

**CURRICULUM VITAE**

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**MATTHEW NOEDEL, FORENSIC SCIENTIST****EDUCATION****University of Montana, Missoula, MT 1985**

Bachelor of Science - Microbiology  
Bachelor of Science - Medical Technology  
Minor in Chemistry

**California State University, Sacramento, CA 1987**

Bachelor of Science - Forensic Science  
*30 Quarter units of graduate credit in Criminal Justice with Forensic Emphasis*

**PROFESSIONAL AFFILIATIONS**

American Academy of Forensic Scientists (AAFS)  
Regular Member

## Association of Crime Scene Reconstruction (ACSR)

Regular Member - February 2000 - present  
Board of Directors - February 2005 - 2015  
Program Chair - Annual Meeting 2007  
Treasurer - February 2007 - February 2012  
President - February 2013 - February 2014  
Shooting Reconstruction Standardization Committee - 2012 - 2014  
Chairman of the Board - February 2014 – February 2015  
Recipient – Larry Olson Service Award 2015

## Association of Firearm and Tool Mark Examiners (AFTE)

Distinguished Member - 2000 - present  
AFTE Journal Editor - 2002 - 2007  
Member of the Year - 2009  
Nominating Committee - 2009  
Assistant Conference Chair - 2010  
Conference Workshop Program Coordinator - 2014  
Conference Host Committee - 2014

## International Association of Bloodstain Pattern Analysts (IABPA)

Regular Member  
Ethics Committee - 2009 - present

## Northwest Association of Forensic Scientists (NWAFS)

Regular Member  
Member at Large - 2005  
Program Chair Annual Conference - 2000, 2011  
Vice President - 2006  
President - 2007, 2010, 2011  
Life Member - 2016

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**CERTIFICATIONS**

*Certification in Firearms, Tool Marks, and Gunshot Residue Examination*  
September 2002; Association of Firearm and Tool Mark Examiners (AFTE)

*Certification in Crime Scene Reconstruction*  
January 2012; International Association for identification (IAI)

**EMPLOYMENT**

**Nov. 7, 2005 – Present**                      **Noedel Scientific LLC**

**Forensic Consultant**                      *Forensic Consultation, Reconstruction, Training,  
Testimony, Analysis*

Noedel Scientific LLC provides expert forensic analysis in a variety of areas including crime scene reconstruction, firearms examination, bloodstain pattern analysis, and case review. Examinations conducted are prepared with an emphasis on scientific detail for future court presentation.

**Apr. 9, 1990 - Nov. 4, 2005**                      **Washington State Patrol Crime Laboratory - Tacoma**

**Forensic Scientist III**                      Crime Scene Response, Firearm and Tool Mark Exam,  
Bloodstain Pattern Analysis, Chemistry, Trace Evidence

The Washington State Patrol (WSP) Crime Laboratory provides forensic examinations for all of the police, sheriff, and prosecuting attorneys in the state of Washington. Of the services offered by the Tacoma Crime Lab, I worked in Chemistry, Drug Analysis, Fire Debris, Trace Evidence, Crime Scene Response, Bloodstain Pattern Interpretation, Firearms and Tool Mark Analysis. For the WSP crime scene response team, I was a primary responder, a crime scene consultant and trainer/instructor. I received the WSP Forensic Scientist of the Year award in 2000 and participated on the WSP Firearms Review Committee.

**April 1987 - April 1990**                      **Chemwest/CompuChem Laboratories**

**Toxicologist**                                      Forensic Toxicology

I was responsible for the forensic examination of biological samples for the presence of drugs, alcohol, poisons and toxins. Both screening and confirmation for these chemicals was conducted in this high volume laboratory setting.

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**SPECIALIZED TRAINING RECEIVED****Tours**

- Nosler Bullet Factory, Bend OR
- CCI/Speer Ammunition Factory, Lewiston ID
- Arnold Arms Specialty Rifle Manufacturer, Arlington WA
- Olympic Arms Pistol and Rifle Manufacturing, Olympia WA
- Alchemy Arms Pistol Manufacturing, Auburn WA
- Ruger Firearms & Investment Casting, CT
- Marlin Rifle Factory
- Savage Arms Factory
- Wilson Arms Barrel Making Facility
- Barnes Bullet Manufacturing
- North American Arms Manufacturing
- Schneider Barrel Manufacturer, Payson AZ
- Ruger Firearms, Prescott AZ
- LAR Firearms, Jordon UT

**Factory Authorized Armory Training**

Colt	Smith & Wesson	Ruger
Sig Sauer	Glock	Remington
Beretta	Heckler & Koch (MP-5)	Hi-Point

