

CURRICULUM VITAE

Edward “Chip” Pollock

EDUCATION

- ◆ Bachelor of Science in Biochemistry, University of California – Davis.

PROFESSIONAL EXPERIENCE

- ◆ Broad Spectrum Forensics, Independent Forensic Consulting Services, *2022 – Present.*
- ◆ Sacramento County District Attorney’s Office - Laboratory of Forensic Services, *2001 – 2021.*
 - Laboratory Director, *2016 – 2021.*
 - Criminalist Supervisor, Criminalistics Section and Crime Scene Program, *2009 – 2016.*
 - Criminalist Supervisor, Chemistry Section, *2008 – 2009.*
 - Criminalist III, Criminalistics Section / Trace Evidence Unit, *2001 – 2008.*
- ◆ California Department of Justice – Bureau of Forensic Services, Sacramento Laboratory, *1996 – 2001.*
 - Senior Criminalist, *1996 – 2001.*
 - Criminalist, *1995 – 1996.*
- ◆ Contra Costa County Sheriff’s Office – Criminalistics Laboratory, *1990 – 1995.*
 - Forensic Toxicologist, *1990 – 1995.*

SPECIALIZED TRAINING

- ◆ Basic Forensic Microscopy, McCrone Research Institute, *1992.*
- ◆ Mass Spectra Theory and Interpretation, California Criminalistics Institute (CCI), *1993.*
- ◆ Arson Accelerant Detection, California Criminalistics Institute (CCI), *1995.*
- ◆ Crime Scene Investigation I, California Criminalistics Institute (CCI), *1996.*
- ◆ Fiber Identification and Comparison, California Criminalistics Institute (CCI), *1996.*
- ◆ Paint Identification and Comparison, California Criminalistics Institute (CCI), *1996.*
- ◆ Bullet Path Reconstruction Workshop, California Association of Criminalistics (CAC) Seminar, *1996.*
- ◆ Trace Evidence in Transition International Symposium, Federal Bureau of Investigation (FBI), *1996.*
- ◆ Hair Examination and Comparison, California Criminalistics Institute (CCI), *1997.*
- ◆ Animal Hairs and Feathers, California Criminalistics Institute (CCI), *1997.*
- ◆ Advanced Fire Debris Analysis, California Criminalistics Institute (CCI), *1997.*
- ◆ Hair Examination and Comparison, California Criminalistics Institute (CCI), *1997.*
- ◆ Crime Scene Reconstruction Workshop, California Association of Criminalistics (CAC) Seminar, *1997.*
- ◆ Interpretation of Infrared Spectra, California Criminalistics Institute (CCI), *1997.*
- ◆ Firearms Safety, California Criminalistics Institute (CCI), *1997.*
- ◆ Bloodstain Pattern Interpretation, California Criminalistics Institute (CCI), *1997.*
- ◆ Headlamp Examination, California Criminalistics Institute (CCI), *1997.*
- ◆ Glass Examination and Comparison, California Criminalistics Institute (CCI), *1998.*
- ◆ Advanced Light Microscopy, California Criminalistics Institute (CCI), *1998.*
- ◆ Scanning Electron Microscopy and X-Ray Microanalysis, Lehigh University, *1999.*
- ◆ Identification of Building Materials, California Criminalistics Institute (CCI), *2000.*
- ◆ Firearms and Toolmarks I, California Criminalistics Institute (CCI), *2000.*
- ◆ Firearms and Toolmarks II, California Criminalistics Institute (CCI), *2000.*
- ◆ Firearms and Toolmarks Criteria for Identification, California Criminalistics Institute (CCI), *2000.*
- ◆ Detection and Recovery of Footwear and Tire Impression Evidence, California Criminalistics Institute (CCI), *2001.*

