

**Special Investigations and  
Prosecutions Unit**

**Report on the Investigation into  
The Death of Miguel Espinal**



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NYS Attorney General**

## **EXECUTIVE SUMMARY**

On July 8, 2015, Governor Andrew Cuomo signed Executive Order No. 147 (the “Executive Order”), appointing the Attorney General as a special prosecutor “to investigate, and if warranted, prosecute certain matters involving the death of an unarmed civilian . . . caused by a law enforcement officer.” On December 8, 2015, Miguel Espinal (“Mr. Espinal”) was fatally shot by New York City Police Department (“NYPD”) Officer Garthlette James (“PO James”). Subsequently, Governor Cuomo issued Executive Order No. 147.3, which expressly conferred jurisdiction upon the New York State Office of the Attorney General (“OAG”) to investigate any potential unlawful acts or omissions by any law enforcement officers relating to Mr. Espinal’s death.

Mr. Espinal’s interaction with the NYPD on December 8, 2015 began when PO James and Police Officer Romeo Francis (“PO Francis”), upon viewing the heavily-tinted windows of the vehicle Mr. Espinal was driving, activated the sirens in their NYPD patrol car and attempted to stop Mr. Espinal’s vehicle. Mr. Espinal did not stop, sped away, and collided with civilian cars. As a result of these collisions, PO James, the driver of the police vehicle, continued to pursue Mr. Espinal, who recklessly drove on a major parkway from New York City to Yonkers. The high-speed pursuit ended in Yonkers shortly after the car Mr. Espinal was driving made a U-turn on the parkway – such that his car was heading south in a northbound lane – and collided with three civilian vehicles, struck the highway barrier, and came to a stop. Mr. Espinal then got out of his car and ran into a wooded area. PO James chased him. PO Francis followed as well, but he fell, injured himself, and was not present at the time PO James fired his weapon at Mr. Espinal. Numerous civilian witnesses observed parts of the vehicle pursuit and the collision that ended the high-speed pursuit. No civilian witnesses saw what occurred in the wooded area, which did not have surveillance cameras. PO Francis observed part of the foot pursuit, but he did not witness the actual shooting. The only witness to the shooting is, therefore, PO James.

In an interview with the OAG and the Westchester County Police Department, PO James claimed that, when he caught up to and tried to arrest Mr. Espinal, the two men wrestled, and Mr. Espinal repeatedly attempted to take PO James’s gun. As they wrestled, there were points at which Mr. Espinal was on top of PO James and other points at which PO James was on top of Mr. Espinal. Believing that he would die if Mr. Espinal succeeded in obtaining his gun, and describing himself as physically “spent” following the automobile pursuit, foot chase, and struggle with Mr. Espinal, PO James intentionally fired one shot into Mr. Espinal’s chest, within two feet of Mr. Espinal, while PO James momentarily was on top of and facing Mr. Espinal.

Given that there were no witnesses to the shooting other than PO James, the OAG relied heavily on forensic tests to assess the credibility of PO James’s account. Among other investigative steps, the OAG sought and analyzed (1) the Westchester County Medical Examiner’s Office’s (“Medical Examiner”) autopsy, microscopy, and toxicology records and (2) forensic analysis reports including Firearms, Trace Analysis, Gunshot

Residue, and DNA reports.<sup>1</sup> The OAG determined that these records and reports corroborate PO James's account.

First, the Medical Examiner's Report deemed the cause of death to be a single bullet wound that entered Mr. Espinal's chest. The location of the entry wound corroborates PO James's statement that he fired his gun while facing Mr. Espinal. There were multiple abrasions covering many parts of Mr. Espinal's body. PO James also had abrasions on his body. The abrasions on PO James and Mr. Espinal are consistent with PO James's account that he and Mr. Espinal wrestled with one another in an area heavily overgrown with thorns and brush.

Second, the firearms report shows that, when the fatal shot was fired, the approximate distance between the muzzle of PO James's gun and Mr. Espinal was between 14 and 18 inches, which supports PO James's statement that he was within two feet of Mr. Espinal when PO James fired his gun.

Third, the trace analysis report shows the presence of trace particles consistent with the chemical composition of gunpowder on Mr. Espinal's upper body clothing. The presence of these particles is consistent with Mr. Espinal attempting to wrest PO James's gun from PO James.

Fourth, the primer gunshot residue ("P-GSR") analysis shows that particles consistent with P-GSR were found on both of Mr. Espinal's hands. This forensic evidence supports PO James's claim that Mr. Espinal's hands were in very close proximity to Officer James's gun when he fired it.<sup>2</sup>

The OAG finds that no charges are warranted against PO James. New York State Penal Law Section 35 provides that a police officer is justified in using deadly physical force if the officer: (1) is effecting or attempting to effect an arrest; (2) reasonably believes that the individual committed an offense; and (3) the deadly physical force is necessary to defend the officer or another person from what the officer reasonably believed to be the use or imminent use of deadly physical force. The prosecution must disprove justification.

PO James clearly was attempting to effect an arrest and had a reasonable basis to believe that Mr. Espinal – who, before fleeing on foot, drove at a high speed, went south

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<sup>1</sup> The OAG also (1) conducted several walk-throughs of the incident scene; (2) reviewed photographs and a 360 degree video recording of the incident scene by the Westchester County Police Department; (3) reviewed police radio and 911 recordings relating to the incident; and (4) interviewed civilian, law enforcement, and EMT witnesses to the vehicle pursuit, collision, medical treatment of Mr. Espinal or shooting aftermath.

<sup>2</sup> The OAG also attempted to determine whether Mr. Espinal's DNA was on PO James's weapon or holster. As explained further below, the testing was inconclusive, because the genetic material present on the DNA swabs of the weapon and holster was minimal. For instance, there was only "limited" and "moderate" support for the conclusion that PO James's DNA was a part of the mixture taken from his own gun's grips and holster, respectively.

in a northbound lane, and struck three civilian cars – had committed an offense (e.g., Reckless Endangerment in the First Degree, Leaving the Scene of a Property Damage Accident, and/or Operating a Vehicle with Improperly Tinted Windows).<sup>3</sup> PO James claims that he feared for his life and shot Mr. Espinal because Mr. Espinal was wrestling against PO James and trying to take PO James’s gun. The autopsy report and forensic evidence corroborate PO James’s account. Indeed, the investigation uncovered no evidence contradicting PO James’s account that there was a struggle between the two men for his gun immediately prior to the fatal shot. Further, Mr. Espinal’s failure to stop initially, his decision to flee in the car he was driving, his reckless driving that endangered numerous civilians on the highway, and his flight on foot suggest that he was willing to take steps to evade arrest that placed others at risk of harm or death. Mr. Espinal’s dangerous conduct prior to entering the wooded area lends credibility to PO James’s claim that he reasonably believed that he was in danger of Mr. Espinal’s imminent use of deadly force.

In sum, we conclude that the forensic evidence and the totality of the circumstances support PO James’s account and that, in any event, the evidence certainly does not provide any basis for the OAG to disprove – as it must under the law – that PO James reasonably believed that he was in danger of the imminent use of deadly force.

Executive Orders No. 147 and 147.3 provide that the OAG may offer “any recommendations for systemic reform arising from the investigation.” Indisputably, videotaped evidence would have greatly facilitated the investigation of this case. We use its absence as an opportunity to recommend that police agencies and policy makers work toward outfitting as many officers and vehicles as possible with body-worn and dashboard cameras. In doing so, we note that the NYPD is in the process of designing and implementing a body-worn camera program.

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<sup>3</sup>The same standard applies regardless of the severity of the underlying offense. See Penal Law § 35.30(1)(c) (“Regardless of the particular offense which is the subject of the arrest[,]” the use of deadly physical force is justified when “necessary to defend the police officer . . . from what the officer reasonably believes to be the use or imminent use of deadly physical force.”)

## **STATEMENT OF FACTS**<sup>4</sup>

This incident can be divided into three general segments: (1) the conduct prior to Mr. Espinal's entry into the wooded area off of the Saw Mill River Parkway; (2) the foot pursuit in the wooded area and the fatal shooting of Miguel Espinal; and (3) the response of law enforcement personnel following the shooting.

### **A. Events Leading Up to the Foot Pursuit**

#### **1. The Attempted Car Stop**

According to A.S.,<sup>5</sup> on Monday, December 7, 2015, he spent the night in Yonkers, New York at the home of his friend J.J., which is where Mr. Espinal, J.J.'s half-brother, also lived. The next morning, J.J. went to work and Mr. Espinal offered to drive A.S. to pick up A.S.'s vehicle from a body shop in Yonkers. Mr. Espinal drove A.S. in J.J.'s 2009, silver-grey, Nissan 370Z (the "Nissan"). According to J.J., Mr. Espinal did so without J.J.'s knowledge or permission.

At approximately 11:30 a.m. on December 8, 2015, A.S. and Mr. Espinal left J.J.'s home. First, they went to a post office on South Broadway in Yonkers so that Mr. Espinal could mail some items. They were making their way toward a storage facility where Mr. Espinal kept items he sold online when they encountered a marked patrol car at the intersection of 262nd Street and South Broadway in the Bronx. According to A.S., he told Mr. Espinal to roll down the vehicle's tinted windows so the officers would not see the tint, but Mr. Espinal ignored that advice. At this point, the police officers activated the lights of their police car and pulled up behind Mr. Espinal, who, according to A.S., "took off" south on South Broadway.

According to POs James and Francis, their patrol car was facing east at the corner of 262nd Street and Broadway in the Bronx when PO James noticed a silver Nissan with heavily tinted windows stopped at a stoplight.<sup>6</sup> He pulled up the police car behind the Nissan and activated his siren as the stoplight turned green. According to the officers, the Nissan did not pull over despite the fact that the lights and siren on the police car had been activated. Instead, the Nissan sped away.<sup>7</sup>

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<sup>4</sup> None of the information referenced in this report was obtained through the use of grand jury subpoenas.

<sup>5</sup> Civilian witnesses are referenced by their initials in order to protect their privacy.

<sup>6</sup> POs James and Francis were not regularly partnered, but had been paired three times previously. Both officers voluntarily agreed to speak with the Westchester County Police Department and the OAG. They each also voluntarily provided a DNA sample via a buccal swab.

<sup>7</sup> Videotape obtained from three commercial establishments on different sections of South Broadway in the Bronx show the Nissan being pursued by a marked police car.

## 2. The High Speed Car Pursuit

According to A.S., Mr. Espinal continued driving on South Broadway before driving onto the Hutchinson Parkway<sup>8</sup> and entering the Saw Mill River Parkway traveling north in the northbound lane. The Saw Mill Parkway is a four-lane roadway with a 45 mile-per-hour speed limit at this section of the road. A.S. said that Mr. Espinal was “driving fast” and, at some point, “slammed on the brakes” and came to a complete stop, causing the police car to pass the Nissan. Once the police car passed, Mr. Espinal made a U-turn and began driving south (against traffic) in the northbound lane of the Saw Mill River Parkway. A.S. said he kept telling Mr. Espinal to stop, but Mr. Espinal would not listen and the Nissan ultimately struck a car head-on.

The officers’ account of the car pursuit is substantially similar to A.S.’s account. The officers indicated that the Nissan entered the Henry Hudson Parkway and increased its speed again. PO James estimated that he was approximately 80 yards behind the Nissan and would not be able to catch it. He decided to terminate the pursuit at that point, but changed his mind when he and PO Francis saw the Nissan strike two cars on the Henry Hudson Parkway, causing those cars to spin.<sup>9</sup> The Nissan then entered the Saw Mill River Parkway and PO James continued the pursuit. PO James estimated that the Nissan was traveling between 70 and 80 miles per hour by this time, while the officers remained behind with their lights and sirens activated. Shortly after entering the Saw Mill River Parkway, the Nissan stopped, made a U-turn, and began traveling south in the northbound lanes. PO James turned the patrol car around and began following the Nissan. PO James saw the Nissan strike two vehicles and crash into the right hand (eastern) highway barrier and an SUV before finally coming to a stop.<sup>10</sup>

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<sup>8</sup> Maps of the area, as well as GPS data from the police car, indicate that Mr. Espinal actually traveled from South Broadway to the Henry Hudson Parkway (not the Hutchinson Parkway) before entering the Saw Mill River Parkway. A map displaying the course of the car pursuit is attached hereto as Exhibit A; point A on the map denotes the approximate location of the attempted vehicle stop and point B denotes the approximate location of the U-turn taken by Mr. Espinal.

