

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 and Expert Witness
(Self-Employment)

Retired, Senior Criminalist (2012)

Senior Criminalist (1993 to 2012)

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

Criminalist (1991 to 1993)

Los Angeles County Sheriff's Department - Scientific Services Bureau
Toxicology Unit

Professional Work Experience

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 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. I have testified more than 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. Additionally, I have provided testimony in the States of Alaska, Colorado, Idaho, Iowa, Wyoming, and Virginia.

My role as a Forensic Toxicologist; I have testified in forensic alcohol cases well over 800 times in the Department of Motor Vehicle's Administrative Per Se Hearings, on behalf of the Department Motor Vehicles and the Respondent.

Professional Work Experience (continued)

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

The County of Los Angeles Superior Court's "*Panel of Expert Witnesses*"

MCLE Provider for Forensic Toxicology Studies

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, Keep up-to-date in the field of forensic toxicology with live webinars and courses in our library.

Workshops (Webinar)

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

- *Exposing Lab Misconduct – An Illinois Scandal* –
Don Ramsell

JFS Forensic Lab Talks Seminar (FEB 2025)

- *Analytical Characterization of Emerging Drugs – Practical Approaches to Address Forensic Science Challenges* –
Dr. Alex Krotulski

JFS Forensic Lab Talks Seminar (FEB 2025)

- *Clandestine Synthesis of Methamphetamine: An Overview* –
Dr. Jarrad Wagner

JFS Forensic Lab Talks Seminar (FEB 2025)

- *Forensic Toxicological Investigation of Postmortem Cases* –
Dr. Luke Rodda

JFS Forensic Lab Talks Seminar (FEB 2025)

- *High Performance Computing Tools to Identify Novel Psychoactive Substances in Toxicology Samples* –
Dr. Aaron Shapiro

American Academy of Forensic Sciences (FEB 2025)

- *ANSI/ASB Standard 036: Standard Practices for Method Validation in Forensic Toxicology* –
– Dr. Marc LeBeau

American Academy of Forensic Sciences (FEB 2025)

- *Standards Development Activities in Human Forensic Biology* –
Beth Orderman

American Academy of Forensic Sciences (FEB 2025)

- *Standards Development Activities in Forensic Science- Legal Impacts Moving Forward* –
Hon. Christopher Plourd

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

- *Finding Flaws Forensically* –
Peter Johnson

Society of Forensic Toxicologists [SOFT] (DEC 2023)

- *Navigating the Current Challenges in Postmortem Toxicology* –
Joe Kahl, Graham Jones, Diane Moore, Joshua Seither, Jan Gorniak, Sarah Buxton de Quintana, & Erin Worrell

California DUI Lawyers Association [CDLA] (JUN 2023)

- *A California Firearms Primer* –
David J. Salvin

California DUI Lawyers Association [CDLA] (JAN 2023)

- *How to Challenge the THC Evidence in Every Case* –
Dr. Stefan Rose

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

- *Blood, Breath & THC: What you Need to Know* –
John Menzel, Jay Norton & Greg Ohlson

Wyoming Trial Lawyers Association (FEB 2022)

- *A Critical Evaluation of the Scientific and Statistical Validity of the Drug Evaluation Program (DRE)* –
Dr. Fran M. Gengo

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

Dr. Jimmie L. Valentine

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

Dr. Lance A. Platt

North Carolina Court System (NOV 2020)

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

Dr. Kiran Dhakal

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

– *Cannabis & Cars* –

George Bianchi

Workshops (In Person)

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

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

Various Presenters

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

– *“BAD”: Blood Analysis Discovery*

How to Navigate and Defend –

Suzanne Perry

– *Venipuncture and AMP* –

Jeanne Normandeau

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

– *Cannabis-Impaired Driving* –

Dr. Marilyn Huestis

– *Drugs & SFSTs* –

Robert LaPier

California DUI Lawyers Association [CDLA] San Francisco, CA (JUL 2019)

– *The Science of Defending Marijuana DUIs* –

Dr. Stefan Rose

National College for DUI Defense [NCDD] Los Angeles, CA (JAN 2019)

– *Drug Combinations* –

Dr. Fran Gengo

– *The Drug Recognition Expert (DRE) Overview* –

Anthony Palacios & Ron Lloyd

– *The Drug Recognition Expert (DRE) Live Examinations* –

Anthony Palacios, Ron Lloyd &
Dr. Lance Platt, Ph.D.

