Article: The Scientific Method Solves a Slip and Fall Litigation Claim

(By Dr Gerard A. Macri, Expert Witness)

A slip or trip and fall accident can occur in almost any location, from a wet floor in the grocery store to a dangerously uneven sidewalk. Not every situation gives rise to legal liability, but valid slip and fall claims are filed and settled every year.

Oftentimes the defect in or an obstruction on the walking surface causing the person to slip or trip (and consequently lose balance and fall) is obvious by inspection and is physical in nature: uneven surface, loose step, or some other structural irregularity. If the surface is wet or slippery but otherwise structurally sound this condition could also lead to a slip and fall accident.

When a slip and fall occurs inside a property owner's premises and the presence of a slippery substance is discovered on the victim's shoes and/or clothing, the liability claim now becomes more challenging for both the plaintiff's and the defendant's attorneys. Did the slippery substance found on the victim originate outside the defendant's premises (over which he has no control or responsibility) or inside the premises (caused by some substance on the premises contaminating the floor)?

A shopper who slipped and fell inside a retail supermarket claimed she had slipped on some substance on the supermarket floor. The retailer claimed the shopper's shoes had picked up oil and grease from outside the store that was the cause for the slip and fall. The attorney for the claimant submitted the plaintiff's clothing (not the shoes), which had picked up portions of the slippery substance when the plaintiff fell on the supermarket floor, to a chemical expert witness.

The expert witness sent an article of the plaintiff's clothing to a forensic laboratory for infrared (IR) and microscopic analysis. IR is a non-destructive method of analysis which measures the absorption of IR radiation of various functional groups on organic molecules which uniquely characterize specific organic substances. This produces an IR spectrum which is a "fingerprint" that differentiates different classes of organic compounds. For example, the IR spectrum of common motor oil has a distinctly different fingerprint spectrum than a food or protein even though both are organic species, produce an IR spectrum, and in sufficient quantities could produce a slippery surface on a vinyl or tile floor.

The laboratory report presented conclusive evidence from both analytical methodologies:

The IR spectrum indicated the presence of both a protein and fat molecular structure while the microscopic analysis exhibited the definite presence of protein cells. No indications of hydrocarbon oil was discovered.

The expert witness presented his findings to the attorney and further gave corroborating testimony in court to support the findings.

The jury ruled in favor of the plaintiff and damages were awarded. It was not until after the trial ended that the plaintiff's attorney disclosed to the expert witness that the plaintiff fell in the dairy aisle by the yogurt section. This fact further validated the chemical evidence and underscored the essential role of science behind an otherwise mundane slip and fall accident.