<sup>9</sup> Whether the vehicle pursuit complied with NYPD policy is distinct, as a matter of law, from whether PO James’s shooting after the vehicle and foot pursuits was justified under New York State law. See generally Salim v. Proulx, 93 F.3d 86, 91 (2d Cir. 1996) (where plaintiff pointed to “various violations of police procedure, such as failing to carry a radio or call for back-up,” the Second Circuit noted that the officer’s “actions leading up to the shooting are irrelevant to the objective reasonableness of his conduct [under the Fourth Amendment] at the moment [the officer] decided to employ deadly force”: “The reasonableness inquiry depends only upon the officer’s knowledge of circumstances immediately prior to and at the moment that he made the split-second decision to employ deadly force.”); see generally <http://www.nyc.gov/html/ccrb/downloads/pdf/pg212-39-vehicle-pursuits.pdf> (stating that NYPD “policy requires that a vehicle pursuit be terminated whenever the risks to uniformed members of the service and the public outweigh the danger to the community if [the] suspect is not immediately apprehended” and that an officer is to consider the following factors in determining the necessity to continue a vehicle pursuit: (1) the nature of the offense; (2) the time of day; (3) weather conditions; (4) the location and population density; (5) the capability of the NYPD vehicle being driven; and (6) an officer’s familiarity with the area).

<sup>10</sup> GPS evidence taken from the patrol vehicle driven by PO James indicates that the vehicle pursuit portion of this incident began at 11:38:07 a.m. at the intersection of Broadway and West 262nd St. and ended on the Saw Mill River Parkway three minutes and 30 seconds later at 11:41:47 a.m.

D.M. (operating a Honda Accord), K.G. (operating a Volkswagen), and C.W. (operating a GMC Suburban) were all driving in the northbound lanes of the Saw Mill River Parkway when Mr. Espinal began driving south (against traffic) in the northbound lanes, followed by the patrol car. The Nissan operated by Mr. Espinal struck D.M.'s Honda Accord and K.G.'s Volkswagen before spinning around and striking the front passenger side of C.W.'s Suburban and finally coming to a stop.

## **B. The Foot Chase and Shooting**

### **1. Civilian Observations of the Foot Pursuit**

From her vantage point in the driver's seat of her Suburban, C.W. observed Mr. Espinal climb out of the Nissan's driver's side window and run down an embankment. C.W. also saw POs James and Francis exit their car and pursue Mr. Espinal.

Along with another bystander, C.W. assisted A.S., the passenger in the Nissan driven by Mr. Espinal, out of the Nissan, walked him to the side of the road, and laid him on the ground. C.W. and other civilian witnesses said that A.S. said words to the effect of: "Why did he do this?" and "I don't know why he is running."<sup>11</sup>

After the crash, those with a view of the Nissan after it came to a stop indicated that Mr. Espinal crawled out of the driver's side window and ran into the woods along the eastern side of the highway. Additionally, many civilian witnesses saw PO James and PO Francis get out of the patrol car and follow Mr. Espinal into the woods.<sup>12</sup>

### **2. Officer Garthlette James's Statement**

According to PO James, Mr. Espinal got out of the Nissan through the driver-side window, jumped over the eastern highway barrier, and ran down a hill into the woods adjacent to the highway. PO James, who did not have a taser, said that he got out of the patrol car and followed Mr. Espinal into the woods with his gun out of its holster. PO

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<sup>11</sup> On September 23, 2015, Mr. Espinal was designated an "absconder" from felony probation in Florida. Mr. Espinal also had outstanding Florida arrest warrants for various felony offenses, including Grand Theft Auto, Aggravated Battery on a Law Enforcement Officer, and Resisting Arrest with Violence. Pursuant to New York Penal Law § 70.10, Mr. Espinal's criminal history made him eligible for persistent felony offender status (after a hearing and determination by a judge) and he potentially faced life in prison if convicted of another felony in New York. We include this information because it provides the likely reason why Mr. Espinal went to such great measures to avoid being stopped or arrested. Mr. Espinal's outstanding warrants and criminal history were not known to PO James, so neither is relevant as a matter of law to whether PO James held a reasonable belief that Mr. Espinal was about to use deadly physical force. See, e.g., People v. Watson, 20 N.Y.3d 1018 (2013) (victim's prior bad acts, of which the defendant was unaware, are not relevant to a justification defense).

<sup>12</sup> One civilian witness, S.C., who was in the park walking her dogs, indicated that she heard running and a gun shot and saw a puff of smoke. S.C. was not able to see people in the wooded area where she believed the shot was fired. S.C. estimated that she was about 30 to 50 feet from the area. After she heard the gun shot, she headed in a direction away from the area.

James peripherally noticed that PO Francis got out of the patrol car, but PO James lost sight of him; PO James's priority was arresting Mr. Espinal.

Mr. Espinal jumped down a wall and ran south down a foot path with PO James in pursuit. After running about 30 yards on the path, as PO James was beginning to catch up with him, Mr. Espinal turned left and ran into the woods. PO James closed the gap between himself and Mr. Espinal and attempted to grab Mr. Espinal's shoulder while holstering his gun. At this point, according to PO James, Mr. Espinal stopped, turned, and grabbed for the officer's service belt, and put his hands on the holster and radio. PO James said that Mr. Espinal then put both hands on PO James's gun in an attempt to take it.

PO James was able to return the gun to his holster, but he was not able to snap it closed. Mr. Espinal continued to struggle for the gun. PO James was able to take Mr. Espinal to the ground, but Mr. Espinal continued to wrestle against PO James. As they wrestled, there were points at which Mr. Espinal was on top of PO James and other points at which PO James was on top of Mr. Espinal. Believing that he would die if Mr. Espinal succeeded in obtaining his gun and describing himself as physically "spent" following the automobile pursuit, foot chase, and wrestling with Mr. Espinal, PO James intentionally fired one shot into Mr. Espinal's chest when PO James momentarily was on top of and facing Mr. Espinal.<sup>13</sup> PO James estimated that he was two feet or closer to Mr. Espinal at the time that PO James fired the shot.

Notwithstanding that Mr. Espinal had been shot, he continued to struggle against PO James.<sup>14</sup> PO James was able to get his gun back into his holster and secure it as Mr. Espinal continued to struggle with him. At this point, PO James put one cuff onto one of Mr. Espinal's wrists. He began calling for PO Francis, who called back that he was coming. PO Francis crawled under some bushes and finally reached PO James and Mr. Espinal. With PO Francis's assistance, PO James was able to handcuff both of Mr.

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<sup>13</sup> NYPD officers are trained that, if they make a determination to fire their weapon, they should shoot at the center of a person's torso. See [http://www.nyc.gov/html/nypd/downloads/pdf/analysis\\_and\\_planning/nypd\\_annual\\_firearms\\_discharge\\_report\\_2014V2.pdf](http://www.nyc.gov/html/nypd/downloads/pdf/analysis_and_planning/nypd_annual_firearms_discharge_report_2014V2.pdf) ("Because combat stress can contribute to the impairment of fine motor skills, and because of the relative imprecision of pistols, police officers are taught to shoot for center mass – usually, the torso. . . . The human body's center mass is the largest area available as a point of aim. The torso represents approximately one third of a human's surface area, compared to nine percent for an arm or 18 percent for a leg. The torso is also the most stationary portion of the body; extremities are much smaller and less static and therefore a far less certain target. Additionally, shooting a subject in an extremity is far less likely to stop him or her than a shot to the center mass.").

<sup>14</sup> It is impossible to determine whether Mr. Espinal was actually continuing to resist arrest or whether his actions were unintentional bodily reflexes.

Espinal's hands.<sup>15</sup>

PO James noticed that PO Francis was extremely winded and PO James thought that his partner needed medical attention. He told PO Francis to remain with Mr. Espinal while he went out onto the footpath in order to ascertain their precise location. From the path, PO James was able to see people on the parkway and a sign for Cross County Exit 4. He radioed dispatch with the location and requested an ambulance. During PO James's radio call, he is clearly short of breath.<sup>16</sup>

### 3. Officer Romeo Francis's Statement

PO Francis, like PO James, saw Mr. Espinal get out of the Nissan and run into the woods alongside the Saw Mill River Parkway. PO James got out of the patrol car and ran into the woods after Mr. Espinal.

PO Francis followed his partner over a railing but did not see that there was a sharp drop-off on the other side of the rail. He fell down a receding wall and landed on his hands and knees; when he tried to stand, he fell again. PO Francis heard one gunshot and began crawling toward the sound of the shot, trying to gain traction as he proceeded through thorny foliage.

When PO Francis reached PO James and Mr. Espinal, PO James's gun was holstered. Mr. Espinal was on the ground and PO James was trying to handcuff him. PO Francis and PO James together tried to apply the handcuffs, but Mr. Espinal continued to struggle with them. PO Francis repeatedly told Mr. Espinal to stop resisting and fighting, and PO James was finally able to handcuff Mr. Espinal behind his back.

By this time, both officers were exhausted and out of breath. PO Francis asked PO James if he was okay, and PO James replied with words to the effect of, "He went for my gun, he tried to take my gun." According to PO Francis, he did not know exactly where they were, so he told PO James to go out to the highway and advise central dispatch of their precise location. PO James left and PO Francis turned Mr. Espinal onto his side, telling him to breathe.

PO Francis was experiencing chest pains and having difficulty breathing at this time. He did not attempt CPR on Mr. Espinal; in his condition, he was not physically capable of doing so.

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<sup>15</sup> Attached as Exhibit B are: (1) a sketch depicting the area where the foot pursuit and shooting occurred; (2) a photograph of the wall that Mr. Espinal jumped down; (3) a photograph depicting the area where the shooting occurred, from the perspective of one looking into the area; and (4) a photograph depicting the area where the shooting occurred, from the perspective of one looking out of the area and in the direction of the Saw Mill River Parkway.

<sup>16</sup> Medical records show that PO James suffered lacerations on both legs and his forehead and that he had chest pain where his seat belt had crossed his chest.

### **C. Post-Shooting Response**

Using radio dispatch information, the OAG was able to determine that officers began to arrive at the scene approximately two and one-half minutes after PO James reported the location of the scene to central dispatch. POs Robert Gavan and Carlos Henriquez arrived on the scene at the Saw Mill River Parkway at 11:48:27 and, nearly contemporaneously, POs Ramysh Bangali and Nathan Sadita reached the scene at 11:48:39. Detectives Richard Hardigan and Thomas Albano arrived shortly thereafter. As described in more detail below, these officers attempted life-saving procedures on Mr. Espinal.

As the officers arrived at the scene, civilians pointed toward the woods and told them: “He has a gun. He has a gun” and “They’re down there.” The officers entered the woods adjacent to the Parkway.

When PO Bangali located the scene of the shooting, Mr. Espinal was lying on the ground on his back, with his hands cuffed behind him. PO Francis was standing near him with his gun holstered.<sup>17</sup> PO Bangali lifted Mr. Espinal’s shirt and saw a gunshot wound to the diaphragm; he did not observe an exit wound. He checked Mr. Espinal for breathing and a pulse and detected neither. At that point, PO Bangali checked on PO Francis, who was holding his chest and indicating that he was having trouble breathing. PO Bangali asked other officers to escort PO Francis up to the road to await an ambulance while PO Bangali stayed with Mr. Espinal.

When POs Sadita and Gavan spoke with PO James, he said words to the effect of: “He grabbed my gun. He grabbed my gun.” PO Sadita asked PO Gavan to remain with PO James on the path while he continued to the scene of the shooting. When he arrived, PO Sadita saw PO Bangali checking Mr. Espinal for vital signs.

