

**GLENN M. LANGENBURG**

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**TITLE** Forensic Scientist, Consultant

**EDUCATION** University of Lausanne, Switzerland; Ph.D. Forensic Science, 2012  
University of Minnesota, M.S. Analytical Chemistry, 1999  
Michigan State University, B.S. Forensic Science, 1993

**EXPERIENCE**

Aug 2012 – present: Elite Forensic Services, LLC  
Owner, Primary Consultant, Instructor

Sep 2013 – Oct 2018: Minnesota Bureau of Criminal Apprehension Forensic Science  
Laboratory, Drug Chemistry Section Supervisor

Jan 2000 – Sep 2013: Minnesota Bureau of Criminal Apprehension Forensic Science  
Laboratory, Latent Print Section

Jan 2003 – Dec 2010: Metropolitan State University, Community Faculty

Sep 2003 – May 2005: Hamline University, Adjunct Faculty

Jun 1995 – Jan 2000: Pace Analytical Inc./3M Environmental Laboratory, Research Chemist

May 1993 – Sept 1993: Dundee Royal Infirmary Dept. of Forensic Medicine, Toxicology  
Summer Internship

**PROFESSIONAL  
ORGANIZATIONS**

International Association for Identification (IAI)  
National and Minnesota Division membership (since 2000)  
Pattern Evidence SAC (Scientific Area Committee) (2019-2021)  
Canadian Identification Society (CIS) (2002-2013)  
Midwest Association of Forensic Scientists (MAFS) (since 2003)  
SWGFAST (Scientific Working Group for Friction  
Ridge Analysis, Study, and Technology) (2004-2014)  
Fingerprint Society (U.K.), fellow status (2006-2010)  
NIST-NIJ Committee—Expert Working Group on Human Factors in  
Latent Print Analysis (2008-2011)  
NIST-NIJ Committee—Expert Working Group on Human Factors in  
DNA Analysis (2020 to present)

**AWARDS/POSITIONS  
HELD/CERTIFICATIONS**

Status as a certified latent print examiner (IAI) granted May 2003  
Status as a certified fellow of criminalistics (ABC) granted (2011-2020)  
Editorial review board for Journal of Forensic Identification (since 2006)  
Distinguished Member of the IAI Award (2007)  
Recipient of Inaugural IFRG “Roland Menzel Award” (2007)  
Ethics Committee for MAFS (2006-2010)  
MAFS “New Scientist Award” (2002)  
Minn. DPS Forensic Science Lab Service Recognition Award (2002)  
MAFS Latent Print Section Coordinator (2002-2011)  
IAI Committee—Standardization II Committee (2008-2010)  
IAI Standing Committee, Science & Practices: Forensic Management  
(Chair, since 2018)

**TRAINING**

**In-house Training at the BCA (core training)**

Latent Print Training (Jan 2000-Nov 2000)	Approx. 1700 hours
Courtroom Testimony Workshop (Nov 2001)	24 hours
Crime Scene Training (May 2000-present)	Approx. 500 hours

**External Courses Attended**

Advanced Fingerprint Courses	Approx. 125 hours
Advance Bloodstain Pattern Analysis Courses	Approx. 85 hours
ASCLD-LAB-International Assessor Training Course	40 hours
Crime Scene related workshops	Approx. 15 hours

**Conferences Attended**

IAI Educational Conferences (local and nat'l) (2000-2022):	Approx. 1000 hours
Other Forensic Conferences in the U.S.	Approx. 400 hours
International Forensic Conferences	Approx. 440 hours
Legal Conferences and Seminars	Approx. 125 hours

**Professionally Taught Courses and Workshops**

Over 5000 hours of instruction with over 3100 students  
Taught in U.S., Canada, U.K., China, Taiwan, Brazil, Switzerland, Denmark, Australia, France

