G64   Modeling Languages in Forensic Pathology

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After attending this presentation, attendees will understand the importance and utility of modern modeling computer techniques in forensic pathology from Microsoft Word® (MS Word), to Microsoft Visio® (MS Visio), to Universal Modeling Language Two (UML2).

This presentation will impact the forensic community and/or humanity by demonstrating the importance and utility of modeling to solving forensic pathology problems.

In forensic informatics, modeling is an underemployed but important computer technique. Models illustrate concepts, analyze processes and relationships, and communicate with efficiency and clarity. Models show the first definitions of processes at their inception; they precede the formal formulation of the computer application. Current computer applications in MS Word®, MS Visio®, and UML2 may be used by forensic scientists to compose models; however, increasing specificity and precision require more study and attention as the applications mature and enlarge.

Models provide computer programmers with the initial structure of their applications; models also work to provide scientists their first formulations of the details of their work. Models act to provide actual representations of concepts and ideas. Referral by scientists to the available models allows the definition of objects and relationships valuable to extension of their thoughts. Such models teach, communicate, illustrate, standardize, lead thinking, require attention, precede other actions, require syntax, provide transmission and transfer, and act to standardize operations. The models by structural and behavioral analysis are classified as class diagrams, package diagrams, object diagrams, use case diagrams, sequence diagrams, collaboration diagrams, state charts, activity diagrams, power diagrams, component diagrams, deployment diagrams, engineering diagrams, flow charts, and brainstorming diagrams.

Current applications providing computer modeling activities have been under formal development by computer scientists for over thirty years and are in their third generation of development. Forensic scientists find modeling possible with the word processing application MS Word®, and MS Visio® which is evolving into a more complex, capable and inexpensive modeling tool. The more advanced UML2 applications have the capacity to create and manage large models over the expanse of large organizations and corporations with the precision and accuracy needed in sophisticated scientific activities. Many commercial scientific modeling applications are available; however, to date no formal set of forensic symbols or diagrams are recognized or developed.

Little formal recognition has been given to modeling in the forensic or pathology literature so that the complexities, multiplicities, and composites inherent in the data often are either ignored or not represented.

Forensic models are limited in number and are without the standardization found in UML2. Note that the development of models is not easy work and requires analytic time and clear conceptualization of ideas. Modeling is blocked by poor definitions and is inefficient when topics are diffuse and poorly understood.

Demonstrations of functional models in forensic scene investigation and forensic pathology are presented.

Forensic Informatics, Modeling Languages, Forensic Death Investigation