Dets. Albano and Hardigan, equipped with medical gear, located PO Bangali who was still attending to Mr. Espinal. They began attempting life saving techniques on Mr. Espinal. Det. Albano lifted and cut Mr. Espinal’s shirt and applied occlusive dressing, designed to stop bleeding, to the gunshot wound. They set up an AED<sup>18</sup> but received a “no shock advised” message, indicating that defibrillating the heart would be futile.

At about the same time, Empress Ambulance operations supervisor Michael Blecker, a paramedic, arrived at the scene. Lt. Blecker found Mr. Espinal, lying on his back, partially exposed from the waist up, with Dets. Hardigan and Albano applying AED pads. He noted a single wound to the Mr. Espinal’s right chest, and he recalled that it was just below the right nipple.<sup>19</sup> The wound was covered by a chest-seal dressing. Lt.

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<sup>17</sup> PO Gavan believed that PO Francis was on the footpath and that PO James was with Mr. Espinal.

<sup>18</sup> An Automated External Defibrillator (“AED”) is a portable device that checks heart rhythms and, if warranted, sends an electric shock (*i.e.*, defibrillation) to the heart to try to restore a normal rhythm.

<sup>19</sup> The autopsy found that the bullet wound was actually on the left side of the chest, just below the left nipple.

Blecker noted that Mr. Espinal was not breathing, was completely devoid of color, and had no pulse. He pronounced Mr. Espinal deceased at 12:00 pm.

### **AUTOPSY REPORT**

At approximately 4:45 pm, Dr. Benjamin Bristol of the Westchester County Medical Examiner's Office arrived at the scene. At approximately 6:30 pm, Mr. Espinal's body was removed from the scene and taken to the Westchester County Medical Examiner's Office.

On December 9, 2015, Dr. Kunjlata Ashar performed an autopsy.<sup>20</sup> Dr. Ashar found multiple "scratch-like marks" and abrasions covering much of Mr. Espinal's body, including his head, face, shoulders, torso, upper extremities, lower chest, back, and left knee area. There were no large lacerations, no broken bones, and there was no evidence of blunt force trauma.

Dr. Ashar found a single bullet wound, which entered Mr. Espinal's chest four inches below and one inch medial to the left nipple (11 inches below the shoulder and three inches left of the midline). There was no smudging or stippling on the skin surrounding the entrance wound, indicating that Mr. Espinal's clothing was between the barrel of the gun and his skin. The wound track through the chest was from left to right, from the front of the body to the back, and slightly upward.

The bullet impacted several organs; it traveled through parts of the upper and lower lobes of the left lung, grazed the peak of the left ventricle of the heart, entered and exited the liver, and traveled through the lower lobe of the right lung before coming to rest in the muscles on the right rear side of the chest. Dr. Ashar removed a "large caliber bullet" ten inches below the right shoulder and seven inches right of the back midline of the body. The final autopsy certified Mr. Espinal's cause of death as: "Bullet wound of chest involving lungs, heart, diaphragm, and liver."<sup>21</sup>

Samples of Mr. Espinal's bodily fluids were submitted for toxicological testing. No drugs or alcohol were present in his blood or urine at the time of his death.<sup>22</sup>

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<sup>20</sup> The autopsy report is attached hereto as Exhibit C.

<sup>21</sup> The Medical Examiner determined that the manner of death was a homicide. "Homicide" is a medical determination made pursuant to New York State Public Health Law Section 4143(3), which directs that medical examiners investigate deaths that occur without medical attendance and, if they are the result of external causes, deem them "accidental, suicidal, or homicidal."

<sup>22</sup> Mr. Espinal's family hired an independent pathologist, Dr. Michael Baden, to review Dr. Ashar's examination of Mr. Espinal's body. An OAG representative was present for Dr. Baden's review. Dr. Baden, who was complimentary of the Dr. Ashar's examination, did not identify to the OAG any issues with Dr. Ashar's autopsy.

## FORENSIC ANALYSIS

### A. Ballistics and Gunpowder Analysis

Four types of probative ballistics and gunpowder analysis were performed.

First, microscopic comparison of the sole spent shell casing<sup>23</sup> recovered at the scene and the bullet recovered during the autopsy revealed that the bullet and the bullet casing were both discharged from PO James's gun.<sup>24</sup>

Second, trace evidence analysis, which refers to the examination of microscopic particles of physical evidence, was performed on particles that were identified and removed from Mr. Espinal's shirt and sweater in order to ascertain the presence or absence of particles on the shirt and sweater that are consistent with the chemical composition of gunpowder.<sup>25</sup> More than 65 trace particles removed from the sweater had stereomicroscopic characteristics consistent with gunpowder. More than 230 trace particles removed from the t-shirt had stereomicroscopic characteristics consistent with gunpowder.<sup>26</sup> The presence of this many trace particles on Mr. Espinal's upper body clothing strongly suggests that the clothing was in very close proximity to the muzzle of a firearm at the time that it was discharged. This evidence, therefore, comports with PO James's statement that he and Mr. Espinal were in close proximity to one another at the time that PO James fired his gun.<sup>27</sup>

Third, Distance Determination Pattern Testing ("DDPT") – another method used to determine the approximate distance between the muzzle of a firearm and impacted clothing at the time a bullet is discharged from the barrel of a gun – was performed. Using ammunition taken from the magazines that accompanied PO James's gun, a firearms examiner performed test shots on pieces of cloth at various distances ranging from "contact" to 30 inches away in order to determine what the gunpowder particle

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<sup>23</sup> A gun cartridge consists of four components: (1) the casing (often referred to as a "shell" or "shell casing"), which holds everything together; (2) the projectile (commonly referred to as a "bullet"); (3) gunpowder; and (4) primer (which is used to create a spark). When the firing pin of a semi-automatic handgun, like PO James's NYPD-issued gun, strikes the primer, it creates an explosion that rockets the projectile out of the muzzle of the firearm. The spent casing is thereafter ejected from the ejection port of the gun.

<sup>24</sup> See Westchester County Department Of Public Safety Crime Laboratory-Firearms Section Analysis Report (Holtzman) (attached hereto as Exhibit D).

<sup>25</sup> Gunpowder, a mixture of sulfur, charcoal, and potassium nitrate, is a low explosive mixture used to propel bullets from guns. Primer Gunshot Residue is the residue of burned and unburned primer or gunpowder components.

<sup>26</sup> See Department Of Laboratories and Research, Division of Forensic Sciences Report (Rothenberg) (attached hereto as Exhibit E).

<sup>27</sup> Trace evidence analysis performed on clippings taken from Mr. Espinal's fingernails failed to detect the presence of particles consistent with the chemical composition of gunpowder. See id.

distribution would be on the pieces of cloth at different distances.<sup>28</sup> Each of the test pattern cloths was submitted to the Westchester County Department of Laboratories and Research. The test pattern cloths were then compared to the gunpowder particle distribution on Mr. Espinal's t-shirt. The Westchester County Department of Laboratories and Research concluded that the residue pattern on Mr. Espinal's t-shirt was similar to the residue patterns observed between the 14 inch and 18 inch test patterns.<sup>29</sup> Accordingly, the DDPT analysis indicates that the distance between PO James's firearm and Mr. Espinal's t-shirt at the time the weapon was discharged was approximately 14 to 18 inches. This distance is consistent with PO James's estimate that Mr. Espinal was less than 24 inches away from him at the time that PO James fired his gun.

Fourth, analysis of Mr. Espinal's t-shirt and sweater indicates that the bullet fired by PO James went through Mr. Espinal's t-shirt, but not his sweater. While numerous holes were noted on Mr. Espinal's sweater, none had characteristics consistent with having been caused by the passage of a projectile through the fabric.<sup>30</sup> In contrast, Mr. Espinal's t-shirt had two adjacent holes located in the left front portion of the t-shirt near the midsection. A few particles "of possible gunpowder" were observed, congregated mainly around the larger of the two holes, and a pattern of particulate nitrates was identified around both holes. Particulate nitrites are indicative of the presence of burnt, or partially burnt, gunpowder.

The absence of a bullet hole in the sweater, with the corresponding presence of two bullet holes in the t-shirt, indicates that Mr. Espinal's upper body clothing was in some degree of disarray at the time the shot was fired. It suggests that his body was in a position such that the sweater was raised up, but the t-shirt was not, when the bullet entered his body. Similarly, the presence of two bullet holes on the t-shirt with only one corresponding gunshot indicates that the t-shirt was not pulled straight, but instead was disarrayed and folded over. This type of upper-body clothing dishevelment is consistent with PO James's account that the two were struggling at the time that the shot was fired.

## **B. Primer Gunshot Residue Analysis**

P-GSR is distinct from gunpowder. During the series of reactions that culminates in a bullet's discharge from a gun, lead, barium and antimony (as well as other substances) are released and escape from the gun, forming a vaporous cloud called a plume. The lead, barium, and antimony condense together to form primer gunshot residue ("P-GSR") particles as the temperature decreases in the plume.<sup>31</sup> Based on the P-GSR

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<sup>28</sup> Id.

<sup>29</sup> Id.

<sup>30</sup> Id.

<sup>31</sup> See [https://archives.fbi.gov/archives/about-us/lab/forensic-sciencecommunications/fsc/july2006/research/2006\\_07\\_research01.htm](https://archives.fbi.gov/archives/about-us/lab/forensic-sciencecommunications/fsc/july2006/research/2006_07_research01.htm); <http://www.forensicmag.com/article/2014/08/gunshot-residue-collection-decisions-make-or-break-case>.

particles, firearms examiners can estimate the distance between the object upon which they are located and the firearm from which they originated.<sup>32</sup>

At the time of the autopsy, Mr. Espinal's hands were tested to determine whether P-GSR particles were present on his hands at the time of his death.<sup>33</sup> The microscopic materials collected during the process by the Medical Examiner were vouchered as P-GSR "stubs."<sup>34</sup> In addition to the two stubs corresponding to Mr. Espinal's hands, a negative control stub was prepared and included. All three were submitted to the Westchester County Department of Laboratories and Research for forensic analysis.

The three stubs and the cartridge were analyzed using a scanning electron microscope ("SEM"). The SEM is capable of magnifying objects up to 500,000 times their actual size. P-GSR particles are microscopic, and an SEM is necessary to detect their presence.

The SEM analysis revealed that particles containing compositions "highly specific to primer residue" were present on the submissions corresponding to Mr. Espinal's left and right hands.<sup>35</sup> This forensic finding supports PO James's claim that Mr. Espinal's hands were in close proximity to Officer James's gun when the officer fired it.<sup>36</sup>

### **C. DNA Analysis**

The OAG directed that swabs taken from PO James's holster and the slide, trigger guard, and the grips of his gun be submitted to the Office of Chief Medical Examiner of the City of New York ("OCME") for DNA analysis. The amount of genetic material present was minimal, so High Sensitivity STR DNA analysis was utilized.<sup>37</sup> All of the

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<sup>32</sup> See <http://leb.fbi.gov/2011/may/the-current-status-of-gsr-examinations>.

<sup>33</sup> To guard against potential contamination, Mr. Espinal's right and left hands were placed in bags at the scene.

<sup>34</sup> "Stubs" are carbon-coated adhesives used to collect potential P-GSR from human hands. "Stubbing" involves using the stubs to collect particles from the hands. See <http://www.ncbi.nlm.nih.gov/pubmed/20345804>.

<sup>35</sup> See Department Of Laboratories And Research, Division of Forensic Sciences, Report (Woodbyne) (attached hereto as Exhibit F).

<sup>36</sup> The OAG forwarded the forensic gunshot residue reports to a private laboratory, McCrone Associates, Inc., which concluded that the findings in the reports were consistent with the possibilities that either: (1) Mr. Espinal himself discharged a firearm; (2) Mr. Espinal was in the proximity of a firearm when it was discharged by another person; or (3) Mr. Espinal had come into contact with another object/person that had GSR particles on it, some of which were transferred to him. The report by McCrone Associates is attached hereto as Exhibit G.

