013.

163. Bruce McCord, Epigenetic Markers for Trace Identification of Body Fluids, 2013 SNP Forum, Center for Advanced Forensic DNA Analysis, Greenville, NC, Sept 9-10, 2013

164. Bruce McCord, Troubleshooting DNA Typing Systems, Bode Mid-Atlantic Symposium, Charlottesville, VA, Sept 23-25, 2013

165. Bruce McCord, Rapid/Direct PCR for Producing Genotypes in U Rapid/Direct PCR for Producing Genotypes in Under 25 min, Bode Mid-Atlantic Symposium, Charlottesville, Va September 23-25, 2013

166. Bruce McCord, Workshop on Mixture Identification, International Symposium on Human Identification, Atlanta, GA, October 7-10, 2013

167. Bruce McCord, An introduction to DNA typing and its application in the analysis

of degraded and inhibited samples, U Southern Mississippi, Hattiesburg, MS, November 8, 2013.

168. Bruce McCord, Setting Thresholds, Workshop on DNA typing methods, NC State Crime Laboratory, Raleigh, NC, Dec 9-10, 2013.

169. Bruce McCord, Forensic DNA analysis and its application to degraded and inhibited DNA, University of Nebraska , Lincoln, NE, April 17-18, 2014

170. Bruce McCord, Differential Extraction using Pressure Cycling, IFRI Forensic Forum, April 30-May 1, 2014.

171. Development of a Surface Enhanced Raman method for the Detection of Benzodiazepines in Urine, Erika L. Doctor, Bruce McCord, AAFS, Washingtion, DC, Februrary 23rd, 2013

172. Britt E. Turnquest*, Bruce McCord, Effect of Organic Modifiers on Separation of Fluorescently Labeled Phenethylamines in Capillary Electrophoresis (Poster), presented initially at American Academy of Forensic Sciences (AAFS) Annual Meeting, Washington, DC, Feb. 20th, 2013.

173. Britt E. Turnquest*, Bruce McCord, Effect of Organic Modifiers on Separation of Fluorescently Labeled Phenethylamines in Capillary Electrophoresis (Poster) IFRI Forensic Forum, FIU, March 13-14

174. Antunes J., Madi T., Balamurugan K., Bombardi R., Duncan G., McCord B., DNA methylation markers as a powerful technique to discriminate body fluids present in crime scenes, 2nd Annual IFRI Forensic Science Symposium, March 13-14, 2013, Florida International University, Miami, Florida

175. Antunes J., Madi T., Balamurugan K., Bombardi R., Duncan G., McCord B., DNA methylation markers as a powerful technique to discriminate body fluids present in crime scenes, Graduate Student Appreciation Week, March 26, 2013, Florida International University, Miami, Florida

176. Hanzhuo Fu, Bruce R. McCord, Separation and identification of select drugs by monolith capillary electrochromatography, the 245th American Chemical Society (ACS) National Meeting, Division of Analytical Chemistry, Poster Session, April 7, 2013, New Orleans, Louisiana, USA.

177. Comprehensive Confirmatory Analysis of Multiple Improvised Explosives. Kelley Peters*, Bruce McCord. International Forensic Research Institute 2nd Annual Symposium. Florida International University. Miami, FL. March 13, 2013.

178. Comprehensive Confirmatory Analysis of Multiple Improvised Explosives. Kelley Peters*, Bruce McCord. Pittcon. Pennsylvania Convention Center. Philadelphia, PA. March 20, 2013.

179. Comprehensive Confirmatory Analysis of Multiple Improvised Explosives. Kelley Peters*, Bruce McCord. Scholarly Forum. Florida International University. Miami, FL. March 26, 2013

180. The effects of DNA sequence and length on inhibitor interactions in real time PCR amplification, Arianna Pionzio and Bruce McCord, International Symposium on Human Identification, Nashville, TN Oct 7-10

181. Immunomagnetic Capturing procedure for differential extraction. Pero Dimsoski, Vanessa Martinez and Bruce McCord, IFRI Forensic Forum, FIU March 13-14

182. Obtaining Genotypes out of low copy number DNA, Pero Dimsosky, Julian Mendel, Bruce McCord and DeEtta Mills, IFRI Forensic Forum, FIU March 13-14.

