Forensic Comparative Science Specialists, LLC phone: 603.568.2668

P.O. Box 604 email: sostrowski@focossforensics.com

Concord, NH 03302-0604 web: FocossForensics.com

SPECIALTIES

Firearms operability, bullet & cartridge case microscopy (ballistics), toolmarks, fingerprint/palm print comparisons, latent print processing, physical fit/fracture comparisons, obliterated serial number recovery, crime scene processing, projectile trajectory, gunshot residue (GSR), muzzle-to-target shooting distance determination.

CURRENT EMPLOYMENT

July 2007 -Co-Owner & Supervising Scientist

Present Forensic Comparative Science Specialists, LLC

Concord, New Hampshire

Duties include: Providing consultation in a number of disciplines for forensic laboratories/units, the legal community in both criminal and civil matters, and private parties. Conducting administrative and technical reviews of case work. Performing examinations or reexaminations of physical evidence. Assessing transcripts from trials, hearings and depositions. Offering expert testimony. Accreditation preparation to include the development of protocols, procedures, and training programs. Providing technical training in the areas of crime scene processing, forensic photography, and technical aspects of various forensic science disciplines.

January 2013 -Criminalist III – Supervisor (Civilian) Present

New Hampshire State Police Forensic Laboratory

Concord, New Hampshire

Duties include: Conducting examinations of physical evidence in the areas of latent prints, firearms, toolmarks, physical fit/fracture comparisons, obliterated serial number restoration, and powder gunshot residue/muzzle-to-target shooting distance determination in conjunction with criminal cases. Writing formal laboratory reports summarizing examination results. Testifying in court as an expert witness. Conducting administrative and technical reviews of other scientists' casework. Developing, documenting, preserving and collecting physical evidence at crime scenes. Coordinating examinations of physical evidence in major cases. Training new forensic scientists. Operating the Tri-State and the FBI National Automated Biometric Identification Systems (ABIS). Technical Manager for the disciplines of Friction Ridge, Firearms/Toolmarks and Crime Scene Processing. Supervisor of the Pattern Evidence Unit.

EDUCATION

Master of Science Degree - May 1996 Bachelor of Science Degree - May 1994 The University of New Haven Dickinson College West Haven, Connecticut Carlisle, Pennsylvania Major - Forensic Science Major - Biology

PROFESSIONAL EXPERIENCE

August 2004 - January 2013 Criminalist II (Civilian)

New Hampshire State Police Forensic Laboratory

Concord, New Hampshire

July 1999 - August 2004 Criminalist I (Civilian)

New Hampshire State Police Forensic Laboratory

Concord, New Hampshire

PROFESSIONAL TRAINING

Resident Training Programs

New Hampshire State Police Forensic Laboratory

July 1999 - August 2000 Latent Prints

December 2001 - June 2002 Serial Number Recovery

September 2000 - April 2004 Firearms, Toolmarks, Physical fit/fractures, Gunshot residue

INTERNSHIPS

February 1996 - April 1996 Bridgeport Police Department, Identification Unit

Bridgeport, Connecticut

August 1995 - December 1995 West Haven Police Department, Identification Division

West Haven, Connecticut

PROFESSIONAL ORGANIZATIONS

Association of Firearm and Tool Mark Examiners (AFTE)

Regular Member 2009 - Present Provisional Member 2004 - 2009 Membership Number #2409

International Association for Identification (IAI)

Active Member 2000 - Present

Membership Number #17716

International Crime Scene Investigators Association (ICSIA)

Member 2016 - 2018

New England Area Firearms and Tool Mark Examiners Group (NEAFTE)

Active Participant 2000 - Present

New England Division International Association for Identification (NEDIAI)

Regular Member 2000 - Present

Membership Number #386

Northeastern Association of Forensic Scientists (NEAFS)

Regular Member 2004 - 2019 Membership Number #1377

PROFESSIONAL CERTIFICATIONS

Association of Firearm and Tool Mark Examiners

- ♦ Firearms (2006 Present)
- ◆ Toolmarks (2006 Present)
- ♦ Gunshot Residue (2006 Present)

International Association for Identification

◆ Latent Prints (2003 – Present)

RECOGNITION/ AWARDS

AFTE Presidential Recognition Award (service to Certification Committee), 2022

- IAI Presidential Citation, Members of the Forensic Comparative Examination Committee for expeditious work formulating the IAI's response to the forensic science information solicitation from the President's Council of Advisors on Science and Technology (PCAST) at the White House, 2016
- Best Original Article, *N.E.D.I.A.I. Journal*, for "Leucocrystal Violet: Enhancing Your Blood Processing Experience," New England Division International Association for Identification, 14th Annual Educational Conference, 2005

PAPERS/ PUBLICATIONS

- Ostrowski, S., "Identification of a Toolmark on Human Skull Utilizing Cattle Blade Bones as Test Medium," *AFTE Journal*, vol. 38, no. 4, pp. 348-55, 2006
- Ostrowski, S. and Dupre, M., "Fingerprint Impression Development Using a Vacuum Box," *Journal of Forensic Identification*, vol. 56, no. 3, pp. 356-63, 2006
- Ostrowski, S., "Leucocrystal Violet: Enhancing Your Blood Processing Experience," N.E.D.I.A.I. Journal, vol. 10, no. 2, 2005
- Contributing editor, *Handbook of Forensic Services*, New Hampshire Department of Safety, Division of State Police Forensic Laboratory, 1st ed., 2002
- Ostrowski, S., "Simultaneous Impressions: Revisiting The Controversy," *The Weekly Detail*, no. 13, 2001 http://www.clpex.com/Articles/TheDetail/1-99/TheDetail13.htm
 - Reprinted in N.E.D.I.A.I. Journal, vol. 10, no. 3, 2005
 - Reprinted in *Lone Star Forensic Journal*, vol. 59, no. 4, 2005