<sup>37</sup> High Sensitivity STR DNA analysis can process very low levels of genetic material unsuitable for more traditional DNA analysis. The New York OCME is among the very few public laboratories that perform this type of testing nationally.

swabs showed a mixture of DNA profiles, but profiles of the individual contributors to the mixtures could not be conclusively determined. The OCME did not confirm the presence of Mr. Espinal's DNA on PO James's gun or holster.<sup>38</sup> The fact that the OCME was only able to extract extremely small amounts of genetic material that was actually suitable for comparison made its reaching definitive conclusions difficult. For example, the OCME only found "limited" and "moderate" support that PO James's DNA was a part of the mixture taken from his own gun's grips and holster, respectively.<sup>39</sup>

## **LEGAL ANALYSIS**

New York State Penal Law Section 35 provides that a police officer is justified in using deadly physical force if the officer: (1) is effecting or attempting to effect an arrest; (2) reasonably believes that the individual committed an offense;<sup>40</sup> and (3) the deadly physical force is necessary to defend the officer or another person from what the officer reasonably believes to be the use or imminent use of deadly physical force. See Williams v. City of New York, 2 N.Y.3d 352 (2004); see also Stevens v. Metro. Transp. Auth. Police Dep't, 293 F.Supp.2d 415, 420 (S.D.N.Y. 2003); Brown v. State, 250 A.D.2d 796, 797 (2d Dept. 1998). This standard applies regardless of the severity of the offense that gave rise to the arrest or attempted arrest.<sup>41</sup> Pursuant to Penal Law Section 35, the prosecution must disprove these three elements of a justification defense. See People v. McManus, 67 N.Y.2d 541, 546-47 (1986) ("[W]henver justification is sufficiently interposed by the defendant, the People must prove its absence to the same degree as any element of the crime charged.").

The first and second elements (i.e., that PO James was trying to effect an arrest of Mr. Espinal for an offense he reasonably believed Mr. Espinal had committed) are established by the statements of numerous civilian eyewitnesses, video surveillance, POs James's and Francis's statements to the OAG, and the radio calls to the dispatcher. At the outset, there was a reasonable basis to believe that Mr. Espinal committed the traffic infraction of Operating a Vehicle with Improperly Tinted Windows (VTL § 375.12-a); Mr. Espinal's own passenger told him to roll down his windows so that officers would not see the heavy tint. The collision that ended the car pursuit, observed by multiple civilian witnesses, and Mr. Espinal's flight from the collision provided a basis for several, additional charges: (1) the traffic infraction of Leaving the Scene of a Property Damage Accident (VTL § 600(1)); (2) the misdemeanor of Reckless Driving (VTL §1212); (3) the

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<sup>38</sup> See Office of Chief Medical Examiner, Laboratory Report, Report ID: CRT:0316-0969; Office of Chief Medical Examiner, Laboratory Report, Report ID: CRT:0516-0543. Both are attached hereto as Exhibit H.

<sup>39</sup> Even in circumstances where an individual is known to have touched an object, he or she does not always leave DNA, and even if the individual does leave genetic material behind, there is no guarantee that DNA testing will detect it.

<sup>40</sup> Penal Law Section 55.10 defines felonies, misdemeanors, violations, and traffic infractions as "offenses."

<sup>41</sup> See Penal Law §35.30(1)(c) ("Regardless of the particular offense which is the subject of the arrest[,] the use of deadly physical force is justified when "necessary to defend the police officer . . . from what the officer reasonably believes to be the use or imminent use of deadly physical force.").

misdemeanor of Reckless Endangerment in the Second Degree (Penal Law §120.25); and (4) the felony of Reckless Endangerment in the First Degree (Penal Law § 120.20).

The third element requires a determination of the reasonableness of PO James's belief that deadly force was going to be imminently used against him. Specifically, it requires an assessment of the veracity of PO James's claim that Mr. Espinal fought with him and was attempting to take his weapon. See generally Salim v. Proulx, 93 F.3d 86, 91-92 (2d Cir. 1996) ("no rational jury could find" that deadly force was unreasonable where a shooting came "in the midst of a struggle when the possibility that [the suspect] might gain control of the officer's weapon was imminent"); Rasanen v. Doe, 723 F.3d 325, 337 (2d Cir. 2013) (in a "close-range shooting of a suspect by a law enforcement officer," whether the suspect tried to turn an officer's gun against him was the decisive factor in the case);<sup>42</sup> see also generally Graham v. Connor, 490 U.S. 386, 396-97 (1989) ("[t]he 'reasonableness' of a particular use of force must be judged from the perspective of a reasonable officer on the scene" and courts must make "allowance for the fact that police officers are often forced to make split-second judgments – in circumstances that are tense, uncertain, and rapidly evolving – about the amount of force that is necessary in a particular situation.").

PO James's account of what transpired after he pursued Mr. Espinal into the woods was corroborated by the Medical Examiner's report, the ballistics evidence, and the gunpowder and P-GSR analysis.

- The Medical Examiner confirmed that Mr. Espinal sustained one gunshot, which was found to have entered his front, left, upper abdomen. PO James, who is right-handed, stated that the two were fighting and facing each other when he fired one shot. The presence of one gunshot on the front, left side of Mr. Espinal's body is consistent with PO James firing one shot with his right hand, while facing Mr. Espinal, which would result in the bullet entering the left side of Mr. Espinal's body.
- Particles consistent with gunpowder were identified on Mr. Espinal's clothing. The presence of gunpowder on Mr. Espinal's clothing is consistent with Mr. Espinal being close enough to PO James to try to obtain PO James's gun at the time the shot was fired.
- The absence of a bullet hole in Mr. Espinal's sweater, with the corresponding presence of two bullet holes in his t-shirt, indicate that

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<sup>42</sup> In Rasanen, the Second Circuit granted a new trial because the trial court did not clearly instruct the jury that it had to find that the use of force was excessive unless it found that the officer had probable cause to believe that the suspect posed a significant threat of death or serious physical injury to the officer or others. Rasanen v. Doe, 723 F.3d 325, 335 (2d Cir. 2013). In the trial court, Rasanen v. Brown, 841 F.Supp.2d 687, 710 (E.D.N.Y. 2012), vacated and remanded by Rasanen v. Doe, 723 F.3d 325, 335 (2d Cir. 2013), experts for the police officer and the decedent agreed that "where an officer reasonably believed his own gun might be used against him, it was reasonable for an officer to use deadly force."

Mr. Espinal's upper body clothing was in some degree of disarray at the time the shot was fired. This type of upper-body clothing dishevelment is consistent with PO James's account that the two were struggling at the time the shot was fired.

- DDPT analysis placed the distance between Mr. Espinal and the muzzle of PO James's gun at between 14 and 18 inches. PO James estimated that Mr. Espinal was less than two feet from him when he discharged his weapon.
- Particles consistent with P-GSR were identified on Mr. Espinal's hands. PO James stated that Mr. Espinal was fighting with him and attempting to take his weapon at the time PO James fired one shot. The P-GSR analysis corroborated PO James's claims that Mr. Espinal and, his hands in particular, were in close proximity to PO James's gun at the time he fired it.

Finally, Mr. Espinal's failure to stop initially, his decision to flee in the car he was driving, his reckless driving that endangered numerous civilians on the highway (including a U-turn and driving the wrong way on a major parkway), and his flight on foot suggest that he was willing to take steps to evade arrest that placed others at risk of harm or death. Mr. Espinal's dangerous conduct prior to entering the wooded area lends credibility to PO James's claim that PO James reasonably believed that he was in danger of the imminent use of deadly force. See generally Public Adm'r v. United States, No. 88 Civ. 0190 (BN), 1989 WL 116307, \*6 (S.D.N.Y. 1989) (taking into account (a) the "apparent extreme determination and motivation of the occupants of [a car] to escape arrest for a serious crime, even after their vehicle – hotly pursued by a car with a siren and flashing lights – . . . violently crashed into a parked truck" and (b) their flight from the site of the crash, in holding that an officer reasonably believed that it was necessary to use deadly physical force in self-defense); see generally also Tracy v. Freshwaters, 623 F.3d 90, 97-98 (2d Cir. 2010) (noting, in assessing non-fatal excessive force claim, where there was an initial vehicle stop for windows being covered by snow that was possibly impairing the driver's ability to see, that the suspect's post-stop evasiveness and attempted flight on foot meant that "the scope of crime in question was not simply driving without a license or criminal impersonation but was unknown and potentially far more serious").

In sum, we conclude that the forensic evidence and the totality of the circumstances support PO James's account and that, in any event, the evidence certainly does not provide any basis for the OAG to disprove – as it must under Penal Law Section

35 – that PO James reasonably believed that he was in danger of the imminent use of deadly force.<sup>43</sup>

## **RECOMMENDATION**

### **Increase the Use of Body-Worn and Dashboard Cameras**

Indisputably, videotaped evidence would have greatly facilitated the investigation of this case. We use its absence as an opportunity to recommend that police agencies and policy makers work toward outfitting as many officers and vehicles as possible with body-worn and dashboard cameras. In doing so, we note that the NYPD is in the process of implementing a body-worn camera program.<sup>44</sup>

Those agencies that have adopted body-worn camera programs note many associated benefits, including: the documentation of evidence; enhanced officer training; the prevention and/or resolution of citizen complaints; transparency; and performance and accountability.<sup>45</sup> Dashboard cameras have proven to be similarly beneficial to officers, law enforcement agencies, and members of the public alike.<sup>46</sup> Moreover, at a time when police-civilian encounters are increasingly recorded by members of the public, body-worn and dashboard cameras provide the additional benefit of ensuring that events are captured from additional perspectives.<sup>47</sup>

In this case, POs James and Francis initially engaged in a car pursuit of Mr. Espinal. There were numerous witnesses to the pursuit who were interviewed, and they corroborated the officers' account of what transpired. However, a single camera mounted on the officers' police vehicle would have reproduced a vantage point and a real time perspective that none of the civilian witnesses could provide.

Further, each officer recounted his foot chase in the woods adjacent to the Saw Mill River Parkway, through the brush, down a footpath, and into the area where the shooting occurred. But, PO James is the only surviving witness to the shooting. The

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<sup>43</sup> For PO James's conduct to be justified under the law, he need not have been correct that it was necessary to use deadly physical force in self-defense; a reasonable, but mistaken belief is sufficient under the law. See generally Public Adm'r v. United States, No. 88 Civ. 0190 (BN), 1989 WL 116307, \*6 (S.D.N.Y. Sept. 26, 1989) (“[A]n officer’s belief that another . . . is about to use deadly physical force, may be reasonable – and the use of deadly physical force justified – even if his belief turns out to be mistaken.”); People v. Umali, 10 N.Y.3d 417 (2008) (discussing jury charge that stated that the user of force’s belief may be mistaken).

<sup>44</sup> See <https://policingproject.org/nypd-body-worn-camera-feedback/>

<sup>45</sup> See <https://www.justice.gov/iso/opa/resources/472014912134715246869.pdf>

<sup>46</sup> See [http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display&article\\_id=358](http://www.policechiefmagazine.org/magazine/index.cfm?fuseaction=display&article_id=358)

<sup>47</sup> No video recorder or camera can capture the exact perspective of the officer behind the wheel of a vehicle or engaged in a foot chase (or for that matter, the civilian with whom the officer is engaged). See, e.g., <http://www.nytimes.com/interactive/2016/04/01/us/police-bodycam-video.html>.

forensic evidence was consistent with PO James's account, but if PO James had been wearing a body-worn camera, it would have been possible to see much of what PO James actually saw. A body-worn camera would have assisted and enhanced the investigation of this incident.

We are mindful of the costs of these technologies and the limited resources of law enforcement agencies. Not only do the cameras themselves cost money; there are enormous expenses associated with storing the data as well as training the officers in how cameras are to be used. For that reason, we direct this recommendation not only to law enforcement agencies, but to the policy makers who determine and dictate funding priorities.

Finally, we recognize that the use of cameras should be undertaken only after the development of explicit, fair and workable protocols that address privacy concerns, determine how long to store data, and dictate how much of that data to share with the public.<sup>48</sup>

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<sup>48</sup> See, e.g., <http://inpublicsafety.com/2015/01/body-worn-cameras-benefits-and-best-practices-for-police/>; <https://www.justice.gov/iso/opa/resources/472014912134715246869.pdf>.