183. Deepthi Nori, MFS.; Dr. Bruce McCord, PhD."Application of Pressure Cycling Technology (PCT) in Differential Extraction", American Academy of Forensic Sciences (AAFS) 65th Annual Scientific Meeting, Washington, DC, February 20-23, 2013.

184. Keyana Porter, Britt Turnquest, and Bruce McCord, Electrophoretic separation of drugs of abuse using laser-induced fluorescence detection, Annual Biomedical Conference for Minority Students, 2012 San Jose, Ca Nov 7-10, 2011

185. Rapid Direct PCR, a simple method for producing genotypes in under 20 minutes, Bruce McCord, Maurice Aboud, International Symposium on Human Identification, Nashville, TN Oct 7-10

186. Bruce McCord, “Using Curve Fitting Models to Assess PCR Inhibition in Forensic Samples, the NIJ Conference, Arlington, VA, June 18-20

187. Bruce McCord and Maurice Aboud, Rapid Direct PCR, a simple method for producing forensic genotypes in under 20 min, LACE 2012 Electrophoresis, Buenos Aires, Argentina, Nov 30-Dec4, 2012

188. Bruce McCord and George Duncan, Epigenetic markers, A forensic tool for the determination of biofluids, Green mountain DNA conference, Burlington, Vt August 1-3

189. Bruce McCord, Troubleshooting STR systems, Promega Latin American workshop on Human identification Miami, Florida August 31, 2012

190. Bruce McCord, Research in Forensic Chemistry, FIU Board of Trustees, September 11, 2012

191. Bruce McCord, PCR inhibition, Qiagen users forum, Hilden, Germany, March 13-14 2012

192. Bruce McCord, Epigentic tissue typing, Qiagen users forum, Dusseldorph Germany March 13-14 2012

193. Bruce McCord, Low copy DNA - A paradigm shift in forensic analysis?, FAME Tampa, FL, May 12,13, 2011

194. Chloe Deperre and Bruce McCord Simultaneous detection of low explosives by ESI-MS, FAME, Tampa, FL, May 12,13, 2011

195. Erika Doctor and Bruce McCord, Surface Enhanced Raman Analysis of Benzodiazepines, FAME, Tampa, FL, May 12,13, 2011

196. Bruce McCord NIJ Conference Washington, DC June 20-22, 2011

197. Jennifer Greaux, Bruce McCord NIJ Conference Washington, DC June 20-22, 2011

198. Bruce McCord Introduction to DNA typing, Baoji University, July 8, 2012, Baoji, China

199. Bruce McCord, DNA typing of degraded and inhibited samples, Chinese Academy of Sciences, Beijing China July 15, 2012

200. Bruce McCord, DNA recovery by pressure cycling and its application to differential extraction, Green Mountain DNA Conference, Burlington, VT July 25-27

201. Bruce McCord, NIJ Trace Evidence Symposium 2011, Electrospray Ionization-Mass Spectrometry (ESI-MS) Identification of Urea Nitrate and Ammonium Nitrate Residue, Kansas City MO August 8 - 11, 2011

202. Bruce McCord, A workshop on capillary electrophoresis in forensic analysis, FBI Laboratory, Quantico, VA, August 29-30

203. Erika L. Doctor, Bruce McCord, Surface-Enhanced Raman Analysis of Benzodiazepines using Gold Colloidal Solutions, Nano Florida, Miami, FL Sept 30, 2011

204. Bruce McCord, Presymposium workshop, DNA typing instrumentation – Overview of current systems and microdevice separations International Symposium on Human Identification, Washington, DC, October 3-6, 2011