ARTICLES/ COMMENTARIES

- Ostrowski, S., "New Hampshire Supreme Court Reverses Langill," *The Weekly Detail*, no. 347, 2008 http://www.clpex.com/Articles/TheDetail/300-399/TheDetail347.htm
 - Reprinted in N.E.D.I.A.I. Journal, vol. 13, no. 1, 2008
- Ostrowski, S., "New Hampshire Supreme Court Hears Arguments in Langill Appeal," *The Weekly Detail*, no. 341, 2008. http://www.clpex.com/Articles/TheDetail/300-399/TheDetail341.htm
- Ostrowski, S., "In the Wake of the Langill Decision," Missouri Division of the International Association for Identification website, 2007. http://www.moiai.org/documents/LangillDecision.pdf

- Ostrowski, S., "Coffey Rules on Reconsideration of New Hampshire's Langill Decision," *The Weekly Detail*, no. 296, 2007. http://www.clpex.com/Articles/TheDetail/200-299/TheDetail296.htm
 - Reprinted in *Dactylogram*, vol. 2, no. 5, 2007
- Ostrowski, S., "Judge Grants Motion to Exclude Latent Fingerprint Evidence," *The Weekly Detail*, no. 285, 2007. http://www.clpex.com/Articles/TheDetail/200-299/TheDetail285.htm
 - Reprinted in Evidence Technology Magazine, vol. 5, no. 2, 2007
 - Reprinted in The California Identification Digest, vol. 7, no. 2, 2007
 - Reprinted in *The Print*, vol. 23, no. 2, 2007
- Ostrowski, S., "Daubert Challenge to Simultaneous Impressions in Massachusetts," *The Weekly Detail*, no. 213, 2005. http://www.clpex.com/Articles/TheDetail/200-299/TheDetail213.htm

LECTURES/ PRESENTATIONS

- Understanding & Litigating Pattern Interpretation Evidence: Toolmarks and Related Evidence
 National Clearinghouse for Science, Technology & the Law at Stetson University College of Law,
 Orlando, FL, 2023
- Understanding & Litigating Pattern Interpretation Evidence: Toolmarks and Related Evidence
 National Clearinghouse for Science, Technology & the Law at Stetson University College of Law,
 Virtual Training, 2023
- How Taking Quality LiveScan Impressions Affects Forensic Latent Print Examinations NH LiveScan Users Group Meeting, Concord, NH, 2023
- Certification and Accreditation for Crime Scene Investigation and Forensic Science (co-presented with <u>Triplett, M</u>. (IAI) and <u>Sale, P</u>. (ANAB)), web-based
 - U.S. Department of State, Bureau of International Narcotics and Law Enforcement Affairs, 2022
- Case Study: *Murder of Kelly Robarge*, (co-presented with <u>Sonia, J</u>. and <u>Hennessy, P</u>.) NEDIAI Education & Training Conference, Portsmouth, NH, 2017
- Poster Presentation: *Breechface Marks vs. Manufacturing Marks on Federal Cartridge Cases: A Case Study*, IAI Educational Conference, Sacramento, CA, 2015
- Breechface Marks vs. Manufacturing Marks on Federal Cartridge Cases: A Case Study, New England Area Firearms Examiners Conference, East Hartford, CT, 2014
- Preparing for a Daubert Hearing on Short Notice, NEDIAI Education & Training Conference, Nashua, NH, 2012

Overview of the NAS Forensic Science Report and How it Pertains to Pattern Evidence Examinations,

- NEDIAI Education & Training Conference, Freeport, ME, 2009
- New England Area Firearms Examiners Meeting, Kingston, RI, 2009

Toolmark Recovery Workshop,

- NEDIAI Education & Training Conference, Portsmouth, NH, 2008
- NEDIAI & NEAFS Joint Educational Conference & Training Seminar, Manchester, VT, 2010

Toolmark and Physical Match Evidence at Crime Scenes, NEDIAI Education & Training Conference, Portsmouth, NH, 2008

Overview of Firearms and Ammunition Evidence,

Assistant Deputy Medical Examiners' In-Service Training, Concord, NH, 2008

Collection and Preservation of Firearms, Toolmark, Physical Match and Gunshot Residue Evidence, Evidence Recovery Academy, Rochester, NH, 2008

Identification of a Hatchet Toolmark on a Homicide Victim's Skull: A Case Study,

- NEDIAI Education & Training Conference, Newport, RI, 2007
- New England Area Firearms Examiners Meeting, Meriden, CT, 2008

Daubert: Coming to a Courtroom Near You, (co-instructed with Corson, L.) NEDIAI Education & Training Conference, Newport, RI, 2007

The Cast Breech Block of a Sig Sauer Mosquito Pistol and Its Effect on Cartridge Case Identifications,

- New England Area Firearms Examiners Meeting, Meriden, CT, 2007
- AFTE Training Seminar, Honolulu, HI, 2008

Forensic Evidence at Shooting Scenes, (co-instructed with <u>Dupre, M.</u>)
NH State Police Major Crime Unit and Troop Detectives, Department of Safety, Concord, NH, 2007

Processing Guns for Latent Impressions: What Every Firearms Examiner Wants You to Know,

