

Curriculum Vitae

Forensic Toxicologist - Ed Barley

Education

California State University, Long Beach	1987 - 1990	B.S. Biochemistry
University of California, Riverside	1986 - 1987	Biomedical Studies

Professional Work History

Forensic Toxicologist | 2013 to Present

Toxicology Consultant
Toxicology Expert Witness
(Self-Employment)

Senior Criminalist | 1991 to 2012

Forensic Alcohol Unit
Controlled Substance Unit
Clandestine Laboratories Unit
Toxicology Unit (Criminalist)
(Los Angeles County Sheriff's Department - Scientific Services Bureau)

Professional Work Experience (Testimony)

Toxicology involves understanding the adverse effects of drugs and other chemicals on the human body, especially the effects on biological systems. **Forensic Toxicology** involves the application of toxicology in the application of law or in medicolegal context. The field of Forensic Toxicology involves three main sub-disciplines: postmortem, human performance, and drug testing.

My role as a Forensic Toxicologist, I have been qualified to testify in the areas of postmortem toxicology, human performance toxicology, and drug testing. My testimony has included the topics of driving under the influence of alcohol or drugs, analytical testing methods, postmortem toxicology, human performance toxicology, NHTSA's Standardized Field Sobriety Testing, breath alcohol testing with infrared and fuel cell technologies, blood alcohol testing, reverse extrapolation and forward extrapolation of alcohol levels, drug recognition expert evaluations (DRE), drug and alcohol analytical testing procedures, and chain of custody.

My role as a Forensic Toxicologist, I testify in both Civil and Criminal matters relating to driving under the influence of drugs and or alcohol, homicide, and other violent non-driving related crimes. I currently have testified over 700 times on behalf of the prosecution and defense primarily within the Criminal Courts of California and limited testimony outside of California. My California testimony has been in the following Counties: Alameda, Contra Costa, Fresno, Humboldt, Imperial, Kings, Los Angeles, Marin, Mariposa,

Monterey, Napa, Orange, Placer, Riverside, San Bernardino, San Diego, San Francisco, San Mateo, Santa Barbara, Santa Clara, Santa Cruz, San Louis Obispo, Stanislaus and Ventura. My testimony outside of California has included the States of Alaska, Colorado, Idaho, Iowa, Wyoming, and Virginia.

My role as a Forensic Toxicologist; I testify in Department of Motor Vehicle's Administrative Per Se Hearings, on behalf of the Department Motor Vehicles and the Respondent over 800 times to date.

Professional Work Experience

(Continued)

My role as a Forensic Toxicologist; I consulted for both civil and criminal attorneys primarily in California, but additionally I have consulted with attorneys from the States of Alaska, Colorado, Florida, Indiana, Kentucky, New York, Nevada, Oregon, Idaho, New Hampshire, Pennsylvania, Washington and Wyoming.

I am on the County of Los Angeles Superior Court's "*Panel of Expert Witnesses*"

I am a presenter in the area of Forensic Toxicology Studies for Minimum Continuing Legal Education (MCLE)

Professional Development

(Continued Education)

American Academy of Forensic Sciences (AAFS)

AAFS Connect is the hub of digital forensic science content provided by the American Academy of Forensic Sciences. AAFS Connect hosts conference workshops, presentations, webinars, educational training, and other resources.

Society of Forensic Toxicologists (SOFT)

SOFT Learning Center, Keeping up to date in the field of forensic toxicology with live webinars and courses.

Professional Development

Webinar Workshops

–Mastering Measurement Uncertainty:

From Theory to Practical Application (ANSI/ASB Standard 056) –

American Academy of Forensic Sciences [AAFS] (MAY 2025)

[Various Presenters]

– Exposing Lab Misconduct (An Illinois Scandal) –

National College for DUI Defense [NCDD] (FEB 2025)

Don Ramsell [Presenter]

– Analytical Characterization of Emerging Drugs – Practical Approaches to Address Forensic Science Challenges –

JFS Forensic Lab Talks Seminar (FEB 2025)

Dr. Alex Krotulski [Presenter]

– Clandestine Synthesis of Methamphetamine: An Overview –

JFS Forensic Lab Talks Seminar (FEB 2025)

Dr. Jarrad Wagner [Presenter]