205. Bruce McCord , Developing an understanding of PCR inhibition using real time PCR and melt curve analysis, International Symposium on Human Identification, Washington, DC, October 3-6, 2011

206. Deepthi Nori, Bruce McCord, Application of pressure cycling in differential extraction International Symposium on Human Identification, Washington, DC, October 3-6, 2011

207. Maurice Aboud, Bruce McCord, and Marcus Gassmann, FRapid STR screening using short channel microchip electrophoresis International Symposium on Human Identification, Washington, DC, October 3-6, 2011

208. Bruce McCord, Epigenetic Markers, A forensic tool for the determination of bodyfluids present at crime scenes International Symposium on Human Identification, Washington, DC, October 3-6, 2011

209. Bruce McCord and John Butler, Post symposium workshop, Troubleshooting Laboratory Problems, International Symposium on Human Identification, Washington, DC, October 3-6, 2011

210. 23d International Ion Chromatography Symposium (IICS 2011) Analysis of the Improvised Explosives Ammonium Nitrate and Urea Nitrate, Providence, RI October 16 - 19, 2011

211. Bruce McCord, Epigenetic Markers, A forensic tool for the determination of bodyfluids present at crime scenes Promega Canada, Toronto Canada November 1,2, 2011

212. Deepthi Nori, Bruce McCord, Application of pressure cycling in differential extraction Promega Canada, Toronto Canada November 1,2, 2011

213. Bruce McCord, Capillary electrophoresis for DNA analysis, Presymposium workshop, Latin American Conference on Capillary Electrophoresis, Hollywood beach, FL Dec 2-6, 2011

214. Bruce McCord, Developing an understanding of PCR inhibition using real time PCR and melt curve analysis, Latin American Conference on Capillary Electrophoresis LACE Dec 2-6, 2011

215. Deepthi Nori, Bruce McCord, Application of pressure cycling in differential extraction Latin American Conference on Capillary Electrophoresis, Hollywood beach, FL Dec 2-6, 2011

216. Mauriuce Aboud, Bruce McCord, and Marcus Gassmann, Forensic DNA screening using short channel microchip electrophoresis, Latin American Conference on Capillary Electrophoresis, Hollywood beach, FL Dec 2-6, 2011

217. Jennifer Greaux; Bruce McCord, Analysis of Smokeless Powders and Gunshot Residue Samples by UPLC-MS/MS; 3rd Annual South Florida Discipline Meeting; Miami Dade Police Department in Miami FL; February 2, 2012

218. Hanzou Fu, Bruce McCord, CE and CEC/MS for chiral drug detection, American Academy of Forensic Sciences, February 20-24, 2012

219. Jennifer Greaux, Bruce McCord, Organic gunshot residue by ESI-MS, American Academy of Forensic Sciences, February 20-24, 2012

220. Tania Madi, Bruce McCord, Epigenetic markers, A forensic tool for tissue typing American Academy of Forensic Sciences, February 20-24, 2012

221. Maurice Aboud, Bruce McCord, Rapid and direct genotyping by microfluidics. IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

222. Erika Doctor, Bruce McCord, Comparison of aggregating agents for SERS of Benzodiazepines, American Academy of Forensic Sciences, February 20-24, 2012

223. Deepthi Nori, Bruce McCord, Differential extraction of mixtures using PCT technology, American Academy of Forensic Sciences, February 20-24, 2012

224. Cecelia Crouse, Bruce McCord, “You can't fix by analysis what you bungled by design …a Cautionary DNA Tale” IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

225. Jennifer Greaux, Bruce McCord, Organic gunshot residue by ESI-MS, IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

226. Inge, Bruce McCord, Analysis of improvised fertilizer based explosives, IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

227. Bruce McCord, DNA source identification using epigenetic markers IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

228. Marice Aboud, Bruce McCord, Rapid and direct genotyping. IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

229. Erika Doctor, Bruce McCord, Comparison of aggregating agents for SERS of Benzodiazepines, IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

230. Deepthi Nori, and Bruce McCord, Differential extraction of mixtures using PCT technology, IFRI Forensic Forum, FIU, Miami, FL, March 9,10, 2012.

