The Corpus in the Delecti

Dispatch Operator: This is Seattle Area 911. What’s your emergency?

Caller: I umm… I think — I think we found a body.

Dispatch Operator: Excuse me, sir, did you say a body? Is someone hurt?

Caller: Yes…yes I think so. I don't know. It’s old. We were doing construction for a new house and we were digging and we… we found it buried…

Dispatch Operator: Can you tell me where you are?

Caller: It’s a vacant lot… 37230 SE 191st Street, over by Taylor Mountain ju—just southwest of I-90.

Dispatch Operator: All right sir, I have officers headed your way. They should arrive in a few minutes. Stay on the line with me here.

The call came in early on a Thursday morning to the local 911 dispatch from a local construction company who, while excavating a new lot, uncovered what appeared to be a body. First responders arrived promptly and cleared the scene, waiting for evidence specialists to arrive. The local crime scene investigators arrived to a gruesome sight. At the bottom of a ditch, dug for the foundation of the home, laid a badly degraded set of remains, barely recognizable as human or anything for that matter. Fibers, likely the clothes of the victim, laid next to the body, which was missing its head. Lead investigator Detective Martin ordered the team to spread out across the property and scan every inch for the head. The team found the head about 20 meters away from the body in a rocky alcove, covered by only a few fist sized rocks. The evidence was put into the proper collection bags and transported to the Washington State Crime Lab, and the
body and head were transported to the Harborview Medical Center in Seattle, earmarked for Dr. Katherine Taylor.

Dr. Taylor, King County’s medical examiner and a forensic anthropologist by trade, received the body late that Thursday afternoon and started her work on identifying the body (King). Her first step was to ensure that the body was human and not another anatomically analogous creature, such as a bear or a deer, which are commonly mistaken for human remains. Dr. Taylor looked at the bones to make this determination. Based on her interpretation of the structure of the bones, including the large cranium and the bell-shaped ribcage in her analysis, she determined that the remains were human (Vance). She jotted her notes and gave Detective Martin a quick ring, letting him know that he should anticipate running this investigation as a potential homicide.

Dr. Taylor’s next goal was to find out as much as she could about the victim in front of her: sex, age at death, when death occurred, cause of death, ethnic decent, height, distinguishing or unique anatomical features or prostheses, and anything else that could be used to identify the person who laid on the table in front of her (Vance).

The skull and pelvis are good markers for sex determination. The skull displayed a gracile super orbital ridge and a vaulted frontal bone. The chin was thin and pointed and the occipital protuberance was on the smaller side. The pelvis showed both a wide subpubic angle and a wide greater sciatic notch. The slim, graceful head and wide pelvis clearly indicated to Dr. Taylor
that the remains were female (Vance). The skull had traditional markers for European ancestry, namely the characteristic aviator-shaped orbital sockets as well as many of the 29 markers used for ethnic determination (Vance). The third molar (wisdom teeth) had yet to erupt and the epiphyseal markers (growth plates) had not yet fused completely. This indicated that the victim's age at death was likely somewhere between 17—21 years (Vance). The femur was whole, which was a lucky break because it is the best bone in the body to estimate height. Based on the length of the femur, the actual height of the victim was somewhere between 5’5’’ and 5’8’’ (Vance). Through specific fractures on the cervical vertebrae and the hyoid and the degradation of the body, Dr. Taylor was able to determine the cause of death to be strangulation. Based off of the degradation of the body, the victim died approximately 40 years ago.

Dr. Taylor’s analyzation of the body gave investigators a profile of the victim: a caucasian female, approximately 5’5’’ to 5’8’’ in height, in her late teens or early twenties, killed approximately 40 years ago by means of strangulation. Chills crawled down the spine of Detective Martin when he read the medical examiner’s report. It reminded him of the MO, or modus operandi, of an evil man who ravaged the Northwest four decades ago.

Ted Bundy. His name draws fear and horror from the residents of the Pacific Northwest to this day, even though he was euthanized more than thirty years ago and hasn't been in the Northwest for about a decade longer. Bundy killed young, beautiful women in the PNW for throughout the 1970s. He confessed to many of the murders, but he is suspect in many unsolved disappearances during his killing spree there, so no one knows his true body count. Bundy targeted pretty, young women with long hair who all resemble Stephanie Brooks, Bundy’s first serious girlfriend. Bundy would use a ruse to abduct the women at one location, often pretending to be injured or in need of some assistance, then at a second location rape and strangle the
women to death. After the women died, Bundy would care for and engage in sexual acts with the dead bodies. After a time he would lose interest in the decaying corpses, so he would dismember the women and dump the pieces at a third location (Ted). One of his favorite dumping grounds was the remote area around Taylor Mountain.

The medical examiner's report sounded a lot like the description of Rita Lorraine Jolly, a girl from West Linn, OR who went missing in June of 1973 and is suspected to have been a victim of Bundy (Manzano). Rita was a 5'6” 17-year-old caucasian female and was last seen wearing a brown Pendleton Skirt (Forensic). Could the clothes found near the body help determine if the victim was Rita?