**Workshops, Seminars and Courses**

- Beeman Air Rifle Workshop
- "Firearms Update – Ruger" 40-hr course; Sacramento Public Safety Center; Sacramento, CA; Completed November 3, 1995
- "Law Enforcement Armorer School - Basic – 40hrs"; Lassen College; Susanville, CA; Completed May 31, 1996
- "Beretta Armorer Training Program" by Beretta USA Corp; July 15-17, 1996
- "Smith and Wesson Armorers School - Pistols" by Smith and Wesson Academy; Salt Lake City, UT; April 15-19, 1996
- ATF Arson and Accelerant Detection
- California Department of Justice Basic Forensic Hair Examination
- Restek Capillary Chromatography Seminar
- Tire Footprint Workshop
- McCrone's Advanced Microscopy
- Crime Scene Photography
- Hewlett Packard Gas Chromatography Inlet Systems
- Infra-red Technology--Bio Rad
- Advanced Crime Scene Response
- Crime Scene Response In Service Training
- Exterior Ballistics and Reloading
- Crime Scene Response-Criminal Justice Training Center
- Characterization of Projectile Performance-Yuma proving Grounds
- ATF Serial Number Restoration

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**SPECIALIZED TRAINING RECEIVED CONTINUED****Workshops, Seminars and Courses continued**

- “Basic Bloodstain Pattern Analysis” 40-hr course by Tom Bevel; Seattle, WA; May 17-21, 1999
- “FBI Gunpowder and Primer Residues School” 40-hr course by Dillon/Rosati; Monroe, WA; August 11-15, 1997
- “IBIS Operator Certification Training” Forensic Technology; Completed August 20, 1997
- “Intro to Drugfire” FBI Drugfire course by Mnemonic Systems; August 25-26, 1997
- “Intro to Digital Imaging” Course; NWAFS Meeting; Portland, OR; May 6, 1998
- “Firearms Presented by ATF” Course; NWAFS Meeting; Portland, OR; May 5, 1998
- “Intro to APMS ” FBI Drugfire course by Mnemonic Systems Inc; June 24, 1998
- “Smith and Wesson Armorers School - Pistols” by Smith and Wesson Academy; June 21-24, 1999
- “Identification of Human and Skeletal Remains” 24-hr course by Snohomish County Medical Examiner’s Office; Completed March 15, 2000
- “Evidence Evaluation and Reconstruction at Shooting Scenes” Workshop; NWAFS Meeting; Sacramento, CA; May 5, 2000
- “Introduction to Crime Scenes: Firearms Evidence” Workshop; NWAFS Meeting; Sacramento, CA; May 16, 2000
- “Introduction to Crime Scenes: Photos and Sketching” Workshop; NWAFS Meeting; Sacramento, CA; May 16, 2000
- “Introduction to Crime Scene Processing and Reconstruction” 8-hr course; NWAFS Meeting; Sacramento, CA; May 15, 2000
- “Investigation of Occult Crime Scenes” by Lt. Randy Johnson; April 18, 2001
- “Explosion and Bombing Crime Scenes” 12-hr course by James Crippen; NWAFS/Utah Forensic Science Association (UFSA) Joint Meeting; April 19, 2001
- “Advanced Bloodstain Pattern Analysis Workshop” 40-hr course by Toby Wolson, Metropolitan Police Institute; Miami, FL; May 7-11, 2001
- “Washington State Patrol Firearms Instructor Course” June 2001
- “Exterior Ballistics and Long Range Trajectory Workshop” July 2001
- “Crime Scene Reconstruction” 16-hr course by Tom Bevel; NWAFS Meeting; Redmond, OR; September 24-25, 2001
- “Marshall’s Reagent and GSR Workshop” April 22, 2002
- “Examination of the Taser’s Non Lethal Weapon Character” April 22, 2002
- “Consecutive Manufactured Knife Blade Study” April 22, 2002
- “Black Powder and Black Powder Substitute Analysis” April 23, 2002
- “Ricochet Workshop” by Lucian Haag, NWAFS/California Association for Criminalists (CAC) Joint meeting; Reno, NV; April 7, 2003
- “Colt 1911 Style Pistol Armorer Course” by Vancouver PD Rob Caunt; CAC/NWAFS Joint Meeting; Reno, NV; April 8, 2003
- “Forensic Identification Techniques” 16-hr course; Pacific Northwest Division (PWN)-IAI Conference; Tacoma, WA; May 7-9, 2003
- “Crime Zone Software Tools” NWAFS Meeting; Portland, OR; October 14, 2003
- “Utilization of Crime Zone 7.0” ACSR Conference; Oklahoma City, OK; October 24, 2003

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**SPECIALIZED TRAINING RECEIVED CONTINUED****Workshops, Seminars and Courses continued**