SPECIALIZED TRAINING, *continued*

- ◆ Footwear Impression Evidence Examination, California Criminalistics Institute (CCI), 2002.
- ◆ Infrared Spectra Theory and Interpretation, California Criminalistics Institute (CCI), 2002.
- ◆ Tire Track and Tire Impression Evidence Examination, California Criminalistics Institute (CCI), 2002.
- ◆ Elemental Chemical Analysis by Inductively Coupled Plasma Optical Emission Spectroscopy and Mass Spectrometry, The Ohio State University, 2002.
- ◆ Laser Ablation ICP-MS Short Course, University of California – Davis, 2003.
- ◆ Individualized Training for the Examination of Glass with a Focus on Elemental Analysis by ICP-MS, Florida International University, 2004.
- ◆ Winter Conference on Plasma Spectrochemistry, 2004.
- ◆ Police Office Standard and Training (POST) – Institute of Criminal Investigation (ICI) Instructor Course, San Diego Regional Training Center, 2004.
- ◆ Inductively Coupled Plasma Mass Spectrometry (ICP-MS) Training Course, PerkinElmer – Global Customer Training Department, 2004.
- ◆ Elan Dynamic Reaction Cell Training Course, PerkinElmer – Global Customer Training Department, 2004.
- ◆ Elemental and Isotopic Analysis of Forensic Evidence “Hands-On” Workshop, International Forensic Research Institute (IFRI), Florida International University, 2005.
- ◆ Introduction to ISO/IEC 17025:2005, American Society of Crime Laboratory Directors – Laboratory Accreditation Board (ASCLD/LAB), 2006.
- ◆ ASCLD/LAB International Assessor Training Course, American Society of Crime Laboratory Directors – Laboratory Accreditation Board (ASCLD/LAB), 2006.
- ◆ Forensic Photography, Nikon-USA, 2007.
- ◆ Trace Evidence Symposium, National Institute of Justice (NIJ) and Federal Bureau of Investigation (FBI) Laboratory Division, 2007.
- ◆ Advanced Forensic Light Microscopy: Hair and Fibers, McCrone Research Institute, 2008.
- ◆ Shooting Incident Reconstruction, California Criminalistics Institute (CCI), 2008.
- ◆ Textile Fundamentals, North Carolina State University, 2008.
- ◆ Advanced Forensic Light Microscopy: Paint and Polymers, McCrone Research Institute, 2008.
- ◆ Supervisor Training, Sacramento County District Attorney’s Office, 2008.
- ◆ Advanced Forensic Light Microscopy: Glass, McCrone Research Institute, 2008.
- ◆ Elemental of Forensic Evidence Workshop / Working Group, Florida International University, 2008.
- ◆ Forensic Management Academy, College of Business and Economics, West Virginia University, 2009.
- ◆ Trace Evidence Symposium, National Institute of Justice (NIJ) and Federal Bureau of Investigation (FBI) Laboratory Division, 2009.
- ◆ Pathology of Wounds, California Criminalistics Institute (CCI), 2009.
- ◆ Supervisor Academy: Compliance Series, County of Sacramento 2010.
- ◆ Supervisor Academy: Workforce Effectiveness Series, County of Sacramento 2010.
- ◆ Raman Microscopy, McCrone Research Institute, 2010.
- ◆ 38th Annual Crime Laboratory Development Symposium, 2010.
- ◆ Leica Geosystems High-Definition Surveying Training, Leica Geosystems, 2011.
- ◆ California Association of Crime Laboratory Directors (CACLD) Conference, CACLD, 2011.
- ◆ Forensic Pathology of Gunshot Wounds, California Criminalistics Institute (CCI), 2011.
- ◆ Pittcon Exposition and Conference, Pittcon, 2012.
- ◆ Forensics at NIST, National Institute of Standards and Technology (NIST), 2014.
- ◆ Pittcon Exposition and Conference, Pittcon, 2014.
- ◆ The Impression Pattern and Trace Evidence Symposium, National Institute of Justice (NIJ), 2015.
- ◆ Probability and Statistics for Forensics, The Impression Pattern and Trace Evidence Symposium, National Institute of Justice (NIJ) and RTI International – Center for Forensics, 2015.
- ◆ California Association of Crime Laboratory Directors (CACLD) Conference, CACLD, 2015.