- IAI Educational Conference, Boston, MA, 2006
- Boston Police Department, Firearms Analysis Section, Boston, MA, 2010
- Boston Police Department, Latent Print Section and Evidence Intake Unit, Boston, MA, 2011

Utilizing Cattle Blade Bones as Test Medium in the Identification of a Toolmark on Human Skull, AFTE Training Seminar, Springfield, MA, 2006

New Hampshire Daubert Update, Northeast Latent Print Forum, Meriden, CT, 2005

Forensic Field Training,

- Weare Fire and Safety Complex, Weare, NH, 2004
- New Hampshire Fish and Game Department, Keene, NH, 2004

From IAFIS Hit to Problem Identification: A Case Study, Northeast Latent Print Forum, Meriden, CT, 2004

Leuco Crystal Violet: Crime Scene and Laboratory Enhancement of Blood Impressions, NEDIAI Education & Training Conference, Manchester, NH, 2003

How Taking Quality LiveScan Impressions Affects Forensic Latent Examinations, NH LiveScan Users Group Fall Meeting, NHSP Criminal Records Unit, Concord, NH, 2003

Forensic Science Technology and NHSP Laboratory Capabilities,

- Merrimack County Investigators Group, Concord, NH, 2003
- Belmont Police Department, Belmont, NH, 2003

*Impression Evidence Documentation, Enhancement, Preservation and Collection,*Belmont Police Department, Belmont, NH, 2003

Fingerprint Techniques Workshop,

The New England Commission on Forensic Education, Danvers, MA, 2000

Guest speaker at various high schools, social organizations and criminal justice/legal associations.

TEACHING ACTIVITIES

Adjunct instructor at <u>Boston University School of Medicine</u>, Biomedical Forensic Science Graduate Program, Boston, MA. Co-Instructor for course entitled: Forensic Science 706: *Pattern Evidence Analysis* Spring 2011-2013, Fall 2014-Present

Guest lecturer at University of New Hampshire Franklin Pierce School of Law, Concord, NH. Panel Discussion: The CSI Effect with co-panelists Hon. John C. Kissinger, Jr. and Senior Assistant Attorney General Geoffrey W.R. Ward, Spring 2022

Guest lecturer at <u>The University of New Hampshire</u>, Main Campus, Durham, NH Presented *Firearms, Toolmarks and Other Forensic Comparative Science Evidence* for course entitled: Biology 420: *Introduction to Forensic Sciences*, Fall 2009-2012, Spring 2014-2020

Adjunct instructor at New Hampshire Police Standards and Training Council, Concord, NH Co-instructor for lectures entitled:

- Taking Quality Inked Impressions and Processing for Latent Impressions (2005-2006, 2009-2011)
- Taking Quality Inked Impressions combined with Impression Evidence: Documentation, Preservation and Collection (2006-2009)
- *Utilizing Fingerprint Evidence in Your Investigations* (2004)
- *Taking Quality Inked Impressions* (2002-2004)
- Using the Tri-State and Integrated AFIS Systems as Investigative Tools (2001)

Guest lecturer at New Hampshire Police Cadet Training Academy, Hesser College, Manchester, NH Instructor for lecture entitled:

Forensic Science: An Introduction to Physical Evidence (2001, 2004)

Guest lecturer at New Hampshire Bar Association Continuing Legal Education (CLE) Program, Concord, NH Presented topic "Toolmarks & Firearms Related Evidence" at the following programs:

- Forensic Science: Inside the NH State Forensic Laboratory (2016)
- Forensic Analysis and the New Hampshire Crime Lab (2008)

PROFESSIONAL ACTIVITIES

AFTE Certification Committee, Chair, 2017-2022, Member, 2022-Present

IAI Forensic Comparative Examination Committee, Member, 2015-2021

IAI Forensic Identification Standards Committee (III), Member, 2009-2014

AFTE Web Oversight Committee (Ad-Hoc), Member, 2008-2009

Collaborative Testing Services, Inc. (CTS), beta test evaluator:

- Shooting Reconstruction: Bullet Trajectory Angle Determination Research Test, 2017
- Reloaded Cartridge Case Research Test, 2016
- Toolmark Pre-Distribution Proficiency Test (x2), 2006

Participant in reliability, validation and other research studies:

