



FORENSIC LITERATURE THESIS

LITERATURE THESIS

Title	: <i>Definition of background level of traces</i>
Keywords	: Background, activity level, evidence interpretation
Forensic Expertise Area	: Multidisciplinary/Statistics
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SHORT DESCRIPTION

Today, activity level examinations occur more frequently because they address questions at the level more relevant to the court: What activity has led to the trace's deposition? At activity level, the forensic scientist must assess the likelihood of their findings concerning two events. The assessment of these likelihood ratios requires more information such as background distributions and probabilities of transfer, persistence and recovery under different circumstances.

It is important to know what variables should be considered but also how to define them correctly. There is no uniform manner across multiple forensic disciplines to define background level. For example, background level can be defined as coming from an unknown source (e.g. background DNA) or coming from a known source due to an innocent activity. This lack of uniformity leads to confusion amongst forensic scientists and practitioners.

We are looking for a student who would like to establish a unequivocal definition for the background level of traces and perhaps for more variables such as transfer, persistence and recovery. Ideally, the outcome would be one definition applicable to all forensic disciplines.

REFERENCES

- 1) R. Cook, I. W. Evett, G. Jackson, P. J. Jones, and J. A. Lambert, "A hierarchy of propositions: Deciding which level to address in casework," *Sci. Justice - J. Forensic Sci. Soc.*, 1998.
- 2) D. Taylor, B. Kokshoorn, and A. Biedermann, "Evaluation of forensic genetics findings given activity level propositions: A review," *Forensic Sci. Int. Genet.*, vol. 36, pp. 34–49, 2018.

3) A. Biedermann et al., "Evaluation of forensic DNA traces when propositions of interest relate to activities: Analysis and discussion of recurrent concerns," *Front. Genet.*, vol. 7, no. DEC, pp. 1–12, 2016.

REQUIRED/RECOMMENDED EXPERTISE

- Basic understanding of transfer and persistence of traces.
- Basic understanding in statistics and familiarity with the Bayes methodology.