# Car Pursuit Route

Directions from Broadway & W 262nd St to Saw Mill River Pkwy, Yonkers, NY 10705, USA

**A** Broadway & W 262nd St

**B**

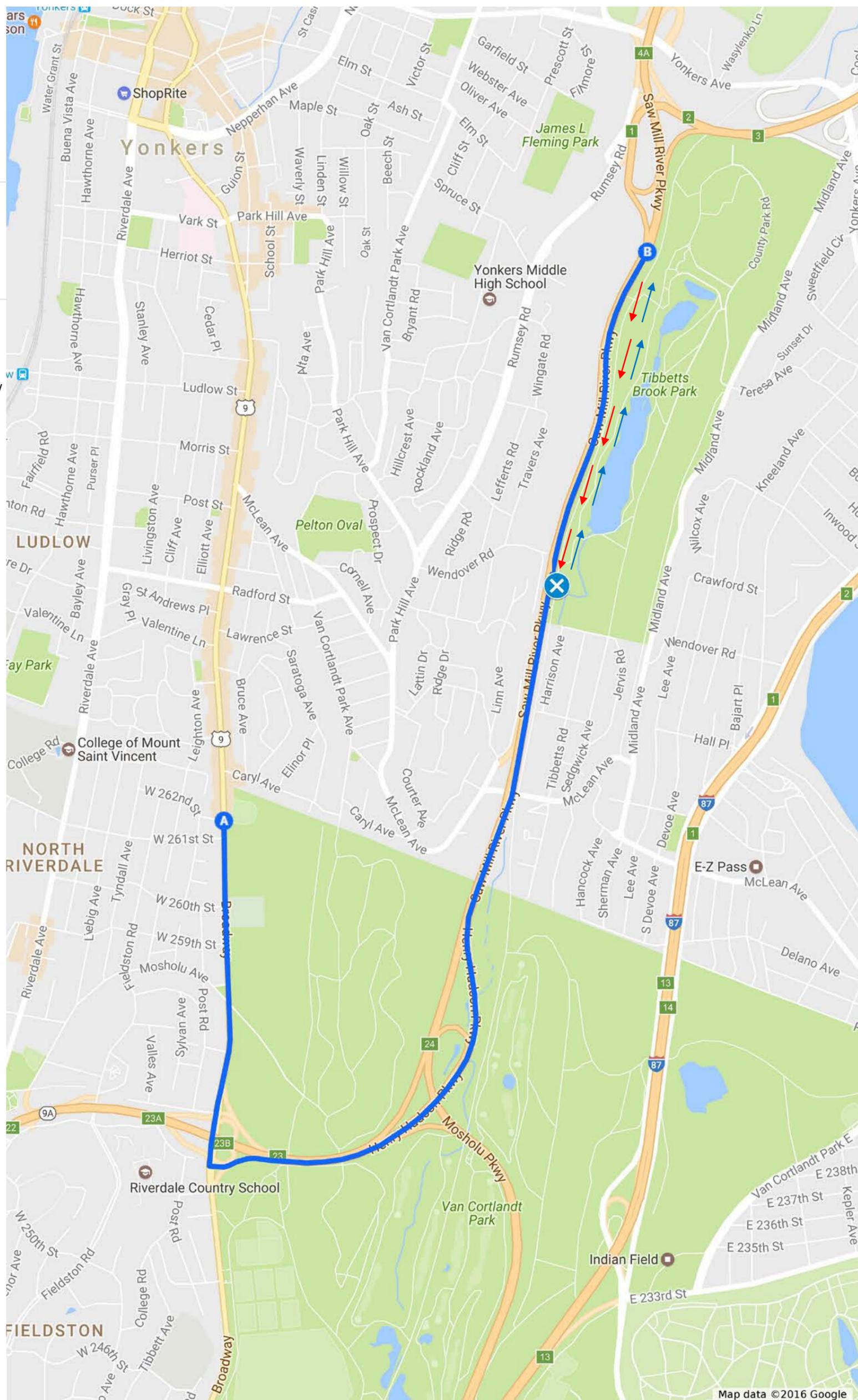
Saw Mill River Pkwy, Yonkers, NY 10705, USA

## Incident Area

**X**

Approximate Location of Crash

Note: The arrows indicate the approximate path taken by Mr. Espinal, denoting that the route proceeded along the same road but against the flow of traffic after the U-turn taken at roughly point B.













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10 Dana Road Valhalla, NY 10595

## AUTOPSY REPORT

**M2015-2601**

**Report of death by Dr. Kunjlata Ashar M.D., Medical Examiner**

**Name: Miguel Angel Espinal Julbe**

**Residence:** [REDACTED]

**Place of death:** Tibbetts Park (bike trail), Yonkers

**Age:** 36

**Sex:** M

**Race/Ethnicity:** Hispanic

**Date & Time**

**Of Death:** 12/8/2015 **Pronounced** 12:00 p.m.

**Examiner Notified:** 12/8/2015 14:59

**Of arrival at scene:** 12/8/2015 16:46

**Reported By:** Det. Whitney

**Primary police agency:** Westchester County, NY Police Department

I hereby certify that I, Dr. Kunjlata Ashar, MD have performed an autopsy (in the presence of Dr. Richards, Dr. Bristol) on the above named person at the Medical Examiner's Facility, Valhalla, NY., on 12/9/2015 10:55 a.m.

Signed: Kunjlata Ashar MD

Dr. Kunjlata Ashar

Pathologist/Medical Examiner

certified true and correct copy

Kunjlata Ashar MD  
Office of the Medical Examiner



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### EXTERNAL DESCRIPTION:

The body is received fully clad. The clothing will be described later.

The body is that of a dark complexioned male measuring 65 inches in height, weighing 149 pounds and appears to be stated age of 36 years. The body is cold and has full rigidity. Faint non-blanching purplish red lividity is seen on the back. ~~The purplish red lividity is seen on the back.~~ The scalp hair is black. The hair is short in temporal and occipital region. The facial bones are symmetrical. The eyes show equal round pupils measuring 5 mm in diameter, dark brown irides and pale conjunctivae without petechial hemorrhages. The external auditory canals and earlobes are unremarkable. The nasal bones are intact on inspection and palpation. The mustache and beard contain black hair measuring up to ½ inch in length. The teeth are natural. The neck shows centrally located trachea. The chest appears well expanded. The left side of chest has a bullet wound which will be described later. The abdomen is flat. The external genitalia are those of uncircumcised adult male. The foreskin contains two beads. Both upper as well as lower extremities are free of deformity. The back shows normal curvature and is free of trauma or deformity.

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Following tattoos are present: Across the chest are bluish black tattoos of what appears to be a heart, a land map with a hand showing middle finger and ribbons reading "ISABELLE, MY WORD, ANTHONY, MARIA, ALEX, WENDY, EVLYN, ANA, CARLOS AND JESSICA." The right upper arm at its lower third has a bluish black tattoo of barbed wire. The lateral aspect of left upper arm has a bluish black tattoo of a tribal design. The ventral surface of right wrist has a bluish black tattoo "I AM SORRY JESSICA."

Following injuries are noted: Multiple linear scratch-like marks are present over the forehead, eyes, nose, left cheek and chin measuring up to 2 inches in length. The inner aspect of right eyebrow reveals vertically oriented superficial laceration involving skin and underlying soft tissue measuring 1 inch in length. The left cheek has a red abrasion measuring 1 ¼ x ¼ inches. The lateral aspect of left eye shows a purplish ecchymosis measuring 1 inch in greatest dimension. The inner aspect of left clavicular region reveals three linear scratch-like red abrasions measuring up to 1 ¼ inch in length. The epigastric region on each side reveals a linear red abrasion measuring up to 1 inch in length. Multiple red scratch-like marks are present over right shoulder, right upper arm and right



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forearm measuring up to 1 ½ inches in length. The dorsum of right ring and little finger reveals three red abrasions measuring up to 1/8 inch in greatest dimension. Multiple linear red scratch-like abrasions are present over the lateral aspect of left upper arm, dorsum of left forearm and hand measuring up to ¼ inch in length. The dorsum of left ring finger and index finger each reveals linear red abrasion measuring up to 1/8 inch in length. The lateral aspect of left knee in its upper portion shows a red abrasion measuring ¾ x ¼ inch. The dorsum of right wrist reveals two linear brown abrasions measuring up to 2 ½ inches in length. The back of the head shows obliquely oriented several linear red scratch-like abrasions over 6 x 2 ½ inch area going towards left side of the neck. The right scapular region reveals 5 linear scratch-like red abrasions measuring up to 2 ½ inches in length over 2 ½ x 5 inch area. The left scapular region reveals two linear abrasions measuring up to ¾ inch in length. The left lower chest on the back laterally reveals red linear scratch-like abrasion measuring 3/8 inch in length.

Description of bullet wound: The entrance is located on the left side of the chest, 11 inches from left shoulder and 3 inches left of midline. It is 4 inches



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below and 1 inch medial to the left nipple. There is no smudging or stippling surrounding the entrance wound. The wound diameter is 3/8 inches with circumferential marginal abrasion measuring 1/32 inches in thickness. The wound track involves the skin, underlying soft tissues and muscles and enters the left chest cavity through the 6<sup>th</sup> intercostal space fracturing 6<sup>th</sup> and 7<sup>th</sup> ribs. Contusions of lower portions of left upper as well as lower lobe are present. The wound track involves the pericardial sac, left dome of diaphragm, grazes the apex of left ventricle of the heart, goes through-and-through the liver and enters the right chest cavity passing through the right dome of diaphragm. It then goes through-and-through the lower portion of <sup>lower</sup> right lobe of <sup>right lung</sup> liver. It exits the chest cavity through right 7<sup>th</sup> intercostal space in posterior axillary line. A deformed large caliber bullet is recovered from the muscles of right side of the chest, 10 inches from the right shoulder and 7 inches right of midline from the back. The bullet is labeled E/A and will be submitted to ballistic division of Westchester County Police. The direction of the wound track is from left to right, backwards and slightly upwards.

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### PRIMARY INCISION:

The body is opened by the usual Y-shaped thoracoabdominal incision. The abdominal pannus measures up to ½ inch in thickness. Each pleural cavity contains about 600 cc of liquid blood. The pericardial sac has about 50 cc of liquid blood and the peritoneal cavity has about 200 cc of liquid blood. The soft tissues of left midclavicular region reveals hemorrhage over 1 ¼ x 1 inch. The soft tissues over the right 5<sup>th</sup> intercostal space shows hemorrhage over 1 ¼ x 1 inch and 2 x 2 inch hemorrhage is seen in the soft tissues over right 7<sup>th</sup> and 8<sup>th</sup> ribs. The soft tissues and muscles of sides of chest are reflected through the same incision and hemorrhage is seen near the entrance wound as well as where the bullet is recovered. Multiple incisions are placed on the inner aspect of anterior abdominal wall and no hemorrhage is seen. The primary incision is also extended over to both upper arms and there is no evidence of hemorrhage in the soft tissues or muscles.

A Y-shaped incision is placed on the back and is forked over to both buttocks and extended up to the heels. The soft tissues over 1<sup>st</sup> lumbar vertebra



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reveals hemorrhage over 2 x 1 inch area. No other hemorrhage is seen on the back.

### CENTRAL NERVOUS SYSTEM:

The scalp is reflected by usual intermastoid coronal incision. The soft tissues of scalp in the left temporal region reveals hemorrhage over 1 ½ x 1 inch. The left frontal region soft tissues of scalp reveal two areas of hemorrhage measuring up to ¼ inch in greatest dimension. The underlying skull bones and dura are intact. The brain weighs 1600 grams. The leptomeninges are thin and transparent. There is no evidence of epidural, subdural or subarachnoid hemorrhage. The sulci and gyri are unremarkable. The gray and white matter is well delineated. No lesions are seen within the brain parenchyma. The cerebellum, midbrain, pons and medulla are unremarkable. The blood vessels at the base of brain are thin walled and widely patent.