SPECIALIZED TRAINING, *continued*

- ♦ Pittcon Exposition and Conference, Pittcon, 2016.
- ♦ Forensic ISO/IEC 17025 Assessor Training Course, ANSI/ASQ National Accreditation Board (ANAB), 2017.
- ♦ Forensic Science Research Innovation to Implementation Symposium, National Institute of Standards and Technology (NIST), 2019.

EXPERT WITNESS TESTIMONY

♦ United States Federal Court

- U.S District Court – Eastern District of California
- U.S District Court – Western District of California

♦ California Superior Court

- Alpine County
- Amador County
- Contra Costa County
- El Dorado County
- Napa County
- Nevada County
- Placer County
- Sacramento County
- San Joaquin County
- Santa Clara County
- Solano County
- Ventura County

♦ Discipline	Period of Time	Number of Testimonies
Forensic Alcohol	1990 – 2002	250+
Controlled Substance	1990 – 2001	200+
Forensic Toxicology	1992 – 1995	5
Clandestine Drug Laboratory Analysis	1995 – 2001	25+
Trace Evidence	1996 – Present	50+
Fibers and Textiles	1996 – Present	15+
Paint and Polymers	1996 – Present	15+
Glass	2007 – Present	15+
Crime Scene and Reconstruction	1996 – Present	40+
Bloodstain Pattern Interpretation	1996 – Present	15+
Gunshot Residue	2002 – Present	35+
Fire Debris Analysis	1996 – Present	15+
Miscellaneous: Physical Fit, Tape, and General Physical and Chemical Analysis	1996 – Present	15+

PROFESSIONAL CERTIFICATIONS AND APPOINTMENTS

♦ Certification

- American Board of Criminalistics (ABC), Professional Competency in Criminalistics, 1999 – *Present*.
- California Department of Public Health Service, Forensic Alcohol Supervisor, 1991 - 2001.

♦ Appointment

- Chemistry / Instrumental Analysis Scientific Area Committee's (SAC's) Materials (Trace) Subcommittee within the Organization of Scientific Area Committees (OSAC) sponsored by the National Institute of Standards and Technology (NIST), 2014 – *Present*.

PROFESSIONAL AFFILIATIONS

- ♦ American Society of Trace Evidence Examiners (ASTEE), Emeritus Member, 2010 – *Present*.
- ♦ California Association of Crime Lab Directors (CACLD), Regular Member, 2009 – *Present*.
- ♦ California Association of Criminalists (CAC), 1990 – 2014.
- ♦ Northwest Association of Forensic Scientists (NWAFS), 1993 – 2012.
- ♦ Clandestine Laboratory Investigating Chemists (CLIC), 1993 – 2005.

INSTRUCTION

- ◆ Lecturer, Interpretation of Infrared Spectra, Fiber Identification and Comparison, California Criminalistics Institute (CCI), 1999 – 2015.
- ◆ Instructor, Sexual Assault Response Team (SART) Training Course, 2001 – 2005.
- ◆ Instructor, Sexual Assault Evidentiary Exam Training for Health Care Providers, California Medical Training Center, 2001 – 2018.
- ◆ Lecturer, Blood Pattern Interpretation: The Reconstruction of an Infant Homicide, Bloodstain Pattern Interpretation Course, California Criminalistics Institute (CCI), 2002.
- ◆ Lecturer, Environmental Crime Scene Investigation Course, University of California – Riverside, University Extension, 2003.
- ◆ Instructor, Analytical Instrumentation in the Criminalistics Laboratory, University of California – Davis, Master of Forensic Science Program, 2004.
- ◆ Instructor, Police Office Standard and Training (POST) – Institute of Criminal Investigation (ICI) Homicide Course, 2005 – Present.
- ◆ Lecturer, Impression Casting and Fire Debris Analysis, Sacramento-Sierra Regional Arson Task Force, 2012.
- ◆ Instructor, Glass Examination and Comparison, California Criminalistics Institute (CCI), 2015 – Present.