- “Adobe Photoshop Techniques” ACSR Conference; Oklahoma City, OK; October 24, 2003
- “National Integrated Ballistic Information Network (NIBIN) Training” Bureau of Alcohol, Tobacco and Firearms and Forensic Technology, Inc. Completed February 7, 2003
- “Fluorescein Techniques” NWAFFS Meeting; Missoula, MT; April 19-21, 2004
- “Basic Bloodstain Pattern Analysis” 40-hr course by Tom Bevel; CJTC Regional Academy; Burien, WA; February 22-26, 2004
- “Putting Power in your Point” ACSR Conference; San Jose, CA; Feb 11, 2005
- “LED/UV Macro Photography” ACSR Conference; San Jose, CA; Feb 11, 2005
- “Winning Extreme Encounters from Street to Court (Investigation of Lethal Force Encounters)” 8-hr course by Dr. Lewinski, Force Science Research Center, Mankato, MN; CJTC Burien, WA; June 10, 2005
- “Investigation of Firearms Misadventures” AFTE Conference; Indianapolis, IN; June 2005
- “Innovative Forensic Techniques” Training from casting material ‘Mikrosil’ inventor Kjell Carlson; Oregon State Police Crime Lab; August 31, 2005
- “Math, Physics and Computers in Advanced Bloodstain Pattern Analysis” Alberta Justice Staff College; Edmonton, Alberta; October 24-28, 2005
- “Beretta 90 Series Pistol Armorer Seminar” AFTE Conference; Springfield, MA; June 28, 2006
- “Life of the Body after Death” Workshop by Elayne Pope; SWAFFS/NWAFFS Joint Conference; Colorado Springs, CO; November 2006
- “Eagle EDXRF School” Workshop by EDAX; SWAFFS/NWAFFS Joint Conference; Colorado Springs, CO; November 2006
- “Wound Ballistics Workshop” 16-hr Course by Dr. Patrick Besant - Matthews; AFTE Conference; San Francisco, CA; May 27-28, 2007
- “Intro to Saw and Toolmarks on Bone: A Class Characteristics Approach” Workshop by Dr. Steven Symes; AFTE Conference; San Francisco, CA; May 29, 2007
- “Basics of Firearm Mechanisms” Workshop; AFTE Conference; Honolulu, HA; May 23, 2008
- “Firearm Sound Suppression” 16-hr Course; NWAFFS Conference; Boise, ID; November 2008
- “Is it a Bullet Hole?” Workshop; AFTE Conference; Miami, FL; May 31, 2009
- “Conversion Course” Workshop; AFTE Conference; Miami, FL; June 3, 2009
- “BSPA Taxonomy” 2-hr Workshop by Michael Maloney and Ross Gardner; IABPA Conference; Portland, OR; October 6, 2009
- “Courtroom Testimony Techniques” 4-hr Workshop by Jeff Scozzafava and Todd Thorne; IABPA Conference; Portland, OR; October 7, 2009
- “Forensic Ethics” by Peter Barnett, Carolyn Gannett; ACSR Conference; San Diego, CA; February 2010
- “The Basics of Firearms Mechanisms” by Rob Caunt, Vancouver Police Crime Laboratory, NWAFFS Meeting; Portland, OR; September 29, 2010

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**SPECIALIZED TRAINING RECEIVED CONTINUED****Workshops, Seminars and Courses continued**

- “Photogrammetry in Post Scene Analysis and Reconstruction Workshop” 3-hr course; ACSR Conference; Jacksonville, FL; February 9, 2011
- “Shooting Incident Reconstruction: 3D Laser Scanning, Uncertainty, and Experimental Setup” 1-day Workshop; AFTE Conference; Buffalo, NY; June 24, 2012
- “Alternate Light Source Utilization” 3.5-hr course; ACSR Conference; Atlanta, GA; February 6, 2013
- “Human Factors in CSR” 3.5-hr course; ACSR Conference; Atlanta, GA; February 6, 2013
- “Wound Ballistics for Firearm Examiners” 8-hr course; AFTE Conference; Albuquerque, NM; June 28, 2013
- “Making Black Powder” 1-day workshop; NWAFS Conference; Vancouver, WA; September 17, 2013
- “Bloodstain Documentation and Collection Methods” 1 1/3-hr Forensic Technology Center of Excellence/RTI International online course; May 19, 2014
- “Shooting Reconstruction: The 4 Elements of Trajectory” 1 ½-hr forensicED online course; RTI International; May 22, 2014
- “The Fluid Dynamics of Bloodstain Pattern Formation” Advanced 40-hr course by Dr. Mark Jermy and Dr. Michael Taylor of New Zealand’s Institute of Environmental Science and Research (ESR); Seattle, WA; June 16-20, 2014
- “3D Laser Scanning for Forensic Scene Mapping” 1-day seminar by PPI Group; Seattle, WA; November 18, 2014
- “False-Positive & False-Negative Error Rates in Cartridges” 1-hr course; Forensic Technology Center of Excellence/RTI Online; March 5, 2015
- “Sam Houston State University Body Farm Tour” 1-day seminar, AFTE Conference; Dallas, TX; May 2015
- “Photographing the Blood Event Scene” 4-hr course; IAI Conference; Sacramento, CA; August 2015
- “Daytime Laser Photography” 2-hr course; IAI Conference; Sacramento, CA; August 2015
- “Buck Knives Factory Tour” 45-min tour; NWAFS Conference; Spokane, WA; September 15, 2015
- “CCI/Speer Tour” 3-hr workshop; NWAFS Conference; Spokane, WA; September 15, 2015
- “High Definition Survey (3-D Laser Scanning) of Crime Scenes: Lessons Learned and What’s Next” 4-hr course; NWAFS Conference; Spokane, WA; Sept. 14, 2015
- “Impact Pattern Analysis & Visualization with Hemospat” ½-day workshop; IABPA Conference; Fort Worth, TX; September 2015
- “Limitations Associated with Bloodstain Pattern Examinations on Fabrics” 3-hr course; ACSR Conference; Clark, NJ; February 9, 2016
- “Shooting Scenes – Staged and Not Staged – Find the Red Flag Indicators” ½ day course; AFTE Conference; New Orleans, LA; June 2, 2016
- “Error and Uncertainty in Bloodstain Pattern Analysis” 1½-hr; RTI/NIJ Forensic Technology Center of Excellence; Online; Feb 28, 2017