- The Latent Print Examiner Black Box Study v.2022, FBI Laboratory Division and Noblis, 2023
- VCM Class & Subclass Characteristics Study Part I and Part II, Cadre Research Labs, 2022
- Frequency of Different Kinds of Fingerprint Minutiae and the Variability in Nomenclature, Wilson Center for Science and Justice at Duke University Law School, 2022
- Identification of Fired Bullets from Consecutively Manufactured Glock Marksman Barrels (GMB) Solely Using Rail Striae, Delaware State Police Forensic Firearms Services Unit, 2022
- Virtual Comparison Microscopy: Isolated Pairs Study, Cadre Forensics, 2022
- Validating Conclusion Scales in the Forensic Sciences (Toolmarks), Indiana University Department of Psychological and Brain Sciences, 2020
- The Validity of Cartridge Case Comparisons Pt. II, Iowa State University of Science and Technology Forensic Psychology Laboratory, 2020
- Virtual Comparison Microscopy Topography Resolution Study, Cadre Forensics, 2019
- The Validity of Cartridge Case Comparisons Study, Iowa State University, 2019
- Visual Bootstrapping Study, Indiana University Department of Psychological and Brain Sciences, 2019
- Virtual Comparison Microscopy Error Rate Study, Cadre Forensics & RCMP, 2018
- Testing the Accuracy and Reliability of Palmar Friction Ridge Comparisons: A Black Box Study, RTI International and University of Lausanne, 2018
- Glock Firing Pin Aperture Shear Mark Study, Netherlands Forensic Institute, 2018
- Firearms Decision Analysis Black Box Study, FBI & Ames Laboratories, 2017
- Identification of Fired Bullets Without a Firearm Part II, Palm Beach County Florida Sheriff's Office, 2017
- Error Rates in Toolmarks Comparison of Snap-Off Blades, Singapore Health Sciences Authority, 2017
- Deconstructing Decision-Making in the Analysis Phase of Latent Print Examinations: A White Box Study, Heidi Eldridge, RTI International, 2017
- Identification of Fired Bullets Without a Firearm, Palm Beach County Florida Sheriff's Office, 2017
- Virtual Microscopy for the Reaching of Comparative Conclusions in Firearms Analysis, Dr. Ryan Lilien, Cadre Research Labs, 2016
- 40S&W Cartridge Case Isolated Pairs, Indiana State Police Laboratory Division, Firearms Identification Unit, 2016
- Investigation of False Positive and False Negative Errors for Cartridge Casing Comparisons, Midwest Forensics Resource Center at the Ames Laboratory USDOE, 2013
- Five Consecutively Manufactured Glock Gen4 Barrels, Louisiana State Police Crime Lab, Physical Evidence Unit, 2013
- Ten Consecutively Manufactured Hi-Point Firing Pins, Florida Department of Law Enforcement, Orlando Regional Operation Center, 2012
- Ten Consecutively Manufactured Glock EBIS (Miami) Barrels: Part II Same EBIS Pattern, Miami-Dade Police Department, Forensic Identification Section, 2012
- Detection of Forged Fingerprints, Boston Police Department, Latent Print Unit, 2011
- Ten Consecutively Manufactured Ruger Slides: Part II Durability Test, Miami-Dade Police Department, Forensic Identification Section, 2010

- Ten Consecutively Manufactured Hi-Point Slides, New York City Police Department, Firearms Analysis Unit, 2010
- Ten Consecutively Manufactured Ruger Slides, Miami-Dade Police Department, Forensic Identification Section, 2010
- Ten Consecutively Manufactured Glock EBIS (Miami) Barrels, Miami-Dade Police Department, Forensic Identification Section, 2010
- Informing the Judgments of Fingerprint Analysts Using Quality Metric and Statistical Assessment Tools, Minnesota Bureau of Criminal Apprehension and Ecole des Sciences Criminelles, University of Lausanne, Switzerland, 2010
- Statistical Analysis of Toolmark Striations (utilizing striated makes from both sides of 50 consecutively made screwdriver tips), Dr. L. Scott Chumbley, Ames Laboratory for Materials Science and Engineering at Iowa State University, 2008
- Ten Consecutively Rifled 9mm Ruger Pistol Barrels, Dr. James E. Hamby, International Forensic Science Laboratory & Training Centre, Indianapolis, IN, 2007
- Fracture Patterns of Consecutively Manufactured Hacksaw Blades, Virginia Department of Forensic Science, Firearms & Toolmark Unit, 2007
- The Application of ACE-V to Simultaneous (Cluster) Impressions, South Carolina Law Enforcement Division, Latent Print/Crime Scene Department, 2006

Conference Technical Program Chair:

- NEDIAI Educational Conference, Portsmouth, NH, 2017 (Co-Chair)
- NEDIAI Educational Conference, Nashua, NH, 2012
- NEAFS & NEDIAI Joint Educational Conference and Training Seminar, Manchester, VT, 2010 (Co-Chair)
- NEDIAI Educational Conference, Portsmouth, NH, 2008
- AFTE Training Seminar Host Committee, Springfield, MA, 2006 (Technical Program Co-Chair)

Conference Program Moderator:

- The Forensic Scientist's Response to the NAS Report: A Panel Discussion with Joseph Bono, Robert Garrett, Dennis Hilliard, Noah Bookbinder, Kenneth Melson, Mark Stolorow, and Robin Jones, NEAFS & NEDIAI Joint Educational Conference and Training Seminar, Manchester, VT, 2010 (Co-Moderator)
- National Academy of Sciences Report: A Panel Discussion with Richard Samdperil, Esq., Lisa Steele, Esq., Kenneth Martin, Charles Caouette, Robert Garrett and John Vanderkolk, NEDIAI Education & Training Conference, Freeport, ME, 2009
- Daubert Fingerprint Issues: A Panel Discussion with Pat Wertheim, Dr. Simon Cole, Lisa Steele, Esq. and Kirsten Wilson, Esq., NEDIAI Education & Training Conference, Burlington, VT, 2005

CONTINUING EDUCATION

- The Increased Value of Forensic Science to Lead Gun Crime Investigations, FTCOE and RTI, web-based
- 2023 So You Think You're Ethical? Ethics and Forensic Science, Center for Forensic Science Research & Education, web-based

Latent Print Technical Leader workshop, IAI, National Harbor, MD

Imaging the Unseen with Digital Ultraviolet, Visible and Infrared Technology workshop, IAI, National Harbor, MD

Face Recognition for Beginners workshop, IAI, National Harbor, MD

2022 Manufacturing Methods of Glock Pistols, AFTE, web-based

Overview of a Recent Firearms Daubert Hearing in Alabama, Alabama Department of Forensic Services, Firearm and Tool Mark Section, web-based

Presenting Firearms Evidence at Trial and Preparing for Expert Witness Testimony, BJA and RTI, web-based 80% Guns – A Current Discussion of What Forensic Firearm Examiners Are Encountering on the Bench, AFTE, web-based