– Forensic Toxicological Investigation of Postmortem Cases –

JFS Forensic Lab Talks Seminar (FEB 2025)

Dr. Luke Rodda [Presenter]

– High Performance Computing Tools to Identify Novel Psychoactive Substances in Toxicology Samples –

JFS Forensic Lab Talks Seminar (FEB 2025)

Dr. Aaron Shapiro [Presenter]

– ANSI/ASB Standard 036: Standard Practices for Method Validation in Forensic Toxicology –

American Academy of Forensic Sciences [AAFS] (FEB 2025)

Dr. Marc LeBeau [Presenter]

– Standards Development Activities in Human Forensic Biology –

American Academy of Forensic Sciences [AAFS] (FEB 2025)

Beth Orderman [Presenter]

– Standards Development Activities in Forensic Science

- Legal Impacts Moving Forward –

American Academy of Forensic Sciences [AAFS] (FEB 2025)

Hon. Christopher Plourd [Presenter]

– Finding Flaws Forensically –

National College for DUI Defense [NCDD] (MAY 2024)

Peter Johnson [Presenter]

– Navigating the Current Challenges in Postmortem Toxicology –

Society of Forensic Toxicologists [SOFT] (DEC 2023)

Joe Kahl, Graham Jones, Diane Moore, Joshua Seither,

Jan Gorniak, Sarah Buxton de Quintana, & Erin Worrell [Presenters]

– A California Firearms Primer –

California DUI Lawyers Association [CDLA] (JUN 2023)

David J. Salvin [Presenter]

– How to Challenge the THC Evidence in Every Case –

California DUI Lawyers Association [CDLA] (JAN 2023)

Dr. Stefan Rose [Presenter]

– Blood, Breath & THC: What you Need to Know –

National College for DUI Defense [NCDD] (OCT 2022)

John Menzel, Jay Norton & Greg Ohlson [Presenters]

**– A Critical Evaluation of the Scientific and
Statistical Validity of the Drug Evaluation Program (DRE)**

Wyoming Trial Lawyers Association (FEB 2022)

Dr. Fran M. Gengo [Presenter]

**– Why Science Does Not Support "per se" Drug Measurements
to Prove Drug Impairment–**

Wyoming Trial Lawyers Association (FEB 2022)

Dr. Jimmie L. Valentine [Presenter]

**– How Law Enforcement Use ARIDE and Drug Recognition Evaluator/Expert (DRE) Training
to Detect Drug Impairment and How This Training Lacks Scientific Validity–**

Wyoming Trial Lawyers Association (FEB 2022)

Dr. Lance A. Platt [Presenter]

– Laboratory Drug Testing: Principles, Methods, and Limitations–

North Carolina Court System (NOV 2020)

Dr. Kiran Dhakal [Presenter]

– Cannabis & Cars –

National College for DUI Defense [NCDD] (SEP 2020)

George Bianchi [Presenter]

Professional Training Workshops (In Person)

– Keynote Address California DUI Lawyers Association –

California DUI Lawyers Association [CDLA] San Diego, CA (AUG 2025)

Hon. Christopher Plourd [Presenter]

– Defending DUI Cases: Science, Strategy, and Hands-On Workshops –

California DUI Lawyers Association [CDLA] San Diego, CA (AUG 2025)

[Various Presenter] [Ed Barley, Expert Contributor]

– Voir Dire, Openings, SFST, Blood Analysis and Brath Analysis –

National College for DUI Defense [NCDD] Newport Beach, CA (JUL 2024)

[Various Presenters]

– “BAD”: Blood Analysis Discovery How to Navigate and Defend –

California DUI Lawyers Association [CDLA] Los Angeles, CA (AUG 2023)

Suzanne Perry [Presenter]

– Venipuncture and AMP –

California DUI Lawyers Association [CDLA] Los Angeles, CA (AUG 2023)

Jeanne Normandeau [Presenter]

– Cannabis-Impaired Driving –

California DUI Lawyers Association [CDLA] San Francisco, CA (AUG 2022)
Dr. Marilyn Huestis [Presenter]

– Drugs & SFSTs –

California DUI Lawyers Association [CDLA] San Francisco, CA (AUG 2022)
Robert LaPier [Presenter]