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**SPECIALIZED TRAINING RECEIVED CONTINUED****Workshops, Seminars and Courses continued**

- “Leeds 3D Scanning of Deformed Bullets and Cartridge Cases” 2-hr course; AFTE Conference; Denver, CO; May 17, 2017
- “Bullet Trajectory Documentation with 3D Technologies” 1-day course; AFTE Conference; Denver, CO; May 19, 2017
- “Forensic Shooting Incident Reconstruction” 40-hr course; Forensic Science Consultants; Fort Collins, CO; July 24-28, 2017
- “A Close Look at 3D Microscopy for Firearms Identification” 1¼-hr course; NIJ/RTI Forensic Technology Center of Excellence; Online; January 10, 2018
- “Glock Pistols Armorer Course” 1-day course; AFTE Conference; Charleston, WV; June 5, 2018
- “General Session” 1-day session attendance; NWAFS Conference; Boise, ID; September 20, 2018
- “General Session” ½-day session attendance; NWAFS Conference; Boise, ID; September 21, 2018
- “Bloodstain Reconstruction” ½-day workshop; IABPA Conference; Ottawa, Ontario; October 3, 2018
- “A Proper Bloodstain Pattern Analysis: From Analysis to Courtroom” ½-day workshop; IABPA Conference; Ottawa, Ontario; October 3, 2018

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**SPECIALIZED TRAINING RECEIVED CONTINUED****Conferences**

- AAFS Annual Meeting; Las Vegas, NV; February 1988
- California Association of Toxicologists (CAT) Meeting; San Diego, CA; Fall 1989
- NWAFS Meeting; Portland, OR; October 1992
- NWAFS Meeting; Spokane, WA; April 1996
- NWAFS Meeting; Missoula, MT; April 1997
- AFTE Annual Conference; Annapolis, MD; July 1997
- NWAFS Meeting; Las Vegas, NV; Fall 1997
- NWAFS Meeting; Portland, OR; May 1998
- NWAFS Meeting; Anchorage, AK; April 1999
- ACSR Annual Conference; Kansas City, MO; September 1999
- NWAFS Meeting; Sacramento, CA; May 2000
- AFTE Annual Conference; St. Louis, MO; June 2000
- NWAFS Meeting; Seattle, WA; Fall 2000
- NWAFS/Utah Forensic Science Association (UFSA) Joint Meeting; Spring 2001
- AFTE Annual Conference; Newport Beach, CA; July 2001
- NWAFS Meeting; Redmond, OR; September 2001
- NWAFS Meeting; Spokane, WA; April 2002
- NWAFS/California Assoc. for Criminalists (CAC) Meeting; Reno, NV; April 2003
- IAI Conference; Tacoma, WA; May 2003
- AFTE Annual Conference; Philadelphia, PA; May 2003
- NWAFS Meeting; Portland, OR; October 2003
- ACSR Annual Conference; Oklahoma City, OK; October 2003
- NWAFS Meeting; Missoula, MT; April 2004
- IABPA Annual Conference; Tucson AZ; October 2004
- IAI/NWAFS Joint Conference; Spokane, WA; May 2005
- AFTE Annual Conference; Indianapolis, IN; June 2005
- ACSR Annual Conference; San Jose, CA; February 2005
- ACSR Annual Conference; Albuquerque, NM; February 2006
- Scientific Working Group for Bloodstain Pattern Analysis (SWGSTAIN) Spring Meeting; FBI Academy; Quantico, VA; April 3-7, 2006
- AFTE Annual Conference; Springfield, MA; June 2006
- NWAFS/Southwest Association of Forensic Scientists (SWAFS) Joint Conference; Colorado Springs, CO; November 2006
- ACSR Annual Conference; Tacoma, WA; January 2007
- AFTE Annual Conference; San Francisco, CA; May 2007
- IABPA Conference; San Antonio, TX; October 2007
- IAI/NWAFS Joint Conference; Salt Lake, UT; November 2007
- ACSR Annual Conference; Tulsa, OK; February 2008
- AFTE Annual Conference; Honolulu, HA; May 2008
- NWAFS Annual Conference; Boise, ID; November 2008
- ACSR Annual Conference; Denver, CO; February 2009
- AFTE Annual Conference; Miami, FL; May 2009
- NWAFS Meeting; Ft. Collins, CO; September 2009
- IABPA Conference; Portland, OR; October 2009