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

- *The Expert Witness as Educator* –
Jan Semenoff

- *Establishing Reliability Standardized Acts, Practices & Conditions in Forensic Testing* –
Jan Semenoff

- *Are All People Too Impaired to Drive Safely at 0.05%?* –
Ronald Moore

California DUI Lawyers Association [CDLA] Fresno, CA (2017)

- *Pharmacology of DUID* –
Dr. Alan Donelson

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

- *Beyond the GC Peak* –
Suzanne Perry

- *Marijuana DUID* –
Manny Daskal

California DUI Lawyers Association [CDLA] Fresno, CA (2015)

- *Laryngopharyngeal Reflux “LPR”* –
Dr. Bret Sherman

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

- *Understanding Blood Gas Chromatography* –
Dr. Stefan Rose

- *Proper Forensic Blood Draw Evidence* –
Ron Lopez R.N.

- *Forensic Breath Testing* –
James Wigmore

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

- *Marijuana and DUI Issues* –
Paul Armentano

- *DRE Evaluation* –
Richard Middlebrook

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

- *Toxicology Sleep and Driving*

*Under the Influence Workshop –
Various Presenters*

American Academy of Forensic Sciences [AAFS] Seattle, WA (2010)
– *AAFS 62nd Annual Scientific Meeting –*
Various Presenters

International Association Chemical Testing (IACT) Anchorage, AK (2009)
– *IACT 22nd Annual Conference –*
Various Presenters

– *NPAS's Program Manager's Meeting –*

California Association of Criminalist [CAC] Devore, CA (2009)
– *Drinking and Driving Simulator –*

Clandestine Laboratory Investigating Chemist [CLIC] San Diego, CA (1997)
– *Technical Seminar (Methamphetamine) –*

Clandestine Laboratory Investigating Chemist [CLIC] Alexandria, VA (1996)
– *Technical Seminar (Fentanyl) –*

Clandestine Laboratory Investigating Chemist [CLIC] Vancouver, B.C (1994)
– *Technical Seminar (MDA) –*

California Association of Toxicologist [CAT] Irvine, CA (1992)
– *Toxicology Training Colloquium –*

California Association of Toxicologist [CAT] San Diego, CA (1991)
– *Toxicology General Meeting –*

California Association of Criminalist [CAC] Huntington Beach, CA (1991)
– *Toxicology Workshop –*

Professional Training

ARIDE Impaired Driver Education Torrance, CA (Mar 2019)
ARIDE (16-hour training focusing on ARIDE curriculum)
Christian Martorana

Los Angeles County Sheriff's Department Downey, CA (2011)
DataMaster DMT: Theory of Operation and Instructor (NPAS)
Uncertainty of Blood Measurements for Blood Alcohol Levels

Los Angeles County Sheriff's Department Downey, CA (2009)
Alcohol Correlation Study
Ed Barley Coordinator

California Criminalistics Institute Los Angeles, CA (2008)
Pharmacokinetic Processes, Pharmacology and Pharmacokinetics of
Amphetamines and Cocaine

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

NPAS, Mansfield, OH (2008)
DataMaster cdm: Theory of Operation, Supervisory Functions,
Maintenance, Calibration and Repair

Dräger Safety Diagnostic Downey, CA (2006)
Dräger Alcotest 6510 – Instructor

NHTSA's SFST, Santa Anna, CA (2006)
Standardized Field Sobriety Testing (16 hours)

PAS Coordinator Course El Segundo, CA (2006)
Alco-Sensor IV – Operator, Maintenance and Calibration