The soft tissues and muscles of back of neck in upper cervical region are reflected through the same incision and they fail to reveal hemorrhage. The tectorial membrane is incised and no hemorrhage is seen in the ligaments.



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There is no hemorrhage in the anterior paraspinal muscles. The cervical spine is intact on inspection and palpation.

### CARDIOVASCULAR SYSTEM:

The heart weighs 280 grams. The epicardium contains usual amount of adipose tissue. There is no dilatation of chambers. The valves are soft and pliable. The chordae tendineae and papillary muscles are unremarkable. The measurements of valvular circumferences are as follows: Tricuspid 11.2 cm, pulmonic 7 cm, mitral 10 cm and aortic 6 cm. The endocardium is smooth and glistening. Hemorrhage is seen in the myocardium near the apex over a  $\frac{3}{4} \times \frac{3}{4}$  inch area. The rest of the myocardium is brown and meaty. The right ventricle is 0.3 cm in thickness while the left ventricle is 1.2 cm in thickness. The coronary ostia are widely patent. The coronary arteries are normal in distribution, are thin walled and widely patent. The aorta and its major branches have smooth elastic walls. The inferior vena cava is unremarkable.

### NECK ORGANS:

The hyoid bone and thyroid cartilages are intact. The strap muscles are free of hemorrhage. The thyroid is of usual adult size and has brown colloidal



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parenchyma. The laryngeal and trachea mucosa is unremarkable. No foreign material is present in their lumina.

### **RESPIRATORY SYSTEM:**

The right lung weighs 440 grams while the left lung weighs 380 grams. Contusions of left lung and bullet involvement of right lung are described above. The rest of the visceral pleura is smooth and glistening. The preserved lung parenchyma is pink, soft and crepitant. The bronchi and pulmonary arteries are patent.

### **GASTROINTESTINAL SYSTEM:**

The esophagus is lined by intact mucosa. The stomach contains about 50 cc of tan mucoid material. No food particles are present. The gastric mucosa is intact and shows usual rugal pattern. The duodenum is free of ulceration. The jejunum, ileum and large intestines are unremarkable. The vermiform appendix is present.

### **HEPATOBIILIARY SYSTEM:**

The liver weighs 1310 grams. Through-and-through bullet wound involving the liver is described above. The rest of the capsule is smooth and



Department of  
Laboratories and Research  
10 Dana Road Valhalla, NY 10595

## AUTOPSY REPORT

**NAME: Miguel Angel Espinal Julbe**

**CASE NUMBER: M2015-2601**

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glistening. The preserved liver parenchyma shows usual lobular architecture, is brown and is of usual consistency. The gallbladder contains about 6 cc of bile.

The gallbladder mucosa is green and velvety.

### SPLEEN:

The spleen weighs 80 grams. Its capsule is smooth and glistening. The cut surface is dark purplish red and shows usual trabecular and follicular pattern.

### PANCREAS:

The pancreas lies in the usual anatomical site, is of usual adult size and has tan lobular parenchyma.

### ADRENALS:

The adrenals lie in their usual anatomical site, are of usual adult size and have golden yellow cortices and brown medullae.

### GENITOURINARY SYSTEM:

The right kidney weighs 110 grams while the left kidney weighs 130 grams. Their capsules strip with ease. The cortical surfaces are smooth. The corticomedullary junction is well delineated. The calices, pelves and ureters are patent. The urinary bladder contains about 40 cc of urine. The urinary bladder



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## AUTOPSY REPORT

**NAME: Miguel Angel Espinal Julbe**

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mucosa is unremarkable. The prostate is of usual adult size and is grossly unremarkable. The testes are descended in scrotum. Their cut surfaces are tan. The seminiferous tubules can be strung out with ease.

### MUSCULOSKELETAL SYSTEM:

The muscles are well developed. Fracture of left 6<sup>th</sup> and 7<sup>th</sup> ribs by bullet wound are described above. All other bones are intact on inspection and palpation.

### LYMPHATIC SYSTEM:

There is no evidence of lymphadenopathy.



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## AUTOPSY REPORT

**NAME: Miguel Angel Espinal Julbe**

**CASE NUMBER: M2015-2601**

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**CAUSE OF DEATH:**

BULLET WOUND OF CHEST INVOLVING LUNGS, HEART,  
DIAPHRAGM AND LIVER  
HOMICIDE

*Kunjata Ashar MD 12.24.2015*

Kunjata Ashar, M.D.

Pathologist/Chief Medical Examiner

KA:dmr

December 11, 2015



Department of  
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10 Dana Road Valhalla, NY 10595

## AUTOPSY REPORT

**NAME: Miguel Angel Espinal Julbe**

**CASE NUMBER: M2015-2601**

- 12 -

### TOXICOLOGY:

SAMPLES OF VITREOUS HUMOR, BLOOD, BILE, URINE, STOMACH CONTENTS, PORTIONS OF LIVER AND BRAIN ARE SUBMITTED FOR DRUG AND ALCOHOL ANALYSIS.

### HISTOLOGY:

THE TISSUES ARE SAVED.

SAMPLE OF BLOOD, SCALP AND PUBIC HAIR AND NAIL CLIPPINGS FROM BOTH HANDS ARE SUBMITTED FOR FORENSIC SCIENCE DIVISION.

GUNSHOT RESIDUE STUBS ARE COLLECTED AND SUBMITTED TO FORENSIC SCIENCE DIVISION.

PHOTOGRAPHS ARE TAKEN BY MR. KEITH MANCINI.

X-RAYS OF BODY ARE TAKEN.

KA

Kunjata Ashar, M.D.

Pathologist/Chief Medical Examiner

KA:dmr

December 11, 2015



Department of  
Laboratories and Research  
10 Dana Road Valhalla, NY 10595

## AUTOPSY REPORT

**NAME: Miguel Angel Espinal Julbe**

**CASE NUMBER: M2015-2601**

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### DESCRIPTION OF CLOTHING:

The hands had black metal handcuffs which are removed and given to Det. Whitney of Westchester County Police. There is a gray and red sweater with two labels, one reading AX ARMANI EXCHANGE and other M MADE IN HONG KONG 100 PERCENT LAMBS WOOL. There is a maroon colored T-shirt with the label, AX ARMANI EXCHANGE. There is red boxer underwear labeled, POLO RALPH LAUREN. There is a pair of gray corduroy pants label of GRADED GOODS H&M. The pants have brown and black belt with yellow metal buckle AX. There are ankle length white sweat socks. There is gray and red argyle patterned socks and a pair of tan color Aldo shoes. The hands were covered with paper bags. The bullet wound was covered with a round plastic. All above mentioned articles are labeled M2015-2601 E/A 12.9.15 and are saved.

KA

Kunjilata Ashar, M.D.

Pathologist/Chief Medical Examiner

KA:dmr

December 11, 2015



**TOXICOLOGY REPORT**

**Deceased:** Miguel Angel Espinal Julbe      Age: 36 Years      Dr. Kunjlata Ashar

**Samples Submitted for Analysis**

<input checked="" type="checkbox"/> Blood (Site: Heart) <input checked="" type="checkbox"/> Urine <input checked="" type="checkbox"/> Vitreous Humor <input checked="" type="checkbox"/> Liver <input checked="" type="checkbox"/> Bile <input checked="" type="checkbox"/> Brain <input checked="" type="checkbox"/> Gastric Contents <input checked="" type="checkbox"/> Blood-Femoral <input checked="" type="checkbox"/> Blood (Site: Right Chest Cavity) Received Date: <u>12/09/2015</u>
--

***Drug Screen (Confirmed and Unconfirmed)***

<u>Specimen</u>	<u>Result</u>	<u>Technique</u>
Blood	No drugs detected.	IA and TOF
Urine	No drugs detected.	IA or TOF

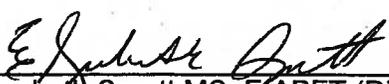
*All Confirmed Results Below*

*All documentation pertaining to this report is available in the laboratory.  
Explanation of terms: [www.criminaljustice.ny.gov/forensic/standardization/toxicology.html](http://www.criminaljustice.ny.gov/forensic/standardization/toxicology.html)*

***Quantitative Results***

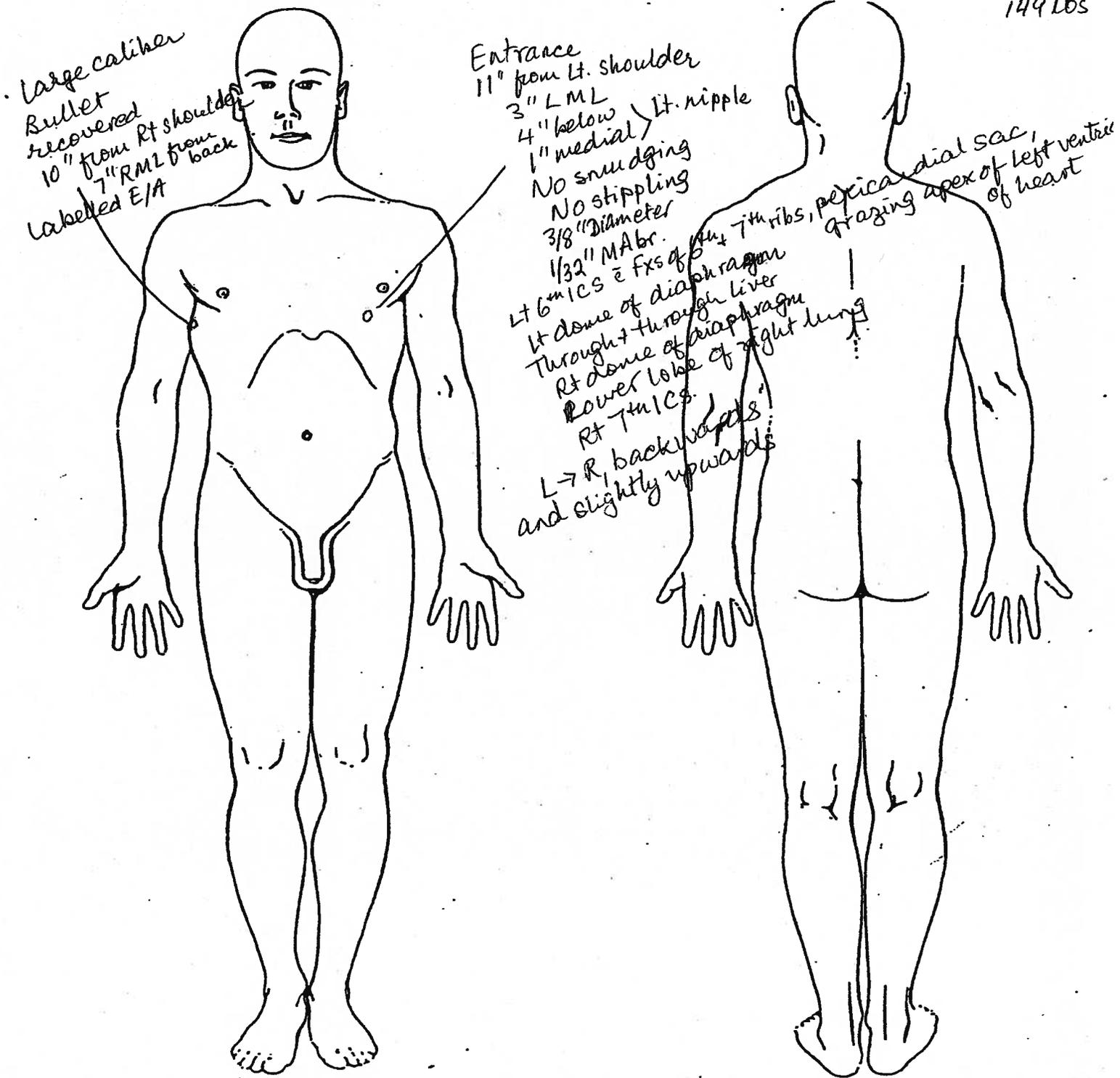
<u>Specimen</u>	<u>Component</u>	<u>Result</u>	<u>Technique</u>
Blood (Heart)	Ethanol	Negative	GCFID
Right Chest Cavity Blood used for Screening tests			

2015 DEC 24 AM 7:58

Signature:       12/23/15      Report Date: 12/23/15  
Elizabeth Spratt MS, F-ABFT (Director of Toxicology)

Name: Miguel Angel Espinal Date: 12.9.15 Race: H Age: 36 Sex: M

65"  
149 lbs



RT

Lt

Lt

RT

COD: Bullet wound of chest involving lungs, heart, diaphragm and liver.