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**SPECIALIZED TRAINING RECEIVED CONTINUED****Conferences continued**

- ACSR Annual Conference; San Diego, CA; February 2010
- AFTE Annual Conference; Henderson, NV; May 2010
- NWAFS Meeting; Portland OR; September 2010
- ACSR Annual Conference; Jacksonville, FL; February 2011
- NWAFS Meeting; Tacoma, WA; September 2011
- ACSR Annual Conference; Monterey, CA; February 2012
- AFTE Annual Conference; Buffalo, NY; June 2012
- NWAFS Meeting; Missoula, MT; September 2012
- ACSR Annual Conference; Atlanta, GA; February, 2013
- AFTE Annual Conference; Albuquerque, NM; June 2013
- NWAFS Meeting; Vancouver, WA; September 2013
- ACSR Annual Conference; Montgomery, TX; February 2014
- AFTE Annual Conference; Seattle, WA; May 2014
- ACSR Annual Conference; Oklahoma City, OK; February 2015
- AFTE Annual Conference, Dallas, TX; May 2015
- IAI Conference; Sacramento, CA; August 2015
- NWAFS Conference; Spokane, WA; September 2015
- IABPA Conference; Fort Worth, TX; September 2015
- ACSR Conference; Clark, NJ; February 2016
- AFTE Conference; New Orleans, LA; May/June 2016
- NWAFS Conference; Boise, ID; September 2016
- ACSR Conference; Black Hawk, CO; February 2017
- AFTE Conference; Denver, CO; May 2017
- NWAFS Conference; Portland, OR; September 2017
- IABPA Conference; Redondo, CA; September 2017
- Impression, Pattern and Trace Evidence Symposium 2018; Arlington, VA January 2018
- ACSR Conference; Tacoma, WA; March 2018
- AFTE Conference; Charleston, WV; May/June 2018
- NWAFS Conference; Boise, ID; September 2018
- IABPA Conference; Ottawa, Ontario; Oct 2018

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**PUBLICATIONS/PRESENTATIONS**

Technical notes published in Microgram-An International U.S. Department of Justice, Drug Enforcement Administration publication dedicated to reporting trends and topics related to current controlled substance analysis.

"Separation of Isomers of (d/l) Amphetamine and (d/l) Methamphetamine from Urine by GC and GC/MS" Presented at the 29th Annual AAFS Meeting; Las Vegas, NV; February 1988

"Solid Phase Extraction of Morphine and Codeine" Presented at the Fall California Association of Toxicologists (CAT) Meeting; San Diego, CA; 1989

"Variations on Charcoal Strip Exposure for Absorption/Elution Recovery of Flammable Liquids" Presented at the NWAFFS Meeting; Portland, OR; October 1992

"Understanding Your Mass Spectrometer" Published in 'Crime Scene—A Quarterly Newsletter of the NWAFFS'; Volume 21 Number 3 p. 9, 1995

"Uses and Implementation of the Caswell Indoor Firing Range for Forensic Purposes – Firearms Round Table" Presented at the NWAFFS Meeting; Spokane, WA; April 1996

"Drop Testing a .45 Auto Colt 1911" Published in 'AFTE Journal'; Volume 29 Number 2 p. 183, Spring 1997

"Persistence of Gunshot Residue on Clothing" Presented at the NWAFFS Meeting; Missoula, MT; April 1997

"Velocity Drop During the Depletion of CO2 Cartridges in a Pellet Pistol" Presented at the NWAFFS Meeting; Las Vegas, NV; Fall 1997

"Velocity Drop During the Depletion of CO2 Cartridges in a Pellet Pistol" Published in 'AFTE Journal'; Volume 30 Number 3 p. 435, Summer 1998

"Slam Firing Calico M-100/M-100P Firearms" Published in 'AFTE Journal'; Volume 30 Number 3 p. 527, Summer 1998

"Lead Patterns Observed in Ricochets" Presented at the NWAFFS Meeting; Anchorage, AK; April 1999

"An Unusual Jennings By Bryco Model 59" Published in 'AFTE Journal'; Volume 31 Number 2 p. 147, Summer 1999

"Tap Rack No Bang" Presented at the NWAFFS Meeting; Sacramento, CA; May 2000

"Examination of Unusual .22 Caliber Ammunition" Presented at the AFTE Annual Conference; St. Louis, MO; June 2000

"Examination of 12 Gauge Flare Guns" Presented at the AFTE Annual Conference; Newport Beach, CA; July 11, 2001

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**PUBLICATIONS/PRESENTATIONS CONTINUED**

"Detection of Gunshot Residues on Secondary Surfaces" Presented at the NWAFFS Meeting; Spokane, WA; April 25, 2002

"An Interesting Shotgun Pattern Reconstruction" Presented at the ACSR Annual Conference (Last Piece Society); Oklahoma City, OK; October 23, 2003

"Tool Marks in Bone—Evaluation of a "Sawzall" Presented at the NWAFFS Meeting; Missoula, MT; April, 2004