Fingerprint Analysis: Preparing for Trial and Expert Witness Testimony, BJA and RTI, web-based Overview of the Cadre's 3D VCM Tools and Technology, Cadre Forensics, web-based

A Discussion about Recent Studies Including Whether Inconclusives are Errors, AFTE, web-based Implementing a Paperless System - Panel Discussion, AFTE, web-based

Whiskey in the Courtroom Symposium: Evolving Trends in Forensic Science (Firearms Evidence)
Duke Law Center for Criminal Justice & Professional Responsibility, web-based

- Two-Pronged Study of Bullets Fired by Consecutively Rifled Ruger LCP Barrels, RTI, web-based An Improved Cartridge Case Comparison Algorithm, Cadre Forensics, web-based Best Practices for Digital Image Processing, RTI International, web-based Statistical Thinking for Forensic Practitioners: 3 Part Short Course, CSAFE, web-based Spring Lecture Series: tenprint, ABIS, latent print, photography, NEDIAI, web-based
- 2020 Expert Witness Testimony: Advanced Skills for Forensic Science Professionals, NEDIAI, web-based Resolving Conflict in Friction Ridge Examinations, Elite Forensic Services, web-based Recognition of Homemade Explosives at Scenes, NHSP EOD Unit What if I Don't Agree? Conflict Resolution in Latent Prints workshop, IAI, web-based Electronic Submission of Latent Print Evidence, Indiana State Police & MWAFS, web-based Challenging Forensic Science: How Science Should Speak to Court, University of Lausanne, web-based Results of a Black Box Study on the Accuracy and Reliability of Palm Print Comparisons, RTI, web-based
- 2019 An Update on Strengthening Forensic Science in the United States: A Decade of Development webinar, AAAS and NIST

Comparison of Plantar Friction Ridge Impressions, Ron Smith & Associates, Dedham, MA

Slide Fire Familiarization Workshop, AFTE, Nashville, TN

How Jurors Evaluate Fingerprint Evidence webinar, CSAFE

Fingerprint Processing on Difficult Surfaces webinar, Texas Forensic Science Academy

Emerging Forensic Research in Firearms and Toolmarks Webinar: Audio Forensics of Gunshot Sounds & Restoration of Defaced Serial Numbers, FTCoE

2018 Overview of the Exculpatory Evidence Schedule, NH Attorney General's Office, Concord, NH 3D Virtual Microscopy and Objective Identification for Firearms Identification workshop, AFTE, Charleston, WV

Class Characteristics of Toolmarks in Bone and Cartilage Workshop, AFTE, Charleston, WV Subclass Characteristics Workshop, AFTE, Charleston, WV

Machining for the Firearm / Toolmark Examiner Workshop, AFTE, Charleston, WV

Impression, Pattern and Trace Evidence Symposium (web stream), FTCoE

A Close Look at 3D Microscopy for Firearms Identification Webinar, FTCoE

2017 Trajectory Analysis from Abnormal Surfaces Workshop, NEDIAI, Portsmouth, NH

Firearms Lecture Series workshop, NEDIAI, Portsmouth, NH

MorphoTrak Automated Fingerprint Identification System site training, MorphoTrak/IDEMIA, Concord, NH Making Optimal Decisions in Identifications and Exclusions – A Scientific Approach Workshop, IAI, Atlanta, GA

Reducing Erroneous Exclusions Workshop, IAI, Atlanta, GA

Fracture Examination Workshop, IAI, Atlanta, GA
Foundations of Courtroom Testimony Online Workshop, Texas Forensic Science Academy
Toolmark Examination Training Course, RI State Crime Laboratory, Kingston, RI
Minimizing Bias in Forensic Decision Making Online workshop, Dr. Itiel Dror

- 2016 Understanding Bias and Courtroom Testimony Panel Discussion, NEDIAI, Dedham, MA New Paradigm for Fingerprint Reporting W/O Individualization Webinar, FTCoE Foundations of Forensic Photography Online Workshop, Texas Forensic Science Academy Shooting Scenes - Staged or Not Staged - Find the Red Flag Indicators Workshop, AFTE, New Orleans, LA "Ring of Fire" Workshop, AFTE, New Orleans, LA
- 2015 Firearm Markings online training module, International Firearm Specialists Academy
 Ammunition online training module, International Firearm Specialists Academy
 Forensic Firearm Examination Webinar, Integrated Forensic Laboratories & NMS Labs
 Foundations of Fingerprint Comparison Online Workshop, Texas Forensic Science Academy
 False-Positive and False-Negative Error Rates in Cartridge Case Comparisons webinar, FTCoE
 Special Topics in GSR webinar, FTCoE
- Implication of ISO 17025 Calibration on Comparison Microscopes Webinar, Leica Microsystems Forensics@NIST 2014 Webinar: Ballistics/Toolmarks, NIST
 Shooting Reconstruction: The Four Elements of Trajectory Webinar, FTCoE and RTI
 Machinegun Conversions: Differentiating Between Deliberate Full-Auto Modifications and Unintentional Malfunctions Workshop, AFTE, Seattle, WA
 Make and Shoot Black Powder Workshop, AFTE, Seattle, WA
 Double-Casting Workshop, AFTE, Seattle, WA
 Universal Latent Workstation (ULW) Software Training Program, FBI/CJIS, Concord, NH
 Sturm, Ruger & Co. Armorer School (LCP/LC9 pistol), Newport, NH
- Toolmark and Fracture Match Imaging Workshop, IAI, Providence, RI
 UV & IR Gunshot Residue Photography Workshop, IAI, Providence, RI
 What Makes a Credible Witness? Webinar, Forensic Bioscience Consultants and Forensic Magazine
- 2012 Application of Shape Measurement and Statistical Tools to Fingerprint and Footwear Evidence webinar, Idaho State Police Forensic Services and the Midwest Forensic Resource Center Measurement Uncertainty in Firearms, ASCLD/LAB & Heusser Neweigh, Albany, NY Application of Spatial Statistics to Latent Print Identifications webinar, RTI Measurement Confidence for the Forensic Laboratory Webinar, ASCLD/LAB & Heusser Neweigh
- 2011 ASCLD/LAB-International (ISO) Accreditation Preparation Course, ASCLD/LAB, Burlington, MA
 Mass Disaster Drill at Pease International Tradeport, OCME Temporary Morgue Team, Portsmouth, NH
- 2010 Ethics in Forensic Science, NEAFS & NEDIAI Joint Educational Training Seminar, Manchester, VT Presenting Information Visually, West Virginia University Forensic Science Initiative, Boston, MA Advantages of Digital Media, West Virginia University Forensic Science Initiative, Boston, MA Credibility is Believability: Success in the Courtroom webinar, The Trial Experts Contemporary Issues in Firearms Identification Workshop, AFTE, Henderson, NV Testifying as an Expert Art or Science Workshop, AFTE, Henderson, NV Leica Microscopy and Imaging Workshop, Meriden, CT
- 2009 Lips, Elbows and Other Skin Impressions Workshop, NEDIAI, Freeport, ME