Robert F. Borkenstein Indiana University, IN (2005)
Course on Alcohol and Highway Safety

Los Angeles County Sheriff's Department Downey, CA (2005)
DataMaster cdm, Officer Instructor Training

Lifeloc Technologies, Factor Authorized Instructor Downey, CA (2005)
Lifeloc FC, Operator, Maintenance and Calibration Course for the FC Series

Los Angeles County Sheriff's Department Pomona (1995)
Emergency Vehicle Operations Center – Patrol vehicle drivers training

Nicolet, Woodland Hills, CA (1997)
Fourier-transform infrared spectroscopy (FTIR) Workshop

California Criminalistics Institute Sacramento, CA (1994)
Clandestine Laboratory Analysis and Synthesis

Drug Enforcement Agency (DEA) McLean, VA (1994)
DEA - Forensic Chemist Seminar

California Criminalistics Institute, Sacramento, CA (1994)
Mass Spectra Theory and Interpretation

Los Angeles County Sheriff's Department, Los Angeles, CA (1994)
Emergency Operations Center – 480 Radio Training

Los Angeles County Sheriff's Department, Los Angeles, CA (1992)
Controlled Substances - Identification of Steroids
Identification of Controlled Substances
Toxicology - PCP Blood Confirmation

Los Angeles County Sheriff's Department, Los Angeles, CA (1991)
Alcohol Correlation Study (Ed Barley Role - Monitor)
Toxicology EMIT & RIA Screening for Controlled Substances

Presentations & Trainings Provided

California DUI Lawyers Association [CDLA] (APR 2024)
Webinar Title: *Chemical Breath Test Machines*
(MCLE credit)

California DUI Lawyers Association [CDLA] (FEB 2023)
Webinar Title: *Cross Examination of the State's Expert*
(MCLE credit)

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

Medical Forensic Group (APR 2021 to JAN 2023)
Webinar Title: *THC / Cannabis Toxicology: Recognizing Impairment*
(MCLE credit)

Alameda County Bar Association (AUG 2021)
Webinar Title: *Untangling the Web Part 2 - How to prepare for Administrative Per Se DMV hearings*
(MCLE credit)

Los Angeles County Deputy Public Defender's Office,
Metropolitan Courthouse (DEC 2019)
Training Topic: *DRE 12 Step Process*

San Luis Obispo County Criminal Defense Bar (AUG 2019)
Training Topic: *D.U.I. & Voodoo Science*

The Kavinoky Law Firm (JUN 2019)
Training Topic: *Breath Alcohol Issues*

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

Training Topic: *Forensic Alcohol Basics*

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

Training Topic: *Forensic Alcohol Basics*

Judges DUI Conference

Los Angeles, CA (2007)

Training Topic: *Forensic Alcohol Basics*

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

Training Topic: *Forensic Alcohol Basics*

Cal State Northridge Microbiology Students Northridge, CA (2005)

Training Topic: *Crime Lab Introduction*

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

Training Topic: *Function of The Crime Lab*

Redondo Beach Police Department Redondo Beach, CA (1996)

Training Topic: *Methamphetamine Manufacturing*

Monterey Park Police Department Monterey Park, CA (1996)

Training Topic: *Methamphetamine Manufacturing*

El Camino College Criminal Justice Department (1996)

Training Topic: *Function of The Crime Lab*

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)

Training Topic: *Crime scene Investigation*

Certifications

California Department of Health Services (2010)

Forensic Alcohol Supervisor

California Department of Health Services (2006)

Forensic Alcohol Analyst

California Narcotic Officers Association (2006)
NHTSA Standardized Field Sobriety Testing

Department of Justice - Bureau of Narcotics Chico, CA (1995)
Clandestine Laboratory Safety Certification

County of Los Angeles (JUN 1992)
Emergency Medical Technician 1 Ambulance, Certification: #18182A

American Red Cross - Los Angeles (1992)
Adult CPR Instructor

Detailed 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)

Los Angeles County Sheriff's Department – Scientific Services Bureau
- 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, programing 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)

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."

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.