231. Bruce McCord, Inorganic Explosives Analysis, Ponca City, OK, University Multispectral Laboratories May 6, 2010

232. Bruce McCord, Analysis of Degraded DNA, Oklahoma State University May 7, 2010

233. Bruce McCord, The application of RT-PCR meld curves in the determination of PCR inhibition, Forensica 2010 Telc, Czech Republic May 24-26, 2010

234. Bruce McCord, The application and development of detection thresholds in the interpretation of low copy DNA, Forensica 2010 Telc, Czech Republic May 24-26, 2010

235. Bruce McCord, The development of methods for genotyping degraded DNA, International Forensic Science Symposium, University of Amsterdam, Amsterdam, Netherlands May 27, 2010

236. Bruce McCord, Robyn Thompson, Kerry Opel, Maribel Funes, and Silvia Zoppis, The application of RT-PCR meld curves in the determination of PCR inhibition, 2010 NIJ Conference, Washington, DC June 14-16, 2010

237. Bruce McCord and Marty Tracey, NIJ Advanced DNA typing workshop, Miami July 12-16, 2010

238. Bruce McCord, Threshold setting, NIJ Forensic Genetics Workshop, Miami July 22, 2010.

239. Jing Wang, Bruce McCord, Forensic Applications of "Fishing" DNA, Green Mountain DNA Conference Burlington, Vt July 26-28, 2010

240. Bruce McCord, George Duncan, Post PCR cleanup, the good,the bad, and the ugly, Green Mountain DNA Conference Burlington, Vt July 26-28, 2010

241. Bruce McCord, Robyn Thompson, and Kerry Opel, An examination of PCR Inhibition in forensic DNA genotyping by rt-PCR and CE, CE-ITP Baltimore, MD August 30-Sept 1

242. Maurice Aboud and Bruce McCord, A rapid pena STR screening method by microchip CE, CE-ITP, Baltimore, MD August 30-Sept 1

243. Deepthi Nori and Bruce McCord, Application of pressure cycling technology in differential extraction, Promega San Antonio TX October 11-13, 2010

244. Robyn Thompson and Bruce McCord, An Analysis of Binding Mechanisms for Real-Time Polymerase Chain Reaction(PCR) Inhibition Using Efficiency and Melting Curve Effects, Promega San Antonio TX October 11-13, 2010

245. Maurice Aboud and Bruce McCord, A Rapid Penta STR Screening Method by Microchip Capillary Electrophoresis, Promega San Antonio TX October 11-13, 2010.

246. Bruce McCord, Capillary Electrophoresis: Theory, Application, Troubleshooting, and Maintenance, MAFS 2010, Kansas City MO October 5, 2010

247. Bruce McCord, Maurice Aboud and Marcus Gassmann, Microfluidic DNA typing – ready for prime time? Promega Canada 2010 Ottawa Canada November 16-18

248. Bruce McCord, Low template DNA, A paradigm shift in DNA analysis?, LACE 2010, Florianopolis Brazil, December 3-7, 2010

249. Bruce McCord, Perspectives on Academics, Industry, and Government, PFLAGS, FIU, Dec. 17, 2011.

250. Bruce McCord, Rapid Analysis of Ammonium Nitrate (AN) and Urea Nitrate on surfaces using ion chromatography and electrospray LC/MS-TOF methods, DHS, Washington, DC February 16, 2011

251. Bruce McCord and Jennifer Greaux, Rapid Screening and confirmation of organic GSR using ESI-MS., NIJ Grantees Meeting, Chicago, IL February 22, 2011