Examination of Bodies for Fingerprints Workshop, IAI, Tampa, FL

Fingerprint Examination and Fingerprint Statistics Workshop, IAI, Tampa, FL

Statistics and Probabilities Workshop, IAI, Tampa, FL

FBI Gunpowder and Gunshot Residue: Muzzle-to-Target Distance Determination road school Federal Bureau of Investigation, Springfield, MA

2008 Comparison of Plastic Garbage Bags Workshop, NEDIAI, Portsmouth, NH

Advanced Shooting Incident Reconstruction, NH PS&T, Concord, NH

Shooting Incident Reconstruction/Officer Involved Shooting Investigation, NH PS&T, Concord, NH

Trajectory Reconstruction and 3D Scanning Workshop, AFTE, Honolulu, HI

Examination and Comparison of Cartridges, Cartridge Cases, Shotshells and Fired Shotshells, FATE Forensic Instruction, Boston, MA

Introduction to Scanning Electron Microscopy and Energy Dispersive Spectroscopy (SEM-EDS), NHSPFL, Concord, NH

Basics of Crime Scene Documentation Webinar, Forensic Magazine

Fundamentals of Crime Scene Investigation and Evidence Collection, Ron Smith & Associates, Concord, NH

2007 Ultraviolet/Infrared Forensic Imaging webinar, FujiFilm

Ethics in Forensic Science: Value Based Decision Making, NH State Police Forensic Lab, Concord NIJ Daubert Workshop, New England Society Crime Lab Directors, Concord, NH

Introduction to Saw and Toolmarks on Bone workshop, AFTE, San Francisco, CA

Potential for Errors in Cartridge Case Identification, Boston Police Department, Boston, MA

2006 Daubert Admissibility Issues and Preparation for the Toolmark Examiner, ATF, Hamilton, NJ

Analysis of Distortion in Latent Prints Workshop, IAI, Boston, MA

Development of Latent Prints on Tape Workshop, IAI, Boston, MA

Optimum Combination of Light Sources, Dye Blends and Filters Workshop, IAI, Boston, MA

Casting with AccuTrans Workshop, IAI, Boston, MA

The Expert Witness: A Daubert Presentation for Firearms and Toolmark Examiners, ATF, Hamilton, NJ

2005 Forensic Individualization of Images with Configural Processing, NEDIAI, Burlington, VT

Using Lasers in Trajectory Reconstruction at the Crime Scene Workshop, IAI, Dallas, TX

Forensic Comparisons of Photographs and Objects, IAI, Dallas, TX

Ultraviolet Fluorescence Digital Photography Workshop, IAI, Dallas, TX

Advanced Techniques for Photographing Shoeprints, Latent Fingerprints and Plastic Bag Extrusion Marks Workshop, IAI, Dallas, TX

2004 Physical Fracture Match Workshop, Document Consulting Service, Concord, NH

Advanced Digital Imaging Techniques Workshop, IAI, St. Louis, MO

Recovery of Fingerprint Evidence from Human Skin Workshop, IAI, St. Louis, MO

Close-Up Imaging Workshop, IAI, St. Louis, MO

SIG Sauer Law Enforcement Armorer Course (pistol), Epping, NH

2003 Fracture Match Techniques Workshop, NEDIAI, Manchester, NH

Reconstruction of Shooting Crime Scenes Workshop, NEAFS, Pittsfield, MA

Demystifying Palm Prints, Printrak Users' Conference, Denver, CO

Glock Armorer Course, Saugus, MA

Integrated Ballistics Identification System (IBIS) school, Forensic Technologies and ATF, Largo, FL