## PUBLISHED WORKS

- Langenburg, G. (2023) Analysis, Comparison, Evaluation, and Verification (ACE-V). Max M. Houck (ed.) *Encyclopedia of Forensic Sciences, 3rd Ed*, pp. 151–156. Oxford: Elsevier.
- Kennedy, K; Heaton, C; Langenburg, G; Francese, S; Pre-validation of a MALDI MS proteomics-based method for the reliable detection of blood and blood provenance. *Scientific Reports*, 2020; 10:17087. <https://doi.org/10.1038/s41598-020-74253-z>.
- Deininger, L; Francese, S; Clench, M.R; Langenburg, G; Sears, V; Sammon, C. Investigation of infinite focus microscopy for the determination of the association of blood with fingerprints. *Science & Justice*, 2018; 58:397-404.
- Dror, I; Langenburg, G. “Cannot Decide”: The Fine Line Between Appropriate Inconclusive Determinations Versus Unjustifiably Deciding Not To Decide. *J For Sci*, 2018; 64(1):10-15.
- Langenburg, G. Addressing potential observer effects in forensic science: a perspective from a forensic scientist who uses linear sequential unmasking techniques. *Australian J of Forensic Sci*, 2017; online, doi: 10.1080/00450618.2016.1259433.
- Patel, E.; Cicatiello, L.; Langenburg, G.; Francese, S.; et al. A proteomic approach for the rapid, multi-informative and reliable identification of blood. *Analyst* 2015, doi: 10.1039/c5an02016f.
- Langenburg, G.; Hall, C.; Rosemarie, Q. Utilizing AFIS searching tools to reduce errors in fingerprint casework. *For Sci Intl* 2015, 257, 123-33.
- Neumann, C.; Champod, C.; Yoo, M.; Genessay, T.; Langenburg, G. Quantifying the weight of fingerprint evidence through the spatial relationship, directions and types of minutiae observed on fingerprints. *For Sci Intl* 2015, 248, 154-171.
- Langenburg, G.; Bochet, F.; Ford, S. A Report of Statistics from Latent Print Casework. *Forensic Science Policy & Management: An International Journal* 2014, 5(1-2), 15-37.
- Sheets, H.D., Gross, S., Langenburg, G., Bush, P.J., and Bush, M.A. Shape measurement tools in footwear analysis: A statistical investigation of accidental characteristics over time. *For Sci Intl*, 2013, 232 (1-3), 84-91.
- Neumann, C; Champod, C; Yoo, M; Genessay, T; Langenburg, G. Improving the Understanding and the Reliability of the Concept of “Sufficiency” in Friction Ridge Examination. Final Report to U.S. Dept. of Justice-National Institute of Justice, Washington, D.C. July 2013. Award Grant 2010-DN-BX-K267.
- Langenburg, G; Neumann, C; Meagher, S; Funk, C; Avila, J. Presenting Probabilities in the Courtroom: A Moot Court Exercise. *Journal of Forensic Identification* 2013, 63(2), 424-488.
- Langenburg, G. The consideration of fingerprint probabilities in the courtroom. *Australian Journal of Forensic Sciences*, 2013, doi:10.1080/00450618.2013.784360.
- Langenburg, G; Hall, C. "Friction Ridge Skin: Comparison and Identification" in Wiley Encyclopedia of Forensic Science, eds A. Jamieson and A.A. Moenssens, John Wiley: Chichester. DOI: 10.1002/9780470061589.fsa355.pub2. Published 15th March 2013.
- Praska, N; Langenburg, G. Reactions of latent prints exposed to blood. *Forensic Sci Intl*, 2013, 224, 51-58.
- Langenburg, G. A Critical Analysis and Study of the ACE-V Process. PhD thesis, Ecole des Sciences Criminelles / Institut de Police Scientifique, Université de Lausanne, Switzerland, 2012.
- Langenburg, G., Champod, C., Genessay, T. Informing the Judgments of Fingerprint Analysts Using Quality Metric and Statistical Assessment Tools. *Forensic Sci Intl*, 2012, 219 (1-3), 183-198; doi:10.1016/j.forsciint.2011.12.017.

- Neumann, C; Langenburg, G, et al. Operational benefits and challenge of the use of fingerprint statistical models: a field study. *Forensic Sci Intl*, **2011**, 212, 32-46.
- Langenburg, G; Champod, C. The GYRO System—A Recommended Approach to More Transparent Documentation. *Journal of Forensic Identification* **2011** 61 (4), 373-384.
- Mnookin, J., Langenburg, G, et al. The Need for a Research Culture in the Forensic Sciences. *UCLA Law Review*, **2011**, 58 (3), 725-779.
- Langenburg, G. Scientific Research Supporting the Foundations of Friction Ridge Examinations”, Chapter 14 in *The Fingerprint Source Book*; Eds.: McRoberts, A; Fitzpatrick, F., U.S. Department of Justice, National Institute of Justice, Washington, D.C., **2011**.
- Langenburg, G., Champod, C., Gennessay, T. Jones, J. Informing the Judgments of Fingerprint Analysts Using Quality Metric and Statistical Assessment Tools, Summary Report to the Midwest Forensics Resource Center. Midwest Forensic Resource Center (MFRC) Research and Development Program Summary, 2010, November, 42-44.
- Dror, I, Langenburg, G., et al. Cognitive issues in fingerprint analysts: inter- and intra-expert consistency and effect of a ‘target’ comparison. *Forensic Sci Intl*, 2010, 208, 10-17.
- Langenburg, G. Friction Ridge Skin: Comparison and Identification. In *Wiley Encyclopedia of Forensic Science*, eds. Jamieson, A; Moenssens, A. John Wiley & Sons, Ltd, U.K., 2009.
- Langenburg, G; Champod, C; Wertheim, P. Testing for potential contextual bias effects during the verification stage of the ACE-V methodology when conducting fingerprint comparisons” *J Forensic Sci* 2009, 54 (3), 583-590.
- Langenburg, G. A performance study of the ACE-V process: A pilot study to measure the accuracy, precision, repeatability, reproducibility, and biasability of conclusion resulting from the ACE-V process, *J Forensic Identification* **2009**, 59 (2), 219-257.
- Langenburg, G. Deposition of Bloody Fingermarks” *J Forensic Ident.* **2008** 58 (3), 355-389.
- Langenburg, G. Letter to Editor re: Saks and Koehler “The Coming Paradigm Shift in Forensic Science”, *Science*, 3 Feb **2006**, vol 311.
- Langenburg, G. A Report of Latent Print Examiner Accuracy During Comparison Training Exercises” *J Forensic Identification* **2006**, 56 (1), 55-93.
- Langenburg, G. “Ask the Expert” column for *Scientific American*, 292 (5), May **2005**.
- Langenburg, G. Pilot Study: A Statistical Analysis of the ACE-V Methodology—the Analysis Stage,” *J Forensic Identification* **54** (1), **2004**, 64-79.
- Langenburg, G. Defense Against the Dark Arts: Defending Against the Critic’s Curse, *The Chesapeake Examiner* **2003**, 41, Spring volume.