"Evaluation of Non-Replenishing Blood Drip Trails" Presented at the IABPA Annual Conference; Tucson AZ; October 2004 (Second presentation at the request of the Scientific Working Group for Bloodstain Pattern Analysis; April 4, 2005)

"Shabazz v Shabazz-An Interesting Shooting Reconstruction" Presented at the ACSR Annual Conference (Last Piece Society); Albuquerque, NM; February, 2006

"The Influence of Intermediate Objects Positioned Close to the Muzzle of a Firearm" Presented at the AFTE Annual Conference; Springfield, MA; June, 2006

"Microscopic Examination of Hair Damaged by the Passage of a Fired Bullet" Co - presented at the ACSR Annual Conference; Tacoma, WA; January 22, 2007

"Using Adobe Photoshop Tools for Bloodstain Documentation" Presented at the IABPA Conference; San Antonio, Texas; October 4, 2007

"Exploring the CSI Effect" Presented for the "Inn at the Court" (a training conference for a collection of judges and attorneys); Tacoma, WA; February 9, 2009

"Life of a Bullet" Presented at the Seventh Annual Violent Crimes Investigators' Regional Training Conference; Seattle WA; November 5, 2009

"Practical Crime Scene Analysis and Reconstruction" Gardner, RM; Bevel, Tom. Contributing Author – Chapter 7 – Shooting Scene Processing and Reconstruction CRC Press, Published July 2009

"Shooting Scenes - What You Don't Know Can Hurt You" A Continuing Legal Education training session at the Snohomish County Public Defenders Association; Everett, WA; May 11, 2010

"Exploring the Limit of Gunpowder Particle Quantity for Distance Determination" Presented at the Technical Session of the NWAFFS Meeting; Portland OR; October 1, 2010

"Fired Bullet Impact Site Evaluation: Tumbling Bullet versus Angled Shot" Presentation outlining how to evaluate bullet impact sites in context to a crime scene processing and reconstruction. NWAFFS Meeting; Tacoma, WA; September 2011

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**PUBLICATIONS/PRESENTATIONS CONTINUED**

“Examination of Bullet Defects from Test Fires Through Fabric” Noedel, Matthew; Cwiklik, Chesterene; Haakenstad; Lisa. Crime Scene, Volume 38 (Issue 2): pages 40-45 Spring, 2012

“Exploring the Limit of Gunpowder Particle Quantity for Distance Determination” presented at the AFTE Annual Conference; Buffalo, NY; June 26, 2012

Keynote Speaker: “Matthew Noedel Presents: Tales from the Private Side of Forensic Firearms Examination and Crime Scene Reconstruction” This keynote presentation discussed various experiences in working as a private forensic examiner in the current climate of forensic analysis. NWAFS Meeting; Vancouver, WA; September 18, 2013

“Review of the NWAFS Research Workshop: An Examination of Bullet Impacts to Concrete Surfaces” NWAFS Conference; Vancouver, WA; September 19, 2013

Panel Member: “CSR Officer Involved Shooting Discussion” ACSR Conference; Clark, NJ; February 11, 2016

“Evolution of Crime Scene Reconstruction” 23<sup>rd</sup> Annual Criminal Justice Institute Seminar; Burien, WA; September 23, 2016

“Special Research Workshop: Stability of Fired Cartridge Case Locations in Shooting Scenes” Presentation on results of the special research workshop conducted. NWAFS Conference; Portland, OR; September 21, 2017

“Anatomy of a Firearms Examination” Presentation at Benton County Public Defenders CLE Seminar (Skype); April 20, 2018

“Special Research Workshop: Extraction Failures from Poorly Supported Semiautomatic Pistols” Presentation on results of the special research workshop conducted. NWAFS Conference; Boise, ID; September 21, 2018

**INSTRUCTOR****Training Conducted for Professional Affiliations and Employers**

“Full Auto Armory and Workshop” NWAFS Meeting; Seattle, WA; Fall 2000

“Forensic Black Powder Workshop” NWAFS Meeting; Spokane, WA; April 23, 2002

“Firearms in the Forensic Environment” IAI Conference; Tacoma, WA; May 7, 2003

“Semiautomatic Firearm Ejection Patterns” A 1-day workshop involving ejection patterns; NWAFS Meeting; Portland, OR; October 15, 2003

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**INSTRUCTOR CONTINUED****Training Conducted for Professional Affiliations and Employers continued**

"Special Topics for Crime Scene Examination" Joint IAI/NWAFS Conference; Spokane, WA; May 18, 2005

"Trajectory Documentation Using a 360 Degree Scale" A ½ course on documenting trajectories; WSP Crime Lab Crime Scene Response Team; Tacoma, WA; July 27, 2005

"Understanding and Exploring Gunshot Residue" Two ½ day sessions involving lecture and practical examinations pertaining to GSR; ACSR Annual Conference; Tacoma, WA; January 23, 2007

"Using Lasers to Document Bullet Trajectories" Two ½ day sessions at the ACSR Annual Conference; Denver, CO; February 2009