– The Science of Defending Marijuana DUIs –

California DUI Lawyers Association [CDLA] San Francisco, CA (JUL 2019)
Dr. Stefan Rose [Presenter]

– Drug Combinations –

National College for DUI Defense [NCDD] Los Angeles, CA (JAN 2019)
Dr. Fran Gengo [Presenter]

– The Drug Recognition Expert (DRE) Overview –

National College for DUI Defense [NCDD] Los Angeles, CA (JAN 2019)
Anthony Palacios & Ron Lloyd [Presenters]

– The Drug Recognition Expert (DRE) Live Examinations –

National College for DUI Defense [NCDD] Los Angeles, CA (JAN 2019)
Anthony Palacios, Ron Lloyd &
Dr. Lance Platt, Ph.D. [Presenters]

– The Expert Witness as Educator –

California DUI Lawyers Association [CDLA], San Francisco, CA (2018)
Jan Semenoff [Presenter]

– Establishing Reliability Standardized Acts,

– Practices & Conditions in Forensic Testing –

California DUI Lawyers Association [CDLA], San Francisco, CA (2018)
Jan Semenoff [Presenter]

– Are All People Too Impaired to Drive Safely at 0.05%? –

California DUI Lawyers Association [CDLA], San Francisco, CA (2018)
Ronald Moore [Presenter]

– Pharmacology of DUID –

California DUI Lawyers Association [CDLA] Fresno, CA (2017)
Dr. Alan Donelson [Presenter]

– Beyond the GC Peak –

California DUI Lawyers Association [CDLA] San Diego, CA (2016)
Suzanne Perry [Presenter]

– Marijuana DUID –

California DUI Lawyers Association [CDLA] San Diego, CA (2016)
Manny Daskal [Presenter]

– Laryngopharyngeal Reflux “LPR” –

California DUI Lawyers Association [CDLA] Fresno, CA (2015)
Dr. Bret Sherman [Presenter]

– Understanding Blood Gas Chromatography –

California DUI Lawyers Association [CDLA] Newport Beach, CA (2014)
Dr. Stefan Rose [Presenter]

– Proper Forensic Blood Draw Evidence –

California DUI Lawyers Association [CDLA] Newport Beach, CA (2014)
Ron Lopez R.N. [Presenter]

– Forensic Breath Testing –

California DUI Lawyers Association [CDLA] Newport Beach, CA (2014)
James Wigmore [Presenter]

– Marijuana and DUI Issues –

California DUI Lawyers Association [CDLA] Fresno, CA (2014)
Paul Armentano [Presenter]

– DRE Evaluation –

California DUI Lawyers Association [CDLA] Fresno, CA (2014)
Richard Middlebrook [Presenter]

– Toxicology Sleep and Driving Under the Influence Workshop –

California Association of Toxicologist [CAT] Sacramento, CA (2010)
[Various Presenters]

– AAFS 62nd Annual Scientific Meeting –

American Academy of Forensic Sciences [AAFS] Seattle, WA (2010)
[Various Presenters]

– IACT 22nd Annual Conference –

International Association Chemical Testing (IACT) Anchorage, AK (2009)
[Various Presenters]

– NPAS’s [DataMaster cdm] Program Manager’s Meeting –

International Association Chemical Testing (IACT) Anchorage, AK (2009)
[Various Presenters]

– Drinking and Driving Simulator –

California Association of Criminalist [CAC] Devore, CA (2009)
[Various Presenters]

– Technical Seminar (Methamphetamine) –

Clandestine Laboratory Investigating Chemist [CLIC] San Diego, CA (1997)
[Various Presenters]

– Technical Seminar (Fentanyl) –

Clandestine Laboratory Investigating Chemist [CLIC] Alexandria, VA (1996)
[Various Presenters]

– Technical Seminar (MDA) –

Clandestine Laboratory Investigating Chemist [CLIC] Vancouver, B.C (1994)
[Various Presenters]

– Toxicology Training Colloquium –

California Association of Toxicologist [CAT] Irvine, CA (1992)
[Various Presenters]

– Toxicology General Meeting –

California Association of Toxicologist [CAT] San Diego, CA (1991)
[Various Presenters]

– Toxicology Workshop –

California Association of Criminalist [CAC] Huntington Beach, CA (1991)
[Various Presenters]