GIVE NO INFORMATION ON THE CASE. REFER TO P.D. OR D.A.

OAG 022

Printed  
12/15/2015  
map

Westchester  
gov.com

Office of the Medical Examiner  
Valhalla, New York 10595

REPORT OF DEATH

REPORT RECEIVED BY Inv. Sean Mc Donnell		DATE 12/08/2015	TIME 2:59pm	M.E. CASE NO. M2015-2601	
REPORTED BY Det. Whitney			POLICE JURISDICTION/INCIDENT # Westchester County PD		
NAME OF DECEASED Miguel Angel Espanoza Espinal		D.O.B. [REDACTED]	AGE 36	SEX M	RACE Hispanic
RESIDENCE [REDACTED]		TEL. NO.		OCCUPATION	
PRONOUNCED BY #307 Medic Lt. Michael Becker Express	DATE 12/08/2015	TIME 12:00	ARRIVED VIA	DATE	TIME
PLACE OF DEATH Tibbits Park (bike trail), Yonkers (Off Saw Mill Parkway) Tibbetts				IF IN HOSPITAL	
HOSPITAL MR#	NEXT OF KIN (MOTHER)		TEL. NO. [REDACTED]		
LAST SEEN ALIVE	BY WHOM	TIME FOUND	BY WHOM		
IF INJURY Yes	DATE OF INJURY 12/08/2015	TIME OF INJURY 2/1150AM	INJURY AT WORK No		
DESCRIBE HOW INJURY OCCURRED GSW					
LOCATION (STREET ADDRESS, TOWN OR CITY, COUNTY, STATE) Tibbits Park (Bike trail), Yonkers NY					
CIRCUMSTANCES AND MEDICAL HISTORY (INCLUDE DOCTOR'S NAME AND WHEN LAST SEEN DECEASED)					
<p>Police report male suspect involved in police shooting dead in park near Saw Mill Parkway. Dec was shot at least once, possibly in the chest. Pronounced on scene. Case is still being investigated but police state they are ready for MEO response. DA Ward has been notified. Inv. Mc Donnell &amp; Dr. Milovanovic to scene. <u>Bristol</u></p> <p>12/8/15 4:46pm ARRIVED ON SCENE. REMOVED BODY WITH HANDS BAGGED BACK TO MEO AT 6:30pm. BODY LOCKED IN MORGUE COOLER UNTIL MORNING. - <u>SD</u></p> <p>12-9-15 3:30 AM: DET. MAN MAP WANTS TO ATTEND AUTOPSY - HE WILL CALL IN A.M. [REDACTED] - HE WILL TRY TO OBTAIN PERMISSION MFD</p>					
DISPOSITION <input checked="" type="checkbox"/> Accepted <input type="checkbox"/> No Case	POLICE NOTIFIED <input type="checkbox"/> Yes <input type="checkbox"/> No	TIME	M.E. ON DUTY	TIME NOTIFIED	
BODY MOVED TO			ADMISSION BLOOD AVAILABLE <input type="checkbox"/> Yes <input type="checkbox"/> No		

KA  
KA

GIVE NO INFORMATION ON THE CASE. REFER TO P.D. OR D.A.

GIVE NO INFORMATION ON THE CASE. REFER TO P.D. OR D.A.

Office of the Medical Examiner  
COUNTY OF WESTCHESTER  
Examination of Body

M2015-2601

pronounced about KA

3a. Date of Death:	Month	Day	Year	3b. Hour:		
	12	08	2015	12:00		<u>AM</u> P.M.
4c. Place of Death: Hospital or Institution (if neither, give address): Tibbetts Park, Yonkers						

I (autopsied) (examined) the body of Miguel Angel Espinal on the 9<sup>th</sup> day of December 2015 at 10:55 A.M. P.M.

27. Manner of death:						
Natural	Accident	<u>Homicide</u>	Suicide	Undeter. Circum.	Unclassified	Pending Investigation
30. Death was caused by:						
PART I. Bullet wound of chest involving lungs, heart, diaphragm and liver						
PART II. Other Significant Conditions:						
31a. If Injury, Date:			Hour	31b. Locality: (City, Town, County, State)		
Month	Day	Year	M			
31c. Describe how injury occurred:						
31d. Place:					31e. At work:	
					Yes	No
32d. Was decedent hospitalized in last 2 months:				33a. If female, was pregnant in last 6 months?:		
Yes	No	<u>Unknown</u>		Yes	No	Unknown
33b. Date of Delivery: Month Day Year						

Report to police:  Yes  No Photo by: Hilario Paulino

Reported to: \_\_\_\_\_ at: \_\_\_\_\_ by: \_\_\_\_\_

Signed: K. Ashar MD

Medical Examiner  
(OVER)

### Description of Body

Approximate Age:

Sex:

Color of Skin:

Development:

Height (est.meas.):

Weight (est.):

Body Build :

Nutrition:

Hair:

Scalp:

Pubic:

Face:

Other:

Eyes:

Color:

Conjunctivae:

Mouth:

Teeth:

Breasts:

External Genitalia:

Skin (Inc. scars, tattoos, anomalies, etc.):

External Pathology (Incl. trauma):

Rigidity:

Lividity (Sit

Body Heat (

OTHER FI

NAME: ESPINAL 15-2601  
 FUNERAL DIRECTOR: ORtiz F.H.  
 IDENTIFIED TO - OFFICE OF THE MEDICAL EXAMINER - BY: WEST. COUNTY P.D.  
 REMOVED BY: McDonald Hirs TIME: 5:45 DATE: 12/8/15  
 AGE: 36 CLOTHING: YES JEWELRY: NO  
 RETURNED BY: STAFF TIME: 8:15 DATE: 12-11-15

M2015-2601  
 Miguel Angel Espinal

REPORT OF DEATH INVESTIGATION

MEW #: 15-2601

DATE: 12/8/15

POLICE JURISDICTION: County

M.D. MEDICAL EXAMINER: BB/KA

REPORT BY: Bristol, ME

MEDICAL INVESTIGATOR: SM

DATE/TIME OF ARRIVAL AT SCENE: 4<sup>45</sup> PM on 12/8/2015

NAME OF DECEASED: Miguel Espinal

LAST KNOWN RESIDENCE: [REDACTED]

BODY FOUND AT: Tibbetts Brook Park, Yonkers

DOB/AGE: [REDACTED] 36 y/o SEX: M RACE: H; dark skin

PRONOUNCED DEAD BY:

DATE OF PRONOUNCEMENT: 12/8/15 TIME: AM  
PM

FACILITY WHERE PRONOUNCED: Scene

INFORMANTS: Detective Whitey, W. County, PP NEXT OF KIN: [REDACTED]  
PHONE #: [REDACTED]

PRESENT AT SCENE: Wanda Perez - Deputy Chief  
John Sullivan - Attorney General's Office Investigator  
[REDACTED]

CIRCUMSTANCES OF DEATH:

Police car chase into Yonkers from NY City; Car turned around going south bound in north bound lane, ended up in vehicular collision. Driver of car ran to Tibbetts park and was shot by police.

MEDICAL HISTORY: Unk.

PMD: Unk.  
PHONE #: Unk.

MEDICATIONS: Unk.

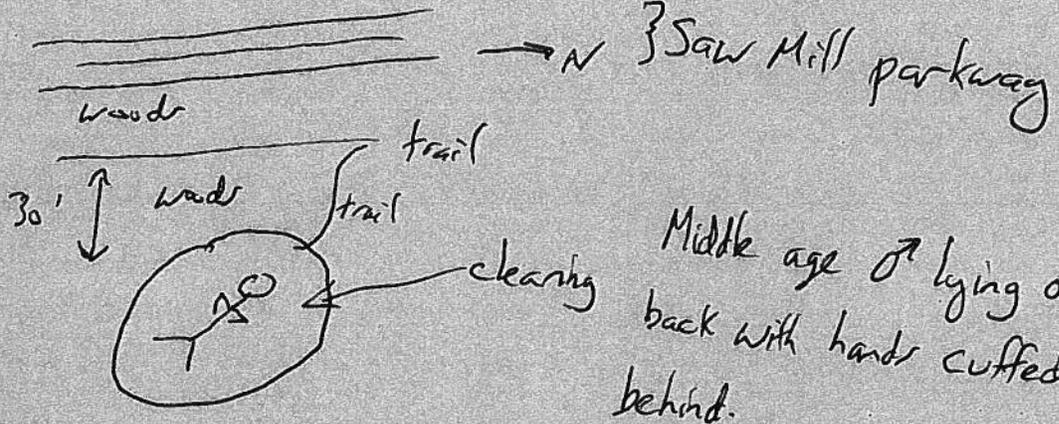
SCENE: 15' clearing in woods off road

AMBIENT TEMPERATURE: about 40°

OAG 026

DESCRIPTION/CONDITIONS:

SCENE DIAGRAM:



CLOTHING LIST: Boots, socks, pants, underwear, belt, shirt, sweater

No blood on clothing; back of sweater has leaves. Sweater is torn.

BODY DESCRIPTION: Tattoo on chest w. name

PHYSICAL FINDINGS:

Scratches + dirt on face, nose + mouth; Abrasion to inferior orbit, Eye.  
Back of head normal; no wound to back of torso  
GSH of chest in front; Covered with plastic.  
Blood trails down to abdomen.

RIGOR: ABSENT / SLIGHT / MODERATE / FULL / RECEDING

LIVOR: COLOR: Dark skinned; not visible  
SITE:  
BLANCHING: Y/N

ALGOR: Slightly warm to touch.

PERSONAL EFFECTS: (INDICATE THOSE FOUND ON BODY BY ME INVESTIGATOR AND THEIR DISPOSITION)

JEWELRY: Necklace beads; bracelet

WALLET/POCKET BOOK Billfold; \$563 in pockets } to police

Drivers license to NYPP.

KEYS No

Cell phone; Red bag 3"; Watch; shoe late; receipt

FUNERAL DIRECTOR'S STATEMENT OF AUTHORITY

This statement is made for the purpose of inducing the hospital or health care facility to release the death certificate and/or the remains of the deceased now named and with the knowledge that the hospital or health care facility will rely on the truth of the statements made herein.

*ME = VALHALLA*

THE CITY OF NEW YORK  
DEPARTMENT OF HOSPITALS

No death certificate and/or body will be released by the hospital to a funeral director until a copy of this form, properly executed, is on file.