PRESENTATIONS, PUBLICATIONS, AND RESEARCH

◆ Presentations

- Technical Program Presenter, Maples Case: An Unusual Physical Match, California Association of Criminalists (CAC) Conference, 1997.
- Technical Program Presenter, “Gunshot Residue: An Airborne Particle Retention Study,” California Association of Criminalists (CAC) Conference, 2004.
- Presenter, Fire Debris Analysis / Evidentiary Issues, Sacramento-Sierra Arson Task Force, 2010.
- Panelist, Laser Ablation: Forensic Tool for the End User, Lasers: Advancing Security, Health and Justice, United States Congressional Luncheon Briefing, The American Chemical Society and The Congress Project and Optical Society of America, 2010.
- Panelist, When Jigsaw Puzzle Enthusiasts Are Not Enough: National Institute of Justice (NIJ) Research into the Elemental Analysis of Glass, National Institute of Justice (NIJ) Conference, 2011.
- Technical Program Presenter, Glass Evidence: From the Crime Scene to the Crime Lab and Beyond, Pittcon Exposition and Conference, 2012.
- Technical Panelist, A Local Laboratory’s Perspective on Trace Evidence Databases, Trace Evidence Data Workshop, National Institute of Standards and Technology (NIST), 2016.
- Technical Program Co-Presenter, Trace Evidence: More than Meets the Eye, California State Division of the International Association for Identification (CSDIAI) Training Seminar, 2017.
- Technical Program Co-Presenter, Interesting Cases Involving Trace Evidence, California State Division of the International Association for Identification (CSDIAI) Training Seminar, 2017.
- Co-Presenter, Trace Evidence for Investigators, 2017.
- Program Speaker, A Local Forensic Laboratory’s Perspective on Implementing Cutting Edge Technology, Forensic Science Research Innovation to Implementation Symposium (RI2I), National Institute of Standards and Technology (NIST), 2019.
- Co-Presenter, Trace Evidence: Glass and Organization of Scientific Area Committee (OSAC) Trace Materials Committee Overview, Congress of Criminalist Conference, California Department of Justice (DOJ) – Bureau of Forensic Services (BFS), 2019.
- Presenter, How Paint/Polymer & Glass Made the Case, Current Trends in Forensic Trace Analysis, 2020 Online Forensic Symposium, The Center for Forensic Science Research and Education (CFSRE), 2020.