Professional Training & Experience

–ARIDE Impaired Driver Education –

(16-hour training focusing on ARIDE curriculum)
Torrance, CA (Mar 2019)
Christian Martorana [Presenter]

–DataMaster DMT: Theory of Operation and Instructor (NPAS) –

Los Angeles County Sheriff's Department Downey, CA (2011)
[Various Presenters]

–Uncertainty of Blood Measurements for Blood Alcohol Levels –

Los Angeles County Sheriff's Department Downey, CA (2011)
[Various Presenters]

–Alcohol Correlation Study –

Los Angeles County Sheriff's Department Downey, CA (2009)
Ed Barley [Coordinator]

**–Pharmacokinetic Processes, Pharmacology and Pharmacokinetics of
Amphetamines and Cocaine –**

California Criminalistics Institute Los Angeles, CA (2008)
[Various Presenters]

**–Unlocking the Significance of Forensic Toxicology & Neurobiology &
Pharmacokinetics of Cannabinoids –**

California Criminalistics Institute Los Angeles, CA (2008)
[Various Presenters]

**–DataMaster cdm: Theory of Operation, Supervisory Functions,
Maintenance, Calibration and Repair –**

NPAS, Mansfield, OH (2008)
[Various Presenters]

–Dräger Alcotest 6510 – Instructor –

Dräger Safety Diagnostic Downey, CA (2006)
[Various Presenters]

–Standardized Field Sobriety Testing (16 hours)–

NHTSA's SFST, Santa Anna, CA (2006)
[Various Presenters]

–Alco-Sensor IV – Operator, Maintenance and Calibration –

PAS Coordinator Course El Segundo, CA (2006)
[Various Presenters]

–Borkenstein Course on Alcohol and Highway Safety –

Robert F. Borkenstein Indiana University, IN (2005)
[Various Presenters]

–DataMaster cdm, Officer Instructor Training –

Los Angeles County Sheriff's Department Downey, CA (2005)
[Various Presenters]

–Lifeloc FC, Operator, Maintenance and Calibration Course for the FC Series –

Lifeloc Technologies, Factor Authorized Instructor Downey, CA (2005)
[Various Presenters]

–Emergency Vehicle Operations Center – Patrol vehicle drivers training –

Los Angeles County Sheriff's Department Pomona (1995)
[Various Presenters]

–Fourier-transform infrared spectroscopy (FTIR) Workshop –

Nicolet, Woodland Hills, CA (1997)
[Various Presenters]

–Clandestine Laboratory Analysis and Synthesis –

California Criminalistics Institute Sacramento, CA (1994)
[Various Presenters]

–DEA - Forensic Chemist Seminar –

Drug Enforcement Agency (DEA) McLean, VA (1994)
[Various Presenters]

–Mass Spectra Theory and Interpretation –

California Criminalistics Institute, Sacramento, CA (1994)
[Various Presenters]

–Emergency Operations Center – 480 Radio Training –

Los Angeles County Sheriff's Department, Los Angeles, CA (1994)
[Various Presenters]

–Controlled Substances - Identification of Steroids –

Los Angeles County Sheriff's Department, Los Angeles, CA (1992)
[Various Presenters]

–Identification of Controlled Substances –

Los Angeles County Sheriff's Department, Los Angeles, CA (1992)
[Various Presenters]

–Toxicology - PCP Blood Confirmation –

Los Angeles County Sheriff's Department, Los Angeles, CA (1992)
[Various Presenters]

–Alcohol Correlation Study –

(Ed Barley Role - Monitor)

Los Angeles County Sheriff's Department, Los Angeles, CA (1991)

–Toxicology EMIT & RIA Screening for Controlled Substances –

Los Angeles County Sheriff's Department, Los Angeles, CA (1991)
[Various Presenters]

Professional Presentations & Trainings Provided

–Webinar Title: Chemical Breath Test Machines–

California DUI Lawyers Association [CDLA] (APR 2024)
(MCLE credit)

–Webinar Title: Cross Examination of the State's Expert–

California DUI Lawyers Association [CDLA] (FEB 2023)
(MCLE credit)

–Webinar Title: Cannabis impairment facts vs fiction, how law enforcement establishes driving impairment from marijuana, utilizing the Drug recognition process and toxicological examination of a biological sample –

Affinity Group ProVisors Los Angeles Valley (AUG 2022)
(Group of attorneys, CPAs, Valuation Experts, supply chain experts,
human resources, insurance brokers, IT, SoCal Cannabis
business coach, business sales, etc.)

