



Engineering Sciences Section – 2010

C8 Teaching Forensic Engineering Concepts to Non-Engineering Graduate Students

Alexis N. Sommers, PhD, Tagliatela School of Engineering, University of New Haven, 300 Boston Post Road, West Haven, CT 06516*

After attending this presentation, attendees will have reviewed a successful attempt to educate non-engineering graduate students in forensic engineering basics, applications, and methodology, thereby gaining insight into how to provide an effective orientation to forensic engineering for lawyers, scientists, insurance investigators, manufacturers, and quality assurance professionals.

This presentation will impact the forensic science community by providing a better understanding of forensic engineering will advance the profession and expand its role in the broad economy.

Given that forensic engineers tend to enter the field by a variety of random routes following opportunity and a fondness for detective work, formal instruction is rarely seen in higher education. Yet there is an increasing amount of litigation which demands some forensic engineering input, and hence a need on the part of non-engineers, including forensic scientists, to be familiar enough with forensic engineering to identify characteristic problems, choose suitable consultants, and manage findings as they apply to a particular case. The presentation audience will review a successful attempt to educate non-engineering graduate students in forensic engineering basics, applications, and methodology, thereby gaining insight into how to provide an effective orientation to forensic engineering for lawyers, scientists, insurance investigators, manufacturers, and quality assurance professionals. The assumption is that a better understanding of forensic engineering will advance the profession and expand its role in the broad economy.

Experience at the University of New Haven suggests that forensic engineering needs to have more exposure and utilization in the developing problems of product counterfeiting, system failure, quality breaches, shoddy manufacturing, complex accidents, supply chain malfunctions, and inadequate life cycle performance, all of which tend to culminate in litigation or arbitration. Wider knowledge of forensic engineering may result in faster, more equitable, and more effective case resolution and product improvement. A side effect may be the encouragement of engineers to specialize in forensic work.

Contemporary high levels of accident litigation, increasingly serious quality issues in manufacturing, product counterfeiting in global supply chains, and difficulties in resolving insurance claims due to natural disasters have all focused on a need for more forensic engineering talent and the ability to put it to use in resolving civil lawsuits, both real and threatened. Efforts at the University of New Haven are described which attempt to make forensic science and other non-engineering graduate students familiar with forensic engineering techniques and practitioners. The goal is to expand their employment options to include law firms, insurance companies, and management and quality consultants. The goal was not to train forensic engineers but to give non-engineers a feel of what forensic engineers do and how to select and work with one to serve a particular client or project. Specific coursework was designed and implemented, with some success, which is delineated. A four-course concentration is described, half of which is offered annually. Enrollments, issues, and instructional problems are described, together with an assessment of the effort and its likely future path. The courses are a joint effort of the Department of Forensic Science and the Tagliatela College of Engineering.

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