Technological Advancements in the FDLE Footwear and Tire Discipline - Timeline

1980s through the late-1990s

- Foster Freeman released the SICAR/Solemate and Treadmate databases. These databases consisted of thousands of images of various brands of shoes and tires that could be researched digitally. Prior to this, books and onsite research were the only options.
- Historically, Plaster of Paris was the main option to recover three dimensional impressions. Plaster took a long time to dry and was soft and easily scratched. Dental stone was later introduced and adopted, due to its high strength and ease of use.

2000s

- New enhancement techniques became available to use on certain type of impressions.
    - Early 2000s - The use of Leucocrystal Violet became available to enhance blood impressions on porous and non-porous items of evidence without background staining. This cannot be used on items with potential DNA evidence.
    - Mid 2000s saw the adaptation of digital photography, which allowed for a view of the images as taken in real time. This also paved the way for digital image processing and enhancement with photography editing software (Adobe Photoshop).
    - 2006: FDLE began using HFE Ninhydrin, which prevented ink from running on the items that were sprayed. This provided better results than original ninhydrin formulations.
    - 2007: Amido Black became available and was used on blood impressions. This gave a great contrast to the blood impression without leaving background staining, contrary to the traditionally utilized Coomassie Blue.
- In 2009/2010 “Footwear and Tire”, formally known as Impression Evidence, became an independent discipline with an exclusive training program.
    - 2012: Acid Yellow 7 became available and was used on porous and non-porous items that contain blood. It is useful for items with dark surfaces, because Acid Yellow 7 fluoresces under an alternate light source.
    - 2014: GLScan®, a device specifically made for imaging gelatin lifters at a very high resolution versus traditional photography, was purchased. Actual items of evidence can also be captured with the GLScan. Gelatin lifters became used significantly more often on items that did not enhance/develop with chemical processing. Gelatin lifters can lift indented footwear or tire impressions from paper, and in conjunction with GLScan capture, the techniques provided recovery of evidence not previously accessible.
    - 2014: Ammonium Thiocyanate was introduced to enhance faint impression on items with residue from soil. Ammonium Thiocyanate reacts with the iron in the soil, giving a reaction that produces a red color that increases contrast in the impression.