- 2002 Sturm, Ruger & Co. Armorer School (pistol, revolver and rifle), Newport, NH Beretta In-Field Armorer Training Academy (pistol and shotgun), Stafford Springs, CT FBI Toolmark Examination Workshop, Boston Police Department, Boston, MA ATF Serial Number Restoration School, Rhode Island State Crime Laboratory, Kingston, RI
- 2001 Blood Detection Using Flora-Scene Workshop, NEDIAI, Plymouth, MA Analysis of Problem Latents, Forensic Identification Training Seminars, Thornton, CO Ridgeology Science Workshop, Forensic Identification Training Seminars, Thornton, CO Advanced Palm Print Identification, Massachusetts State Police Academy, New Braintree, MA Courtroom Testimony Techniques, Massachusetts State Police Academy, New Braintree, MA
- 2000 Collection and Preservation of Evidence, NH Police Standards and Training Council, Concord, NH Latent Recovery Techniques, New Hampshire Police Standards and Training Council, Concord, NH
- 1999 Fingerprint Classification, New Hampshire Police Standards and Training Council, Concord, NH
- Alternate Light Source Evidence Detection and Documentation workshop, Connecticut State Identification Association, Groton, CT
 Blood Spatter Documentation, Collection and Interpretation workshop, Connecticut State Identification Association, Groton, CT
- 1995 Crime Scene workshop, NEAFS, Mystic, CT
 Testifying and Reporting Seminar, West Haven Police Department, West Haven, CT

MEETINGS ATTENDED

- 2023 New England Area Firearms Examiners Meeting, Meriden, CT New Hampshire LiveScan Users Group Meeting, Concord, NH IAI International Educational Conference, National Harbor, MD
- 2022 NEDIAI Education & Training Conference, Marlborough, MA
 New England Area Firearms Examiners Meeting, Maynard, MA
 AFTE Training Seminar, Atlanta, GA
 Massachusetts Forensic Science Oversight Board 2022 Virtual Summit, web-based
 Firearm and Toolmarks Policy and Practice Forum, FTCoE and NIJ, web-based
- 2021 AFTE Training Seminar, Miami, FL, web-based IDEMIA Public Security Users' Conference, web-based Midwest Firearms Training Seminar, web-based
- 2020 CSAFE Firearms Workshop, web-based IDEMIA Public Security Users' Conference, web-based Midwest Firearms Training Seminar, web-based Forensics@NIST 2020, web-based Forensic Science Symposium, NFSTC, web-based
- 2019 NEDIAI Education & Training Conference, Portland, ME Northeast Area Firearms Examiner Training Seminar, Waterbury, VT AFTE Training Seminar, Nashville, TN

2018	NEDIAI Education & Training Conference, Newport, RI AFTE Training Seminar, Charleston, WV
2017	NEDIAI Education & Training Conference, Portsmouth, NH New England Area Firearms Examiners Meeting, Albany, NY IAI International Educational Conference, Atlanta, GA
2016	NEDIAI Education & Training Conference, Dedham, MA New England Area Firearms Examiners Meeting, East Hartford, CT AFTE Training Seminar, New Orleans, LA
2015	New England Area Firearms Examiners Meeting, Maynard, MA IAI International Educational Conference, Sacramento, CA
2014	New England Area Firearms Examiners Meeting, East Hartford, CT AFTE Training Seminar, Seattle, WA
2013	NEAFS Annual Meeting, Cromwell, CT New England Area Firearms Examiners Meeting, East Hartford, CT IAI International Educational Conference, Providence, RI
2012	NEDIAI Education & Training Conference, Nashua, NH New England Area Firearms Examiners Meeting, Meriden, CT Impression & Pattern Evidence Symposium 2012, Clearwater, FL
2011	New England Area Firearms Examiners Meeting, Meriden, CT AFTE Training Seminar, Chicago, IL
2010	NEAFS & NEDIAI Joint Training Seminar, Manchester, VT New England Area Firearms Examiners Meeting, Meriden, CT West Virginia University Forensic Science Initiative Summer Program, Boston, MA AFTE Training Seminar, Henderson, NV
2009	NEDIAI Education & Training Conference, Freeport, ME New England Area Firearms Examiners Meeting, Kingston, RI IAI International Educational Conference, Tampa, FL
2008	NEDIAI Education & Training Conference, Portsmouth, NH New England Area Firearms Examiners Meeting, Meriden, CT AFTE Training Seminar, Honolulu, HI
2007	NEDIAI Education & Training Conference, Newport, RI New England Area Firearms Examiners Meeting, Meriden, CT AFTE Training Seminar, San Francisco, CA
2006	New England Area Firearms Examiners Meeting, Meriden, CT IAI International Educational Conference, Boston, MA AFTE Training Seminar, Springfield, MA Human Identification E-Symposium, International Webinar

2005	NEDIAI Education & Training Con New England Area Firearms Exami IAI International Educational Confe Northeast Latent Print Forum, Merid Human Identification E-Symposium	ners Meeting, Meriden, CT crence, Dallas, TX den, CT (co-moderator)	
2004	NEDIAI Education & Training Con New England Area Firearms Exami IAI International Educational Confe Northeast Latent Print Forum, Meric Tri-State AFIS Users Meeting, Confe	ners Meeting, Meriden, CT erence, St. Louis, MO den, CT	
2003	New England Regional NIBIN User New England Trace Examiners Fall NEDIAI Education & Training Con NEAFS Annual Meeting, Pittsfield, New Hampshire LiveScan Users Gr New England Area Firearms Exami Printrak Users Educational Conferent Northeast Latent Print Forum, Meric Tri-State AFIS Users Meeting, Cond National Shooting Sports Foundation New England Regional NIBIN User	Meeting, Concord, NH ference, Manchester, NH MA oup Fall Meeting, Concord, ners Meeting, Meriden, CT nce, Denver, CO den, CT cord, NH n SHOT Show, Orlando, FL	NH
2002	New England Area Firearms Exami New England Regional NIBIN User IAFIS User's Seminar, CJIS/FBI, C NEDIAI AFIS Subcommittee Meeti	rs Group Meeting, Sudbury, olumbus, OH	
2001	NEDIAI Education & Training Con New England Area Firearms Exami Tri-State AFIS Users Meeting, Con	ners Meeting, Meriden, CT	
2000	NEDIAI Education & Training Con Tri-State AFIS Users Meeting, Con New England Commission on Forer	cord, NH	A
1996	Tri-State Identification Seminar, Co Arnold Markle Symposium, Univers		
1995	Arnold Markle Symposium, Univer NEAFS Annual Meeting, Mystic, C		iven, CT
FACT	ORY TOURS		
	a Industries	Newington, NH	2013
Cavage	Arme	Wastfield MA	2012