"Preparing Reports for Shooting Crime Scenes" Two ½ day sessions at the ACSR Annual Conference; Denver, CO; February 2009

"Examination of Vehicles for Shooting Reconstruction" A 1-day workshop; NWAFS Meeting; Ft. Collins, CO; September 22, 2009

"Semiautomatic Firearm Ejection Patterns" Two ½ day sessions at the ACSR Annual Conference; San Diego, CA; February 11, 2010

"Forensic Aspects of Airsoft Replica Arms" A 1-day workshop covering the design, construction, forensic examination and importance of airsoft firearms in forensic applications. NWAFS Meeting; Portland, OR; September 29, 2010

"Omni-Car: Crime Scene Processing" Co-instructor - A 1-day workshop involving techniques to process automobiles for trajectory, bloodstains, bullet documentation and recovery, shoe print, DNA considerations and overall vehicle processing. NWAFS Meeting; Tacoma, WA; September 2011

"Special Research Workshop #2: Characterizing Bullet Damage in Clothing" Mentor - A 1-day research workshop involving the performance of various caliber and design of fired bullets through a variety of clothing items. NWAFS Meeting; Tacoma, WA; Sept 2011

"Techniques for Successful Presentations with PowerPoint™" Co-instructor for a workshop involving techniques to organize, present and enhance digital material for presentation in court or at professional settings. NWAFS Meeting; Tacoma, WA; September 2011

"Trajectory Documentation" A 3-day class involving the proper evaluation, documentation and processing of fired bullet paths and determining horizontal and vertical trajectory values in simulated building material and vehicles. Washoe County Sheriff Office FIS Section; Reno NV; October 2011

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**INSTRUCTOR CONTINUED****Training Conducted for Professional Affiliations and Employers continued**

“Terminal Ballistics: Bullet Performance in Tissue Simulant” A 4-hour course involving the theory and practical performance of various fired bullets. Lecture and live fire demonstrations of hollow-point bullet performance fired directly into ballistic gelatin, animal (beef) ribs, and through intermediate targets. ACSR Annual Conference; Monterey, CA; February, 2012

“Temperature of Ejected Cartridge Cases” Mentor - A 1-day research workshop involving attempts to evaluate the absolute temperature of cartridge cases at the moment they are ejected from a semiautomatic firearm. NWAFS Meeting; Missoula, MT; Sept. 23, 2012

“Long Range Ballistics” A ½ day workshop involving the theory of long range bullet flight, using various computer programs to determine long range flight properties of fired bullets, considering drag and ballistic coefficient for projectiles. NWAFS Meeting; Missoula, MT; September 25, 2012

“Ricochet and Impact to Concrete Surfaces” Mentor - A 1-day research workshop on the performance of projectiles and the resultant properties of bullets fired into painted concrete surfaces. NWAFS Meeting; Vancouver, WA; September 16, 2013

“Shooting Incident Reconstruction – Shotgun Pattern Reconstruction” A ½ day course involving shotgun pattern reconstruction. ACSR Meeting; Montgomery, TX; February 12, 2014

“Practical Considerations of Ammunition Reloading” A 1-day course including a lecture on reloading and hands on reloading and shooting reloaded cartridges. Cartridges reloaded during the course were test fired for velocity and the data collected and compared to factory loaded cartridges. AFTE Conference; Seattle, WA; May 11, 2014

“Make and Shoot Black Powder” Co-Instructor - A 1-day workshop covering the basics of black powder production and manufacture. Very small batches of black powder were manufactured and then loaded and test fired at a firing range. A chronograph measured the reproducibility and characteristics of the black powder loads generated. AFTE Conference; Seattle, WA; May 16, 2014

“Projectile Deflection Caused by Intermediate Targets” Co-Instructor - A 4-hour course examining the influence of intermediate barriers to bullet paths. ACSR Annual Conference; Oklahoma City; OK February 2015

“Projectile Deflection Caused by Intermediate Targets” Co-Instructor - A 4-hour course examining the influence of intermediate barriers to bullet paths. AFTE Annual Conference; Dallas, TX; May 2015

“Cook County Public Defender’s Office Ballistic Training” – A 1-day course covering firearm related topics of interest of the Public Defender’s Office. Cook County, IL; August 2015

**CURRICULUM VITAE - MATTHEW NOEDEL**

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**INSTRUCTOR CONTINUED****Training Conducted for Professional Affiliations and Employers continued**

“Ammunition, Cartridges and Components” Co-Instructor - A ½ day course including examination, disassembly and evaluation of firearm components and exotic contemporary ammunition. ACSR Conference; Clark, NJ; February 11, 2016

“Fired Bullet Performance in Wood” Co-Instructor – A 1-day course examining bullet performance after impacting various wooden structures. AFTE Conference; New Orleans, LA; May 29, 2016

“Documenting Bullet Paths” Instructor – ½ day course demonstrating proper techniques in bullet path determination. NWAFFS Conference; Boise, ID; September 26, 2016