–Webinar Title: THC / Cannabis Toxicology: Recognizing Impairment–

Medical Forensic Group (APR 2021 to JAN 2023)
(MCLE credit)

–Webinar Title: Untangling the Web Part 2 - How to prepare for Administrative Per Se DMV hearings–

Alameda County Bar Association (AUG 2021)
(MCLE credit)

–Training Topic: DRE 12 Step Process–

Los Angeles County Deputy Public Defender's Office,
Metropolitan Courthouse (DEC 2019)

–Training Topic: D.U.I. & Voodoo Science–

San Luis Obispo County Criminal Defense Bar (AUG 2019)

-Training Topic: Breath Alcohol Issues-

The Kavinsky Law Firm (JUN 2019)

-Training Topic: Forensic Alcohol Basics-

Los Angeles County Deputy District Attorney's Office
Beverly Hills, CA (2011)

-Training Topic: Forensic Alcohol Basics-

Substance Abuse Meeting Redondo Beach, CA (2008)
South Bay Bar Association

-Training Topic: Forensic Alcohol Basics-

Los Angeles, CA (2007)
Judges DUI Conference

-Training Topic: Forensic Alcohol Basics-

Substance Abuse Meeting Torrance, CA (2006)
South Bay Bar Association

-Training Topic: Crime Lab Introduction-

Cal State Northridge Microbiology Students Northridge, CA (2005)

-Training Topic: Function of The Crime Lab-

Los Angeles County Sheriff's Department, Los Angeles, CA (1996)

-Training Topic: Methamphetamine Manufacturing-

Redondo Beach Police Department Redondo Beach, CA (1996)

-Training Topic: Methamphetamine Manufacturing-

Monterey Park Police Department Monterey Park, CA (1996)

-Training Topic: Function of The Crime Lab-

El Camino College Criminal Justice Department (1996)

-Training Topic: Crime scene Investigation-

Cal State Long Beach Criminal Justice Program Long Beach, CA (1994)

-Training Topic: Crime scene Investigation-

Cal State Long Beach Criminal Justice Program Long Beach, CA (1992)

Professional Certifications

-Forensic Alcohol Supervisor-

California Department of Health Services (2010)

-Forensic Alcohol Analyst-

California Department of Health Services (2006)

-NHTSA Standardized Field Sobriety Testing-

–Clandestine Laboratory Safety Certification–

Department of Justice - Bureau of Narcotics Chico, CA (1995)

–Emergency Medical Technician 1 Ambulance, Certification: #18182A–

County of Los Angeles (JUN 1992)

–Adult CPR Instructor–

American Red Cross - Los Angeles (1992)

Detailed Professional Employment History

– Forensic Toxicologist –

(2013 to Present)

My professional experience as a Forensic Toxicologist, I have been qualified in the field of in the areas of postmortem, human performance, and drug testing. My testimony has included, driving under the influence of alcohol or drugs, analytical testing methods, postmortem toxicology, human performance toxicology, NHTSA's Standardized Field Sobriety Testing, breath alcohol testing with infrared and fuel cell technologies, blood alcohol testing, reverse extrapolation and forward extrapolation of alcohol levels, drug recognition expert evaluations (DRE), drug and alcohol analytical testing procedures, and chain of custody.

My role as a Forensic Toxicologist, I have testified extensively in both Civil and Criminal matters relating to driving under the influence of drugs and or alcohol, homicide, and other violent non-driving related crimes. My role as a Forensic Toxicologist; I have testified the Department of Motor Vehicle's Administrative Per Se Hearings, on behalf of the Department Motor Vehicles and the Respondent.

– Senior Criminalist (Retired 2012) –

Medical Retirement

– Senior Criminalist –

Forensic Alcohol Unit (2005 – 2012)

My professional experience as a Senior Criminalist with the Los Angeles County Sheriff's Department; included testing around a thousand blood and urine samples for alcohol content, with headspace gas chromatography. Reviewing and co-signing of the blood alcohol analysis of the section's laboratory technicians; including clerical, administrative, and technical reviews of case reports and documentation. Responsible for the maintenance, programming and software installation, configuration, customization, and testing of the Perkin Elmer Clarus 500 gas chromatograph, with headspace attachment.