◆ Publications

- Cross-Validation and Evaluation of the Performance of Methods for the Elemental Analysis of Forensic Glass by μ -XRF, ICP-MS, and LA-ICP-MS, Trejos, T., Koons, R., Becker, S., Berman, T., Buscaglia, J., Duecking, M., Eckert-Lumsdon, T., Ernst, T., Hanlon, C., Heydon, A., Mooney, K., Nelson, R., Olsson, K., Palenik, C., **Pollock, C.**, Rudell, D., Ryland, S., Tarifa, A., Valadez, M., Weis, P., Almirall, J., *Analytical and Bioanalytical Chemistry*, 405.16 (2013): 5393-5409.
- Forensic Analysis of Glass by μ -XRF, SN-ICP-MS, LA-ICP-MS and LA-ICP-OES: Evaluation of the Performance of Different Criteria for Comparing Elemental Composition, Trejos, T., Koons, R., Becker, S., Berman, T., Dalpe, C., Duecking, M., Buscaglia, J., Eckert-Lumsdon, T., Ernst, T., Hanlon, C., Heydon, A., Mooney, K., Nelson, R., Olsson, K., Schenk, E., Palenik, C., **Pollock, C.**, Rudell, D., Ryland, S., Tarifa, A., Valadez, M., Weis, P., van ES, A., Zdanowicz, V., Almirall, J., *Journal of Analytical Atomic Spectrometry*, 28 (2013): 1270-1282.
- Forensic Glass Analysis by LA-ICP-MS: Assessing the Feasibility of Correlating Windshield Composition and Supplier, Dodds, Abbeigayle J., **Pollock, Edward M. "Chip"**, Land, Donald P., *National Institute of Justice (NIJ) Grant Award No: 2004-IJ-CX-K007*.
- An Inter-Laboratory Evaluation of LA-ICP-MS Analysis of Glass and the Use of a Database for the Interpretation of Glass Evidence, Tricia Hoffman, Ruthmara Corzo, Peter Weis, **Edward Pollock**, Andrew van Es, Wim Wiarda, Aleksandra Stryjnik, Hendrik Dorn, Alex Heydon, Eva Hoise, Sandrine Le Franc, Xie Huifang, Begonia Pena, Thomas Scholz, Jhanis Gonzalez, Jose Almirall, *Forensic Chemistry*, 11 (2018): 65-76.
- Interlaboratory Evaluations of the Performance of Elemental Analytical Methods for the Forensic Analysis and Comparisons of Electrical Tapes, Claudia Martinez-Lopez, Tatiana Trejos, Sally Coulson, John Goodpaster, Katherine Igowsky, Feliz Kuczelinis, Andria Mehlretter, **Edward Pollock**, Ulrich Simmross, Robyn Weimer, Peter Weis, Jose R. Almirall, *Forensic Chemistry*, 12 (2019): 66-77.
- Interpretation of Chemical Data from Glass Analysis for Forensic Purposes, Anuradha Akmeemana, Peter Weis, Ruthmara Covzo, Daniel Ramos, Peter Zoon, Tatiana Trejos, Troy Ernst, **Chip Pollock**, Ela Bakowska, Cedric Neumann, Jose Almirall, *Journal of Chemometrics, CEM 3267*, (2020).
- Development of Tailor-Made Inorganic Gunshot Residue (GSR) Microparticle Standards and Characterization with a Multi-technique Approach, Korina Meuking-Hoggatt, Claudia Martinez, Courtney Vauder Pyl, Emily Heller, **Edward "Chip" Pollock**, Luis Arnoyo, Tatiana Trejos, *Talanta Journal, Article #121984*, (2020).
- Determination of Seventeen Major and Trace Elements in New Float Glass Standards for Use in Forensic Comparisons using Laser Ablation Inductively Coupled Plasma Mass Spectrometry, Jose Almirall, Anuradha Akmeemana, Katelyn Lambert, Ping Jiang, Ela Bakowska, Ruthmara Corzo, Claudia Martinez Lopez, **Edward "Chip" Pollock**, Katrin Prasch, Tatiana Trejos, Peter Weis, Wim Wiarda, Huifang Xie, Peter Zoon, *Spectrochimica Acta Part B: Atomic Spectroscopy*, 179 (2021): 106-119.

◆ Research

- Laboratory Discrimination of Toothpastes by Pyrolysis Gas Chromatography Mass Spectrometry (Master's Thesis Technical Advisor and Supervisor), 2004.
- Forensic Glass Analysis by ICP-MS: Sample Introduction Techniques (Master's Thesis Technical Advisor and Supervisor), 2005.
- Forensic Glass Analysis: Elemental Profiling of Automotive Windshield Glass (Master's Thesis Technical Advisor and Supervisor), 2005.
- Profiling of Bulk Household Carpet Fibers (Master's Thesis Technical Advisor and Supervisor), 2012.
- House Standards and the Forensic Analysis of Polymers Using Laser Ablation Inductively Coupled Plasma Mass Spectrometry (Master's Thesis Technical Advisor and Supervisor), 2012.

♦ **Research, *continued***

- NIJ-Sponsored Research Project on the Elemental Analysis of Glass, Elemental Analysis of Forensic Evidence Working Group (EAWG) Research Member, *2009 – 2012*.
- NIJ-Sponsored Research Project on Glass Evidence Interpretation, Glass Interpretation Working Group (GIWG) Research Member, *2016 – Present*.
- Determining the Distribution Capabilities of Tire Analysis Using Pyrolysis-Infrared Spectrometry (Py-FTIR), Pyrolysis Gas Chromatography Mass Spectrometry (Py-GC-MS), and Scanning Electron Microscopy with Energy Dispersive Spectroscopy (SEM-EDS) (Master's Thesis Technical Advisor and Supervisor), *2020*.

OTHER QUALIFICATIONS

- ♦ ANSI/ASQ National Accreditation Board (ANAB) Technical Assessor, ISO/IEC 17025 and ISO/IEC 17020, *2017 – Present*.