The fibers from the clothing found buried near the body were taken by a lab tech and observed under a microscope. The fibers were found to be indistinguishable, which mean that they all came from the same piece of clothing. The fibers were rough and clearly dyed brown, which indicated that they were composed of an organic substance, wool, for instance. This is consistent with what would be seen from a brown Pendleton skirt, like the one the Rita was last seen wearing. However, this is not conclusive evidence, but circumstantial, because Rita wasn't the only person in the 70s who wore a brown Pendleton skirt. Therefore, it cannot be used to identify the body. Detective Martin had to find some other way to identify her, so he turned to DNA.
Detective Martin was elated when investigators found out that Rita’s DNA was registered with the federal law enforcement database because there was the potential they could identify the victim. Detective Martin ordered the lab techs to run an immediate DNA profile on the victim and compare it to Jolly’s DNA. Due to the age and the degradation of the bodily tissues, the techs ran their profile using mtDNA because it is readily available in bones and is more resilient to decay over time. The DNA from the victim was taken and amplified through a polymerase chain reaction or PCR. PCR takes a mixture of DNA primers, which selects the sequence of DNA to be replicated; nucleotides, which are the building blocks of DNA that has of four different forms A, T, G, and C; polymerase, which attaches complementary nucleotides to separated strands of DNA; and DNA and runs the mixture through 3 repeating steps: denaturing, annealing, and elongation. Denaturing takes place at near boiling temperatures, which separates the strands of DNA from one another. This step opens up the DNA in preparation for adding complementary nucleotides. Annealing is when the primers bind to the individual strands of DNA, which requires lower temperatures (around 65 degrees Celsius). Once the primers are in place, the temperature rises to just over 70 degrees Celsius and the nucleotides begin to bond to the strands of DNA in a process called elongation. The process of denaturing, annealing, and
elongation is repeated many times, often somewhere around 30, to create many copies of the targeted region of DNA (PCR).

With enough DNA, the sequence was then derived using a technique called Sanger sequencing. There is only one type of primer mixed in, so the replication takes place in only one direction. Included in the mix of regular A, T, C, and G nucleotides, there are also some special nucleotides fluoresced for different colors based on whether it is an A, T, C, or G nucleotide. These special nucleotides are chain terminating, which means that the chain will replicate until it uses a fluoresced nucleotide which stops replication of that strand. This mixture is then run through a PCR and after enough replications, there will be a fluoresced nucleotide at every point in the gene that is being sequenced (FIGURE). The fluoresced DNA strands are then sent through a special type of electrophoresis machine. The DNA is pulled by an electric current through glass tubes to a laser-sensor camera. When a fluoresced nucleotide passes the laser, the camera takes a picture and records the color. The smaller strands move faster than the longer ones, so the first nucleotide will come in alone, then strands of two, strands of three, four, five, and so on with the camera capturing the fluorescence of the incoming strands until all the DNA has passed under the camera (Obenrader). This will lead to a graph which is interpreted by a specialist, who double checks for errors, and generates a DNA sequence.

Investigators compared the DNA sequence from the victim and the sequence in the database from Rita and confirmed their suspicions: it was a match. It was a bittersweet win for investigators because they still didn't have anything to concretely explain who killed young Rita, just
speculations and circumstantial evidence that could link Bundy to Rita’s murder, but not enough as far as the law was concerned. Less than a day after confirming that the body in the morgue downstairs was that of young Jolly, the telephone rang in the detective Martin’s office.

Ring…Ring…Ring…

**Martin:** This is Detective Martin of the Seattle Police Department. Who is this?

**Hampton:** This is S.A. Hampton with the FBI. I’m calling to ask why you accessed the DNA file Rita Jolly.

**Martin:** We strongly suspected that a recently uncovered body was Rita Jolly. A DNA comparison confirmed our suspicions.

**Hampton:** So you found the body of Rita?

**Martin:** Yes, we don't have anything on her murderer, though. The body was too far-gone to get anything more than an identity. We have our suspicions though about —

**Hampton:** Bundy.

**Martin:** Yes. How did you know?

**Hampton:** I think we may have some evidence you will be interested in.

SA Hampton went on to tell Detective Martin an unbelievable tale. Twenty years ago, police in Corvallis, OR went to a local storage facility intent on collecting evidence from a serial rapist who had recently moved from the Midwest and was terrorizing the area. One unit was rented under the rapist’s name and police suspected that the unit next-door, which was rented under a pseudonym, was also the property of the serial rapist. The two units were opened and both appeared to contain evidence from messy crimes, maybe even a murder or two. The units were emptied and the evidence was analyzed, but there was a problem. There was no evidence of the serial rapist in the...
second unit: the bloody one. There was evidence of several grievous injuries or messy murders in the second unit and many clear fingerprints from the owner of the unit. One of the investigators recognized the name the second unit was rented under, it was not a pseudonym at all, but the name of one of Ted Bundy’s girlfriends (Bramblett). Detectives ran the fingerprints in the storage unit against those of Bundy and found that they were an irrefutable match. Bundy had torn through Corvallis in the 70s and was known to have murdered one local woman and was suspected of the disappearances of a few others. As soon as the unit was identified as Bundy’s, the evidence was seized by the FBI where the blood was tested and found to belong to 3 victims. The evidence was recorded and put in the federal evidence logs and the investigation went no further as Bundy was over decade dead.

Hampton faxed Martin the 3 DNA sequences from the blood found in the second storage unit. Martin ran downstairs to the forensics lab and ordered an immediate comparison between the known sequence of Rita Jolly and the 3 known victims of Bundy. The flustered tech looked over the sequences and confirmed that one of the sequences from the storage unit was a complete match for Rita Jolly’s DNA.

Hampton walked upstairs to call the Clackamas County Police Department in Oregon to let them know that at long last they could take Rita Jolly’s name off the list of cold cases.
Citations

Bramblett, Sherrie and Lori Shaw. Personal interview. 17 Sept. 2015.


Zhang, Zeng; Li, Mei; He, Jin-Wei; Fu, Wen-Zhen; Zhang, Chang-Qing; Zhang, Zhen-Lin (2013): Sanger sequencing of IFITM5 identified the identical heterozygous c.-14C>T mutation (black arrow) in all the affected patients with IO type V. Figure_3.tif. *PLOS ONE*. 10.1371/journal.pone.0072337.g003.