



Jurisprudence Section - 2012

E32 Who Killed Ruby Jean Johnson? Unleashing the Power of Y-STRs

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After attending this presentation, attendees will understand how, despite statistical limitations, the use of Y-STR DNA testing can identify the perpetrator in a rape/homicide case.

This presentation will impact the forensic science community by illustrating the development of Y-STR DNA testing by the New York City Office of Chief Medical Examiner's Forensic Biology lab and presenting its first use in a courtroom, leading to the conviction of Elbert Mitchell for the rape and murder of an 81-year-old woman.

On June 26, 1998, the home health aide for 81-year-old Ruby Jean Johnson was worried. She had been unable to enter Ms. Johnson's Harlem apartment for two days. Police climbed in through a fire-escape window and found Ms. Johnson's body. She was bent double over the bathtub, with a dog's leash wrapped around her neck and a fur coat draped over her body. Decomposition was well underway. Based on her state of undress and dried secretions on her thighs, police suspected she had been sexually assaulted. Although the apartment was cluttered with a lifetime's worth of stuff, police also believed the killer stole property.

A fingerprint in the bathroom led to suspect Elbert Mitchell, a convicted felon who claimed he often helped Ms. Johnson around the house. DNA testing was still pending when Mitchell was first questioned two weeks after the crime, and he vehemently denied harming Ms. Johnson, who he described as "like a mother" to him. He did offer up another suspect; however, a neighborhood man who did maintenance work around the building, and who was easily identified by police.

Meanwhile, serological testing was positive for semen on vaginal, anal, and oral swabs, as well as on the fur coat, but only the victim's DNA was detected through multiplex STR testing. Fearing that any male DNA was "masked" by the victim's female DNA, OCME scientists employed a "home brewed" Y-STR kit validated to attempt to identify male DNA on the crime scene evidence. The results were then compared with exemplars from both Elbert Mitchell and the maintenance man.

Prior to trial, defense attorneys made a motion for a *Frye* hearing to exclude the Y-STR results, claiming the science was novel and the statistics unproven. Prosecutors countered that the technology was exactly the same as traditional STR testing, and that statistics, reached through the "counting method," were the same as those used in mitochondrial DNA testing. The prosecution prevailed.

The presentation includes filmed interviews with participants in the case. The investigating detective, who teaches interview techniques to NYPD investigators, explains the secret of getting a suspect to talk. The relationship between strangulation and sexual assault will be explained. The early attempts at Y-STR testing, how results were achieved in this case will be described, as well as the future utility of Y-STRs. Mitchell's videotaped statements are presented, demonstrating his changing explanations as the unfolded evidence, ending with his claim that sex with the 81-year-old disabled victim was consensual. Finally, prosecutors explain how to prove time-of-death, theft of property, and forcible rape when the only witness to the crime is dead.

YSTRs, Homicide, Rape