

# STATEMENT OF QUALIFICATIONS

Laura Molyneux, MS, AFTE-FA  
AFTE Certified Firearms Examiner  
Forensic Firearms Associates  
San Diego, CA

## AREAS OF EXPERTISE

### Firearms Identification:

- Cartridge Case & Bullet Microscopic Comparison
- Firearm Operability
- Test Fire and NIBIN Entry
- Caliber Determination
- CA Assault Weapon Determination
- Serial Number Restoration
- Officer Involved Shooting Analysis
- Trigger Pull Analysis

### Crime Scene Reconstruction:

- Trajectory Analysis
- Bloodstain Pattern Analysis
- Body Fluid Detection and Analysis

## COURTROOM EXPERIENCE

Firearms Identification  
Firearm Operability  
Test Fire and NIBIN Entry  
Safe Firearm Unload  
Officer Involved Shooting  
Caliber Determination  
Serial Number Restoration  
Crime Scene Reconstruction

## EDUCATION

Master of Science in Biology, University of Nebraska Kearney 2017  
Bachelor of Science in Animal Science, Colorado State University 2005

## PROFESSIONAL EXPERIENCE

### Forensic Firearms Associates

Firearms Examiner/ Consultant (July 2023-Present)

- Firearms Identification
- Crime Scene Reconstruction
- FAID/ CSR Training

### San Diego Police Department Crime Laboratory

Criminalist/ Firearms Unit (January 2017-May 2023)

- Firearms Identification including: comparing cartridges cases, fired bullets, and test fires to reach a source conclusion
- Firearm Operability
- Cartridge case entry and firearms entry into IBIS/ NIBIN
- Caliber determination for fired bullets and creation of possible gun list
- Serial number restoration, California Assault Weapon determination, Trigger Pull analysis
- Officer involved shooting analysis
- Crime Scene Reconstruction including: trajectory analysis, bloodstain pattern analysis, and body fluid detection
- Prepare reports of analysis and testify in court
- NIBIN Program Administrator
- Assist with staff and volunteer training

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### **San Diego Police Department Crime Laboratory**

#### Laboratory Technician/ Firearms Unit (Sept 2013-January 2017)

- Firearm Operability and Perform safe unloads
- Cartridge case and firearms entry into IBIS/ NIBIN
- Serial number restoration
- Prepare reports of analysis and testify in court when needed
- Calibrate and maintain all laboratory equipment, prepare solutions, and manage chemical inventory
- Maintain firearms laboratory ammunition and firearms reference collections

### **University of California San Diego (UCSD) Medical Center at Hillcrest- Point of Care Department**

#### Hospital Laboratory Technician (June 2011- May 2014)

Principle Duties: Oversee all Point of Care Testing (POCT) in UCSD Hospitals and outpatient clinics. Direct all training, orientation, competency documentation for all POCT staff including Nurses, MA's, MD's, etc. Re-write Laboratory SOPs and assist with Joint Commission hospital inspections.

### **UCSD Department of Pediatrics- Dr. Paul Quinton's Cystic Fibrosis Research Laboratory**

#### Research Technician (July 2008-June 2011)

Principle Duties: Developed alternative sweat test assay for Cystic Fibrosis drug efficacy screening, completing IRB for human subjects. Apply for grant funding. Managed CFTR mouse colony; genotyping by PCR. Frozen histology of mouse and porcine tissue. Train student scientists and rotating PhD students.

### **Howard Hughes Medical Institute (HHMI) / University of Texas Southwestern (UTSW) Medical Center at Dallas- Dr. David Mangelsdorf's Research Laboratory**

#### Research Technician (July 2007-May 2008)

Principle Duties: RNA extraction from tissues for cDNA preparation. Maintained over 20 transgenic mouse colonies; genotyping by PCR. Plasmid cloning. Radiation safety manager. Train incoming staff.

### **HHMI / UTSW Medical Center at Dallas- Dr. David L. Garbers' Research Laboratory**

#### Research Technician (November 2005- January 2007)

Principle Duties: Assisted with and performed spermatogonial stem cell transplantations. Maintained transgenic rat colony; genotyping by PCR. Frozen mouse tissue histology, cell culture, subcloning, prepare working solutions for lab.

## PUBLICATIONS

*Beta-adrenergic sweat secretion as a Diagnostic Test for Cystic Fibrosis.* Paul Quinton, **Laura Molyneux**, Wan Ip, Annie Dupuis, Julie Avolio, Elizabeth Tullis, Douglas Conrad, AK Shamsuddin, Mark Pian, Peter Durie, Tanja Gonska, American Journal of Respiratory Care and Critical Medicine. 2012 Oct 15, 186(6): 732-9.

