



D1 Development of a Science Based Fingerprint Curriculum

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After attending this presentation, attendees will be introduced to a project that is developing a science-based curriculum addressing the recommendations set forth in the National Academy of Science (NAS) Report.

This presentation will impact the forensic science community by demonstrating the process of a first-principles approach to forensic fingerprint curriculum.

In order to fully understand and appreciate the study of friction ridge skin and its resultant impressions, it is necessary to have a basic understanding of the fundamental principles upon which this discipline rests. Forensic science can be traced back to the comparative methods proposed by Aristotle. The later writings of Georges Cuvier and Thomas Huxley further supported the utility of comparative methods in science. Ernst Mayr stated in his publication *The Growth of Biological Thought* that “the branches of science that depend on the comparative method are not inferior” to experimental methods (p. 32); however, he also stressed that scientific progress is made “with the introduction of new concepts or improved old ones” (p. 23). Friction skin formation has its foundations in anatomy, physiology, anthropology, and embryology; and through research has evolved to a source of personal identification using the comparative method.

The NAS Report suggested the need for an understanding of the “principles, practices, and contexts of science” (8-1) in conjunction with hands-on training that closely mimics the experiences of forensic practice. It is through “formal education, training, and the proper conduct of research” that the “scientific knowledge, principles, and practices of forensic science disciplines must be based” (8-1). Academic curricula guided by the requirements set forth by organizations such as SWGFAST and ASCLD-LAB are needed.

The goal of the fingerprint curriculum is to be comprehensive, covering core and discipline specific elements, and to include with each module teaching information, learning materials, practical exercises, and assessments. As the curriculum progresses, it will reference the first principles outlined in beginning sections and published materials to insure mastery and include frequent hands-on and interactive lessons. Module topics and lesson objectives will be available to the attendee for review. Once complete, the comprehensive curriculum will be available publicly at no cost for use by practitioners, educators, students, and trainees. The modules are designed to be used independently, in whole or in part, based on the instructors’ goals.

The goal is to provide a course to be included in a forensic science program whose goal it is to produce forensic scientists well versed in science, the law, quality assurance procedures, research, and discipline specific information and techniques. Research has been conducted to gather information regarding curricula in other scientific disciplines, current fingerprint curricula, history of the comparative method, and fingerprint specific history, practice, and ongoing research. The following module topics will be included in the curriculum:

Module 1: Science and First Principles

Module 2: What is a Fingerprint: Anatomical, Physiological, Anthropological, and Embryological Considerations

Module 3: History of Identification Module 4: Classification and Taxonomy

Module 5: Forensic Science and Fingerprints

Module 6: Fingerprint Detection, Visualization, and Preservation Module 7: Comparisons and Conclusions

Module 8: Fingerprints and the Law Module 9: Research and Quality Assurance

Traditionally, fingerprint training has been based on historical or experiential curricula and materials (top-down) rather than from a fundamental starting point and building to actual practice (bottom-up). This new approach will first create an understanding of the science supporting the discipline followed by an incorporation of the practice.

Education, Fingerprint, Curriculum