Wilcox Industries	Newington, NH	2013
Savage Arms	Westfield, MA	2012
Mayhew Steel Products	Shelburne Falls, MA	2006
Beretta U.S.A. Corp.	Accokeek, MD	2004
SIGARMS	Exeter, NH	2004
Mayhew Tools	Shelburne Falls, MA	2002

U.S. Repeating Arms Company	New Haven, CT	2002
Wilson Arms Company	Branford, CT	2002
Charter Arms 2000	Shelton, CT	2002
Electro-Tech (firing pins)	Cheshire, CT	2002
O.F. Mossberg & Sons	North Haven, CT	2002
Marlin Firearms Co.	North Haven, CT	2002
Sturm, Ruger & Co. / Pine Tree Castings	Newport, NH	2002
Colt's Manufacturing Co.	West Hartford, CT	2002
United States Firearms Manufacturing Co.	Hartford, CT	2002
Smith & Wesson	Springfield, MA	2002
Carroll Bullets and Ammunition	Stafford Springs, CT	2002

MANAGEMENT TRAINING

NH Department of Safety, Concord, NH:

•	Belay – Part II: Interviewing Practices and Communication	2021
•	Belay – Part I: Setting Expectations	2021
•	Diversity/Inclusion/Unconscious Bias	2021
•	EAP and Stress Management	2021
•	Respect & Civility in the Workplace – Supervisor/Manager edition	2020
•	LEAN White Belt webinar	2018
•	Civilian Response to Active Shooter Events – DOS Homeland Security	2016
•	Frontline Supervisor Training Program – Part V (Knowledge Management)	2016
•	Frontline Supervisor Training Program – Part IV (Strategic Planning)	2016
•	Frontline Supervisor Training Program – Part III	2015
•	Frontline Supervisor Training Program – Part II	2015
•	Frontline Supervisor Training Program – Part I	2015

NH Bureau of Education & Training, Concord, NH:

•	Foundations of State Supervision	2019
•	How to Leverage Yourself to Communicate Better	2015
•	Conflict Resolution	2015
•	How to Communicate Effectively in the Midst of Tension	2015

Miscellaneous:

•	Using Risk Management to Optimize Forensic Laboratory Operations webinar	2022
	FTCoE and NIJ	
•	Intelligent Influence: The Key Ingredients to Leadership and Professional Success	2022
	online course, Critical Victories	
•	Forensic Grants 101 - Award Management webinar, FTCoE and BJA	2022
•	Forensic Grants 101 - Grant Application and Award Acceptance webinar	2022
	FTCoE and Bureau of Justice Assistance	
•	Forensic Grants 101 - Forensic Grant Opportunities webinar, FTCoE and BJA	2022
•	Developing and Unbiased Culture in your Laboratory webinar	2021

Forensic Technology Center of Excellence and ASCLD

• Corrective Actions, Nonconformities, & Root Cause Analysis webinar

Qualtrax and A2LA

2021

•	Leadership: Lessons Learned Throughout a Career webinar Justice Clearinghouse	2021
•	Best Practices for Conducting an Internal Audit webinar Qualtrax and A2LA	2021
•	Emerging Issues: Remote Work in the Forensic Lab webinar Forensic Technology Center of Excellence and ASCLD	2021
•	Emerging Issues: Remote Testimony webinar Forensic Technology Center of Excellence and ASCLD	2021
•	Emerging Issues: Wellness and Operation webinar Forensic Technology Center of Excellence and ASCLD	2021
•	Leading Through a Pandemic - The Impact of COVID-19 on the Public Sector Workforce webinar, CPS HR Consulting	2020
•	Assessing Organizational Needs and Onboarding for Scientists webinar, Midwestern Association of Forensic Scientists	2020
•	Gender in Leadership webinar, Midwestern Assoc. of Forensic Scientists	2020
•	Corrective Action Process and Cause Analysis for Forensic Service Providers online course, ANSI National Accreditation Board	2020
•	Succession Planning: 5 Basic Steps webinar, CPS HR Consulting	2018
•	Forensic Leadership Series online course, FTCoE and ASCLD	2018
•	Quality and Technical Manager Level Overview of ASCDL ISO/IEC 17025:2017 webinar, American Association for Laboratory Accreditation	2018
•	Using Measurement to Hire Pattern Evidence Examiners webinar, National Academy of Sciences	2016
•	Tribal Judo TM: Accountability Beats Chaos workshop, IAI	2015
•	ISO/IEC 17025: Non-Conformances and Strategies to Prevent Recurrence workshop, IAI	2015
•	ASCLD/LAB-International (ISO) Accreditation Preparation course, ASCLD/LAB, Burlington, MA	2011
•	Transition to Leadership and Bridging Generational Gaps workshop West Virginia University Forensic Science Initiative, Boston, MA	2010