*Spermatogonial culture medium: an effective and efficient nutrient mixture for culturing rat spermatogonial stem cell.* Wu Z, Falcatori I, **Molyneux, LA**, Richardson TE, Chapman KM, Hamra FK. Biol Reprod. 2009 Jul;81(1): 77-86.

*Capacity for stochastic self-renewal and differentiation in mammalian spermatogonial stem cells.* Wu Z, Luby-Phelps K, Budge A, **Molyneux LA**, Denard B, Li WH, Suel GM, Garbers DL. J Cell Biol. 2009 Nov 16;187(4):513-24.

*Spermatogonial stem cell self-renewal requires OCT4, a factor downregulated during retinoic acid-induced differentiation.* Christina Tenenhaus Dann, Alma L. Alvarado, **Laura A. Molyneux**, Bray Denard, David L. Garbers, Matthew H. Porteus, Oct4 is required for spermatogonial stem cell function. Stem Cells. 2008 Nov; 26(11): 298-37.

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### TRAINING

<i>Name of Course</i>	<i>Length</i>	<i>Year</i>
Safety Training	2 days	2013
IBIS BrassTrax 3D	5 days	2013
Hazardous Waste Handler Training	1 day	2013
Wound Ballistics and Bullet Behavior	1 day	2014
Ballistics Imaging & GRC	1 day	2014
Firearms Safety – CCI	3 days	2015
Accidental Discharges/Gunshot Audio Recordings/Bullet Stability& Recovery	1 day	2016
Smith & Wesson Revolver Armorer’s Course Operability Training	1 day	2016
Serial Number Restoration – CCI	3 days	2016
Crime Gun Intelligence Seminar	1 day	2016
Shooting Incident Reconstruction Workshop	1 day	2016
California Assault Weapon Identification	5 days	2017
48th Annual AFTE Training Seminar- Denver, CO	6 days	2017
The Reconstruction of Vehicle Shootings	1 day	2017
Barrel Making Workshop	4 hours	2017
Courtroom Testimony	4 hours	2017
Caliber Determination	4 days	2017
Firearms and Toolmarks Intro I-CCI	3 days	2017
3D Microscopy for Firearms Identification	1 day	2018
ATF/NIBIN Seminar (in Washington, DC)	1 day	2018
Lead Free Ammo, audioanalysis, bumpstocks (So Cal Study Group)	1 day	2018
Suppressors: Their History, Design and Testing	3 days	2018
Manufacturer Tours: Ruger and Kart Barrel (NC)	2 days	2018
Manufacturer Tours: Northeast	8 days	2019
Bloodstain Pattern Analysis I	5 days	2019
Suppressor Evaluation; In House training	5 days	2019
Shooting Incident Reconstruction	5 days	2019
Body Fluid Analysis	2 days	2019
Firearms Comparison/ Identification	12 weeks	2019
Manufacturer Tours: FL and GA	3 days	2020
Manufacturer Tours: AZ	1 day	2020
51 <sup>st</sup> Annual AFTE Training Seminar- Miami, FL/ Virtual	5 days	2021
52 <sup>nd</sup> Annual AFTE Training Seminar- Atlanta, GA	5 days	2022
Glock Armorer’s Course	1 day	2022
53 <sup>rd</sup> Annual AFTE Training Seminar- Austin, TX	5 days	2023
Subclass Workshop	1 day	2023
54 <sup>th</sup> Annual AFTE Training Seminar- Anchorage, AK	5 days	2024
AFTE Certification Written Exam: Firearms Examination (FA-AFTE)	1 day	2024
AFTE Certification Practical Exam: Firearms Examination (FA-AFTE)	1 day	2024
Southern Area Forensic Firearms Training Event- Plano, TX	2 days	2024
CAC: Northern CA Firearms Study Group Meeting	1 day	2024
55 <sup>th</sup> Annual AFTE Training Seminar- Anaheim, CA	4 days	2025
Introductions of Error Rate Metrics Workshop- Anaheim, CA	1 day	2025

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### PROFESSIONAL ORGANIZATIONS

- California Association of Criminalists: 2014-Present
- Association of Firearm and Toolmark Examiners: 2017-Present
- Firearms and Toolmarks Consensus Body of the American Academy of Forensic Sciences Standards Board: 2023-Present
  - Secretary: 2024-Present