252. Maurice Aboud and Bruce McCord, Rapid penta STR screening method by microchip AAFS, Chicago, IL February 22, 2011

253. Chloe DePerre, Inge Corbin, Adelaide Pena, and Bruce McCord, Trace analysis of urea nitrate as an ion pair, AAFS, Chicago, IL February 22, 2011

254. Deepthi Nori and Bruce McCord, Application of pressure cycling technology in differential extraction, AAFS, Chicago, IL February 22, 2011

255. Jennifer Greaux, Bruce McCord, and Danielle Lincoln, Methods development for the rapid separation of organic GSR by UPLC/MS, AAFS, Chicago, IL February 22, 2011

256. 26. Thompson, R.; McCord, B. An Analysis of Binding Mechanisms for Real-time Polymerase Chain Reaction (PCR) Inhibition using Efficiency and Melting Curve Effects, AAFS, Chicago, IL February 22, 2011

257. Deepthi Nori and Bruce McCord, Application of pressure cycling technology in differential extraction, FIU Scholarly forum, March 28, 2011

258. Maurice Aboud and Bruce McCord, Rapid penta STR screening method by microchip AAFS, FIU Scholarly Forum, March 28, 2011

259. Jennifer Greaux, Bruce McCord, and Danielle Lincoln, Methods development for the rapid separation of organic GSR by UPLC/MS, FIU Scholarly Forum, March 28, 2011.

260. Bruce McCord, The Application of Capillary and Microfluidic Electrophoresis to Problems in Toxicological and Forensic Analysis Coulter Series Lectures in Biomedical Engineering, FIU April 8, 2011

261. Bruce McCord "Advanced workshop on real time PCR," Boston, MA , June 4, 2009

262. Bruce McCord, "Mass spectrometry of low explosives," in Detection of Biological Agents for the Prevention of Bioterrorism, NATO ARW, Terme di Spezzano, Italy, 26 Jun 2009 - 02 Jul 2009

263. Bruce McCord, John Butler, "Advanced DNA Typing Workshop," at Florida International University (Miami, FL), July 20-24, 2009

264. Bruce McCord and John Butler, "Troubleshooting Common Laboratory Problems" at Green Mountain DNA Conference, Burlington, VT, July 27-29, 2009

265. Bruce McCord " The Application of Real Time PCR and Melt Curve Analysis in the

266. Investigation of Inhibitory Effects on DNA Typing" Green Mountain DNA Conference, Burlington, VT, July 27-29, 2009

267. Bruce McCord, Kerry Opel, Maribel Funes, and Silvia Zoppis " The effects of degradation and inhibition on DNA typing" The NIJ conference, June 15-17, 2009

268. Bruce McCord, "DNA typing," Arizona State University, August 26-28, 2009

269. Bruce McCord, "Chromatographic analysis of smokeless powders," TWFEX symposium, National Center for Forensic Sciences, Orlando, FL, September 14, 2009

270. Bruce McCord, Workshop on troubleshooting capillary electrophoresis systems, 6th Annual workshop on DNA technology, Toronto, CA. September 23-24.

271. Bruce McCord A comparison between real time PCR techniques, Plexor and Duo, 6th Annual workshop on DNA technology, Toronto CA Septermber 23-24, 2009

272. Bruce McCord, "DNA typing," Miami Science Museum, November 13,14, 2009.

273. Bruce McCord and Dee Mills, DNA typing and the CSI effect, Asthma Association, Miami Beach, November 8th 2009.

274. Bruce McCord, "Advanced workshop on real time PCR," Police Academy, Westchester New York January 8, 2010.

275. Robyn Thompson and Bruce McCord "Investigation of PCR inhibition using Plexor, "Young Forensic Scientists Forum, American Academy of Forensic Sciences, Feb 22-26, 2010.