“Special Research Topic: Trajectory Measurements” – Assisted with 1-day course comparing traditional hand measurements for trajectories against 3D laser scanning. NWAFFS Conference; Boise, ID; September 27, 2016

“Bullet Path Analysis Without Rods” A ½ day course involving bullet path analysis without rods (two sessions). ACSR Conference; Black Hawk, CO; February 2, 2017

“Forensic Examination of Airsoft Replica Arms” Co-Instructor; A ½ day course reviewing the history, use, development and design features of Airsoft style guns. AFTE Conference; Denver, CO; May 16, 2017

“Special Research Workshop: Stability of Fired Cartridge Case Locations in Shooting Scenes” Mentor - A 1-day research workshop to examine how stable a fired cartridge case is in an environment once it has landed. NWAFFS Meeting; Portland, OR; September 2017

“Bullet Holes in Clothing: Evaluation and Documentation” Instructor; A ½ day course demonstrating how to locate, identify and document the passage of a fired bullet through clothing and other common articles. ACSR Conference; Tacoma, WA; March 2018

“Understanding the Math of Bullet Path Analysis” Instructor; A ½ day course focusing on trigonometric formulas to document and solve horizontal/vertical aspects of bullet path analysis. AFTE Conference; Charleston, WA; June 3, 2018

“Special Research Workshop: Extraction Failures from Poorly Supported Semiautomatic Pistols” Mentor – A 1-day research workshop to explore methods to initiate semiautomatic jams and qualify when and how incomplete cycling occurs. NWAFFS Conference; Boise, ID; September 18, 2018

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**INSTRUCTOR CONTINUED****Shooting Scene Reconstruction Courses Conducted**

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Olympia Police Department, Olympia, WA; July 24-28, 2006

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Seattle Police Department, Seattle, WA; December 19-23, 2006

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Olympia Police Department, Olympia, WA; November 26-30, 2007

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Norman Police Department, Norman OK; December 5-9, 2008

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Tacoma Police Department, Tacoma, WA; July 2009

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Olympia Police Department, Olympia, WA; April 2010

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Spokane County Sheriff's Office/Spokane Police Department, Spokane, WA; April 2011

"Shooting Scene Reconstruction" A 3-day course involving ammunition, trajectory and vehicle damage assessment in shooting scene processing; Michigan State Police, Frankenmuth, MI; October 2012

"Shooting Scene Reconstruction" A 3-day course involving ammunition, trajectory and vehicle damage assessment in shooting scene processing. Michigan State Police, Frankenmuth, MI; September 9-11, 2013

"Processing and Reconstructing Shooting Crime Scenes" A 40-hour course on crime scene processing in shooting incidents; Kent Police Department, Kent, WA; May 2015

"Shooting Incident Scene Reconstruction" A 3-day course involving ammunition, trajectory and vehicle damage assessment in shooting scene processing; King County Sheriff's Department; Kent, WA; October 2015

"Processing and Reconstructing Shooting and Officer Involved Scenes" A 5-day course involving ammunition, trajectory and vehicle damage assessment in shooting scene processing; Houston Forensic Science Center; Houston TX; June 2016



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**INSTRUCTOR CONTINUED****Shooting Scene Reconstruction Courses Conducted continued**

“Processing and Reconstructing Shooting Scenes” A 5-day course involving ammunition, trajectory and vehicle damage assessment in shooting scene processing; Ada County Sheriff’s Department; Boise, ID; June 2018

“Shooting Incident Scene Reconstruction” A 5-day course involving ammunition, trajectory and vehicle damage assessment in shooting scene processing; Washoe County Sheriff’s Office; Reno, NV; October 2018

**SPECIALTY CONTRACTS****Washington State Patrol**

- Firearms Case Review: March 2007 – April 2007
- Firearms Analysis: December 2007 – December 2008

**Las Vegas Metropolitan Police Department Crime Lab**

- Firearms Analysis and Firearms Examiner Trainer: March 2007 – February 2011

**Washoe County Sheriff’s Office Forensic Science Division**

- Firearms Analysis and Firearms Examiner Trainer: December 2010 – November 2014; January 2015 – March 2015

**Independent Commission of Investigations (INDECOM) Jamaica**

- Shooting Scene Reconstruction and Training, Firearms Analysis and Firearms Analysis Training : July 2012 – Present

**CURRICULUM VITAE - MATTHEW NOEDEL**

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**TESTIMONIES/DEPOSITIONS**

Testimony/Deposition Summary (Approximate; since 2005)

<b>Testimonies</b>	<b>Plaintiff/Prosecution</b>	<b>Defense</b>	<b>Totals</b>
<b>Civil</b>	7	5	<b>12</b>
<b>Criminal</b>	43	40	<b>83</b>
<b>Total Testimonies:</b>			<b>95</b>

<b>Depositions</b>	<b>Plaintiff/Prosecution</b>	<b>Defense</b>	<b>Totals</b>
<b>Civil</b>	10	12	<b>22</b>
<b>Criminal</b>	5	0	<b>5</b>
<b>Total Depositions:</b>			<b>27</b>