I have developed and designed crystal web reports and integration of the Perkin Elmer Clarus 500 gas chromatograph with the Laboratory Information Network (LIMS). I assisted in the development and design of a web database for files and records associated with the Blood Alcohol Section's records website – LASD.org

I have provided training for Deputy District Attorneys, and Public and Private Attorneys in forensic alcohol topics. I have provided training and assisted law enforcement officers in breath analysis with the DataMaster series. I have provided training and assisted law enforcement officers in the calibration of the Alco Sensor IV as required by Title 17 of the California Code of Regulations.

I attended the manufacturers product demonstration of the Lifeloc's FC10 & FC20, Dräger's Alco-Test 7510, and Intoximeters' Alco-Sensor FST & Alco-Sensor Vxl.

I have worked with DataMaster software engineer on the testing of the software configuration, customization, and communication of the DataMaster DMT. I developed and designed crystal web reports for maintenance, accuracy, usage, and subject data logs for the DataMaster DMT.

My training has included "ride along" with law enforcement officers to observe individuals under the influence of alcohol and drugs. I was trained and certified in NHTSA Standardized Field Sobriety Testing.

My role as a Senior Criminalist, I have testified extensively in matters relating to driving under the influence of alcohol and other criminal matters.

**– Senior Criminalist –
Medical Absence (1999 – 2005)**

I was off duty due to a Service-Connected Disability.

**– Senior Criminalist –
Narcotics and Clandestine Lab Unit
(1993 – 1999)**

My professional experience as a Senior Criminalist with the Los Angeles County Sheriff's Department; included assignments in the analyses of evidentiary substances (narcotics, steroids, and other drugs) utilizing colorimetric, microscopic techniques, chromatography, and spectrograph.

I have worked on clandestine drug laboratory analysis and responded to active clandestine drugs labs.

I have worked on, repaired and maintained laboratory instrumentation such as gas chromatograph, mass spectra and IR instrumentations. I provided training in analytical methods, instrumentation, and narcotics testing procedures to members of the narcotic section.

I trained law enforcement officers in the manufacturing methods of clandestine drug laboratories. I assisted in the development of new analytical testing methods. I worked with the Toxicology section to co-author a paper on drug detection in urine.

My role as a Senior Criminalist in the narcotic section, I have testified extensively in the areas of narcotics identification, drug effects and the identification of the clandestine manufacturing of drugs.

**– Criminalist –
Toxicology Lab Unit
(1991 – 1993)**

My professional experience with the Los Angeles County Sheriff's Department; included the screening of evidentiary blood and urine sample for drugs of abuse. I was responsible for the analysis of blood to

determine the presence and quantity of Phencyclidine (PCP). I was responsible for the analysis of blood and urine for controlled substances by enzyme multiplied immunoassay technique (ELSA) and radioimmunoassay technique (RIA).

My training included “ride along” with California Highway Patrol (CHP) to observe individuals under the influence of drugs.

My role as a Criminalist assigned to the toxicology, I testified to matters that related to the testing and identification of drugs in a biological sample, and the effects of the drug on a person.

Professional Associations

(Memberships)

American Academy of Forensic Sciences (AAFS)
Society of Forensic Toxicologists (SOFT) (online training)

(Past Professional Law Enforcement Memberships)

American Academy of Forensic Sciences (AAFS)
International Association for Chemical Testing (IACT)
California Association of Toxicologist (CAT)
Clandestine Laboratory Investigating Chemist (CLIC)

Professional Awards

Los Angeles County Sheriff's Department

2012 Distinguished Service Award

“Recognition of outstanding efforts in contributing to the Department’s goals, which reflect a high degree of personal initiative, regarding the DataMaster DMT project”

Commendation (Multiple)

“Recognition of outstanding efforts in contributing to the Department’s goals, regarding forensic alcohol training, alcohol testimony, narcotics training, and narcotic evidence processing.”

Professional Publications

“Identification of Phencyclidine Analogs Using Thin Layer Chromatography.”
Toxilab News : Winter 1994, Vol. 13.

“LSD blotter case of special interest, Technical Note”, DEA Microgram :
January 9, 1993.