276. Inge Corbin, Maximilien Blas and Bruce McCord, "Analysis of smokeless powder components by time of flight mass spectrometry, American Academy of Forensic Sciences, Feb 22-26, 2010.

277. Britt Turnquist and Bruce McCord, "Inline derivatization for detection of primary and secondary amine containing Drugs by CE-LIF" American Academy of Forensic Sciences, Feb 22-26, 2010.

278. Jennifer Greaux and Bruce McCord, "The application of CE and CEC-TOF/MS to the Analysis of Non traditional Drugs used to Facilitate Sexual Assault," American Academy of Forensic Sciences, Feb 22-26, 2010.

279. Bruce McCord, Silvia Zoppis*, and Maribel Funes- Huacca, "Effect of Inhibitors in STR amplifications from Forensic Samples," American Academy of Forensic Sciences, Feb 22-26, 2010.

280. Bruce McCord, Forensic Science at FIU, presentation to Miami Beach high school, FIU May 6, 2009.

281. Bruce McCord, Microfluidic approaches to forensic and DNA analysis, Molecular Imaging and Biomedical Sensing Interest Group One-day Symposia, FIU, March 14, 2009.

282. Bruce McCord, Forensic DNA typing of degraded DNA, Indian University Purdue University, Indianapolis, IN,March 26, 2009

283. Bruce McCord, Effect of inhibitors on DNA typing, NIJ DNA SWG, Washington DC, March 24, 2009

284. 5. Maribel Funes and Bruce McCord, Analysis of oxidative DNA damage in degraded tissue, American Academy of Forensic Sciences, Denver, CO, Feb17, 2009

285. Bruce McCord, LC/MS of explosives, *in* Workshop on recent advances in liquid chromatography and mass spectrometry, American Academy of Forensic Sciences, Denver, CO, Feb17, 2009

286. Maurice Aboud and Bruce McCord, A rapid penta STR screening method by microchip capillary electrophoresis, American Academy of Forensic Sciences, Denver, CO, Feb17, 2009

287. Jennifer Greaux and Bruce McCord, Method development for the analysis of non-traditional drugs used to facilitate sexual assaults, American Academy of Forensic Sciences, Denver, CO, Feb17, 2009

288. Inge Corbin and Bruce McCord, Analysis of smokeless powder components by capillary electrochromatography –time of flight mass spectrometry, American Academy of Forensic Sciences, Denver, CO, Feb17, 2009

289. Megan Bottegal, Katy Sherlach, Kelly Mount, Bruce McCord, Mark Miller, Analysis of Hydrogen Peroxide by HPLC-ED and HPLC-FD. American Academy of Forensic Sciences, Denver, CO, Feb17, 2009

290. Bruce McCord, Forensic DNA typing, Renneslaer University, Troy, New York, November 18, 2009

291. Bruce McCord and John Butler, Workshop on troubleshooting CE systems, International Symposium on Human Identification, Los Angeles, CA, October 14-16, 2008

292. Bruce McCord, Forensic DNA analysis, International Congress on Applied Chemistry, Monterrey Mexico, Sept 18-20, 2008

293. Bruce McCord and George Duncan, Workshop on Mixture Analysis, Midwestern Association of Forensic Scientists, Des Moines, IA Sept 30-October 1, 2008

294. Bruce McCord, Introduction to genotyping systems, Green Mountain DNA Conference, Burlington, VT August 3-6, 2008

295. Bruce McCord, Analytical Principles in the Interpretation of DNA Profiles, International Association of Forensic Scientists, New Orleans July 23-25, 2008

296. Bruce McCord and Dee Mills, Advanced DNA typing workshop – FIU, Miami, FL, July 14-18, 2008

297. Bruce McCord, The effects of degradation and inhibition on forensic DNA typing, Israeli Police Laboratory, Jerusalem, Israel, May 25, 2008

298. Bruce McCord, Recent developments in the analysis and detection of low explosives, 1st International symposium on Improvised Explosives–Rosh Hanikra, Israel May 21, 2008

299. Bruce McCord, Development of Capillary methods for DNA typing, Young Forensic Scientists Breakfast Seminar, American Academy of Forensic Sciences Annual Meeting, February 18-23, 2008. Washington, DC

300. Kerry Opel and Bruce McCord, The effect of primer melting temperature, sequence and amplicon length on PCR inhibition, American Academy of Forensic Sciences Annual Meeting, February 18-23, 2008. Washington, DC.

301. Megan Bottegal and Bruce McCord, Forensic analysis of black powder substitutes by ESI-TOFMS, American Academy of Forensic Sciences Annual Meeting, February 18-23, 2008. Washington, DC.

302. Matt Buetner and Bruce McCord The effect of environmental degradation on DNA with respect to time and conditions, American Academy of Forensic Sciences Annual Meeting, February 18-23, 2008. Washington, DC.

303. Stefano Boulos, Oscar Cabrices, Maximilien Blas and Bruce McCord, Development of an entangeled polymer solution for improved resolution in DNA analysis using a portable microfluidic instrument American Academy of Forensic Sciences Annual Meeting, February 18-23, 2008. Washington, DC

304. Maximilien Blas and Bruce McCord, Determination of trace levels of benzodiazepines in urine using capillary electrochromatography time of flight mass spectrometry American Academy of Forensic Sciences Annual Meeting, February 18-23, 2008. Washington, DC

305. Bruce McCord, Capillary electrophoresis, capillary electrochromatography and microfluidic approaches to the analysis of club drugs, Latin American Conference on Capillary Technologies, December 1-4, 2007, Santiago, Chile

306. Bruce McCord, Advanced DNA Typing Workshop, City of Phoenix Forensic DNA Laboratory, Sept 12-14, 2007, Phoenix, AZ

307. Bruce McCord DNA, Inhibitors and Degradation, Annual meeting of the Association of Forensic DNA Analysts, August 2, 3, 2007, Austin, TX

308. Bruce McCord, Workshop on Adv DNA Typing and CE Troubleshooting, Annual Meeting of the Midwest Association of Forensic Scientists, Sept 24-26, 2007, Traverse City, MI

309. Stefano Boulos, Oscar Cabrices, Maximilien Blas and Bruce McCord, Development of an entangeled polymer solutiion for improved resolution in DNA analysis using a portable microfluidic instrument, 31st International Symposium on Capillary chromatography, Nov 28-30, 2007 Albuquerque New Mexico

310. Maximilien Blas and Bruce McCord, Determination of trace levels of benzodiazepines in urine using capillary electrochromatography time of flight mass spectrometry, 31st International Symposium on Capillary chromatography, Nov 28-30, 2007 Albuquerque New Mexico

311. Bruce McCord, Chromatographic methods in trace evidence. NIJ and FBI Trace Evidence Symposium, August 13, 2007, Clearwater Beach, FL

312. Bruce McCord, Microfluidic Approaches to the detection of club drugs, UCF, January 10, 2008, Orlando, FL

313. Bruce McCord, Forensic DNA typing, Rollins College, Sept, 21, 2007, Winterhaven, FL

314. Bruce McCord, Analysis of Low Explosives, FBI workshop on instrumental analysis of explosives, March 14-16, Quantico, VA 2007.

315. Kerry Opel and Bruce McCord, Develomental validation of MiniSTRs, The NIJ Conference, Arlington, VA July 23-25, 2007.

316. Bruce McCord and Kerry Opel, Determination of inhibition mechanisms in forensic DNA typing The NIJ Conference, Arlington, VA July 23-25, 2007.

317. Stefano Boulas, Maximilien Blass and Bruce McCord, Development of an entangled polymer solution for improved resolution in DNA analysis using a portable microfluidic instrument, 235th ACS National Meeting, New Orleans, LA, April 6-10, 2008