IT IS HEREBY CERTIFIED THAT THE UNDERSIGNED HAS BEEN AUTHORIZED TO TAKE CHARGE OF:

The remains of: (Name of deceased) <b>MIGUEL ESPINAL JULBE</b>	who died at: ✓	on: (date) <b>12-8-15</b>
by: (Name of person granting authority) <b>BIENVENIDO N. JULBE</b>	whose address is: [REDACTED]	and who is the: (relationship) <b>FATHER</b>
remains to be removed from: Name of hospital, health care facility or mortuary)	to: (Name of residence, funeral chapel or cemetery) <b>R.G. ORTIZ FUNERAL HOME INC.</b>	at: (address) <b>524 SOUTHERN BLVD., BRONX, NY</b>

THIS AUTHORIZATION HAS NOT BEEN THE RESULT OF ANY SOLICITATION BY OR IN BEHALF OF THE UNDERSIGNED

Signature: (Funeral Director) <b>Diego A. Holguin</b>	New York State Funeral Director's Lic. No. <b>11644</b>
representing the firm of: <b>R.G. ORTIZ FUNERAL HOME INC.</b>	Address of firm <b>524 SOUTHERN BLVD., BRONX, NEW YORK</b>

FD-2029 (3/00)



WESTCHESTER COUNTY DEPARTMENT of PUBLIC SAFETY  
CRIME LABORATORY



FIREARMS MORGUE RECEIPT

FIU CASE#:	DATE:	CASE OFFICER:
------------	-------	---------------

RECEIPT FOR AUTOPSY EVIDENCE

Name of Deceased: MIGUEL ESPINAL M/H/36 DOB [REDACTED]  
 Address of Deceased: [REDACTED]  
 Place of Occurrence: TIBBETTS PARK (BIKE TRAIL) YONKERS  
 Date of Death: 12/08/2015 Date of Autopsy: 12/09/2015  
 M.E. Case Number: MEW/2015-2601  
 Jurisdiction/PD: W.C.P.D. Jurisdiction Case Number: 15-0504  
 Jurisdiction Case Officer: DET. DAVID WHITNEY

Evidence Received:

① 9MM/38 CAL. C&G. C/J BULLET - E/A

Received From: DR. KUNJLATA ASHAR Date Received: 12/09/2015

Received By:

D/S FRANK Nicosi  
Receiving Officer

[Signature]  
Signature

Det Anton Holman  
Receiving Officer

[Signature]  
Signature

Document Title:	Firearms Morgue Receipt	Document Control #	FA211	Approved by:	Laboratory Director
Issue Date:	05/30/2013	Revision #	N/A	Page info:	Page 1 of 1

All printed material is uncontrolled. It is the responsibility of the individual using printed material to ensure it is the most current revision.



Robert P. Astorino  
County Executive

Department of Laboratories and Research

Kunjilata Ashar, M.D.  
Pathologist/Medical Examiner

**POLICE IDENTIFICATION OF BODY**

STATE OF NEW YORK } ss.:  
COUNTY OF WESTCHESTER }

1) David Whitney \_\_\_\_\_ Shield# [REDACTED]  
(NAME OF OFFICER)

of Westchester County Police Department \_\_\_\_\_, states that(s)he is the  
(CITY/TOWN/VILLAGE)

Detective \_\_\_\_\_ who first saw the person of the deceased  
(POLICE OFFICER/DETECTIVE/ETC.)

Miguel Angel Espanoza \_\_\_\_\_, on 12/08, 2015,  
(NAME OF DECEASED)

at 12:40 AM/PM, at Tibbets Brook Park, Yonkers \_\_\_\_\_, who  
(LOCATION)

died at Tibbets Brook Park, Yonkers \_\_\_\_\_.  
(LOCATION)

2) That (s)he identified the body of the body of the deceased at the Office of the Medical Examiner  
in the presence of:

*inv.*  
James P. O'Connell Sr. #105-  
\_\_\_\_\_

Identification Date: Dec 10 2015 [REDACTED] at 10:00 AM/PM

\_\_\_\_\_  
SIGNATURE OF OFFICER

10 Dana Road Valhalla, New York 10595 Tel. (914) 231-1715 Fax (914) 231-1772	Medical Examiner Tel.: (914)231-1600 Fax (914) 231-1772	Forensic & Toxicology Tel. (914) 231.1630 Fax (914) 231-1798	Public Health Tel. (914) 231-1610 (Microbiology) Tel. (914) 231-1620 (Environmental) Fax (914) 231-1772
---	---	--	--



Robert P. Astorino  
County Executive

Department of Laboratories and Research

Kunjata Ashar, M.D.  
Pathologist/Medical Examiner

### RELEASE OF PROPERTY

DATE: December 9, 2015

TIME: 1:11 PM

ME#: M2015-2601

Name of Dec.: Miguel Angel Espinal

The following item(s) has been released by the Westchester County Medical Examiner's Office:

1 Black Metal Smith and Wesson Handcuff Serial No. M 100-1

Released by: Dr. Ashar

Signature: Kunjata Ashar MD

Received by: Sgt D. Whitney [Redacted] Rank Sgt

Signature: [Redacted]

10 Dana Road Valhalla, New York 10595 Tel. (914) 231-1715 Fax (914) 231-1772	Medical Examiner Tel.: (914)231-1600 Fax (914) 231-1772	Forensic & Toxicology Tel. (914) 231.1630 Fax (914) 231-1798	Public Health Tel. (914) 231-1610 (Microbiology) Tel. (914) 231-1620 (Environmental) Fax (914) 231-1772
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Robert P. Astorino  
County Executive

Department of Laboratories and Research

Kunjata Ashar, M.D.  
Pathologist/Medical Examiner

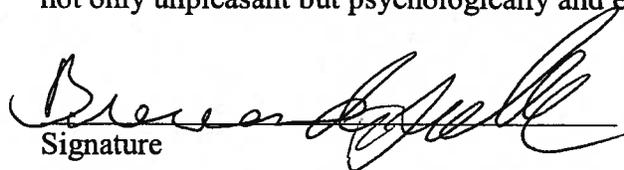
### IDENTIFICATION OF BODY

STATE OF NEW YORK            } ss.:  
COUNTY OF WESTCHESTER    }

I, Mercedes Julbe , age over 21, residing at [REDACTED] being duly sworn, and says:

That (s)he is the sister of the person whose body was found at 12:00 on 12/08/2015, and subsequently sent to the Medical Examiner's Facility; that deponent has seen the remains of said deceased, and has every reason to believe that the body now recorded at said facility as Miguel Angel Espinal is Miguel Ángel Espinal, age 36, who was last seen or heard from by deponent on 12/07/2015.

I release the Westchester County Medical Examiner, Westchester County, and the Westchester County Medical Examiner Facility from any and all liability resulting from my viewing of the body. By signing, I agree that I have been counseled that viewing a body may be not only unpleasant but psychologically and emotionally disturbing.

  
Signature

Identified to: Dr. Ashar

Date: December 9, 2015 at 1:59 PM

10 Dana Road Valhalla, New York 10595 Tel. (914) 231-1715 Fax (914) 231-1772	Medical Examiner Tel.: (914)231-1600 Fax (914) 231-1772	Forensic & Toxicology Tel. (914) 231.1630 Fax (914) 231-1798	Public Health Tel. (914) 231-1610 (Microbiology) Tel. (914) 231-1620 (Environmental) Fax (914) 231-1772
---	---	--	--

(Rev. 12-7-05/c)

# Evidence Transfer Receipt

OAG 032

**Custody Of** Evidence Disposition (Medical Examiner)

**Comments:** As per Dr. Ashar this items will be Hold in M.E Evidence storage until futher notice.

**Person / Location** Evidence Storage

**Date / Time** 12/10/2015 13:41:38

**Transferred By** Hilario Paulino

M2015-2601 #1.20  
Item Type: ME Evidence Cage  
PMSample Date: 12/10/2015 1:27:31  
Dr. Kunilata Ashar  
Miguel Angel Espinal Julbe

## Items Transferred

Lab Case	Agency Case ID	Submitting Agency	Item Description / Source	Item
M2015-2601			paper bag ME Evidence Cage  1 Sealed and labeled brown evidence bag containing 1 white body bag used to transport deceased from scene to ME Office.  1 Sealed and labeled brown evidence bag containing 1 White Sheet used under body bag.  1 Sealed and labeled envidence bag containing 1 Quik-Combo ECG Pads removed from body prior Autopsy.	1.20

  
\_\_\_\_\_



Department of Laboratories and Research  
 Division of Forensic Science  
 10 Dana Rd.  
 Valhalla, New York 10595  
 Phone: (914) 231-1630



Lab No. **F2015-2198**

Submission # **2**

OAG 033



**REQUEST FOR EVIDENCE EXAMINATION**

Submitting Agency: Medical Examiner (W.C.), NY

Jurisdiction: Yonkers

Recovery/Collection Date: 12/9/15

Name(s):

(D): Miguel Angel Espinal

(B)Business/(D)Deceased/(E)Elimination/(H)Hosp Subm/(J)Subject/

(M)ME Subm/(O)Other/(S)Suspect/(V)Victim/(X)Defendant

Agency ID#/MEW#: MEW2015-2601

Case Type: Death Investigation

Investigator Name: Dr. Ashar

Telephone #: 914-231-1600 Fax#:

Cross reference#:

Brief Description and Agency Item #/Property #.
Item # 3-containing sweater-1 GRAY AND RED SWEATER- Agency# 003
Item # 4-containing shirt-1 BURGUNDY T-SHIRT- Agency# 004
Item # 5-containing pants-1 GRAY PANTS WITH 1 BLACK AND BROWN BELT WITH A YELLOW METAL BUCKLE- Agency# 005
Item # 6-containing underwear-1 RED UNDERWEAR- Agency# 006
Item # 7-containing sock(s)-2 BLACK SOCKS, AND 2 LOW CUT WHITE SOCKS- Agency# 007
Item # 8-containing boot(s)-2 BROWN BOOTS- Agency# 008
Item # 9-containing Other-1 CLEAR CIRCULAR CHEST SEAL REMOVED FROM OVER WOUND.- Agency# 009
Item # 10-containing Bags over hands-2 BROWN PAPER BAGS USED TO COVER THE HANDS- Agency# 010
Item # 11-containing Other-TRACE PAPER USED TO LAY CLOTHING PRIOR AUTOPSY.- Agency# 011

**To be Completed Upon Submission**

Submitter:

*H Paulino*

Aut. Asst. Hilario Paulino

By signing this document the submitter agrees that the most appropriate test method(s) will be selected at the discretion of the laboratory.

Receiver:

*Tammi Jacobs Shulman*

Tammi Jacobs Shulman

Received: 12/10/2015 938

Contents of packaging are not inventoried at time of receipt.

## Westchester Laboratory Analysis Electronic Packing Slip

## Case Information

Sent electronically to Lab: (12/10/2015 @ 09:18)

Division of Forensic Sciences



## Department Case: MEW2015-2601 Submission # 2

- Department: Medical Examiner (W.C.), NY [0059] / User Name: Hilario Paulino
- Department Case: MEW2015-2601
- Submission Number: 2
- Case Officer Pick: Dr. Ashar
- Officer Name: Dr. Ashar
- Officer Phone: 231-1600
- Recovery Date: 12/09/2015
- Offense Location: Tibbits Park Yonkers
- Juris.: Yonkers
- Case Type: Death Investigation
- Has Prev Evid Been Submitted: Yes
- Case Comments: Police report male suspect involved in police shooting dead in park near Saw Mill Parkway.

F2015-2198

Case Type: Death Investigation  
 Received: 12/10/2015 by TLJ1  
 Inv Agency: Medical Examiner (W  
 Agency Case #: MEW2015-2601  
 Sub. By: Aut. Asst. Hilario Pau:

## Submission Information

- Delivery Type: Hand Delivered
- Date Sent: 12/10/2015
- Telephone#: 914-231-1600
- Is The Evidence Sealed: Yes
- Are The Seals Initialed: Yes

## Name Information

Name Type	Full Name	Date Of Birth	Sex	Race
Deceased	Espinal, Miguel Angel		Male	Hispanic

## Analysis Request Information

Item #	Package	Item Type Code	Item Description	Serial Number	Exam Requests	Evidence Recovered From
003	paper bag	[FB26]sweater	1 GRAY AND RED SWEATER		TR-GSR primer - other	Victim
004	paper bag	[FB22]shirt	1 BURGUNDY T-SHIRT		TR-GSR primer - other	Victim
005	paper bag	[FB24]pants	1 GRAY PANTS WITH 1 BLACK AND BROWN BELT WITH A YELLOW METAL BUCKLE		TR-Trace Examination	Victim
006	paper bag	[FB03]underwear	1 RED UNDERWEAR		TR-Trace Examination	Victim
007	paper bag	[FB27]sock(s)	2 BLACK SOCKS, AND 2 LOW CUT WHITE SOCKS		TR-Trace Examination	Victim
008	paper bag	[FB81]boot(s)	2 BROWN BOOTS		TR-Trace Examination	Victim
009	paper bag	[OTHER]Other	1 CLEAR CIRCULAR CHEST SEAL REMOVED FROM OVER WOUND.		TR-GSR primer - other	Victim

010	paper bag	[BAGHND] Bags over hands	2 BROWN PAPER BAGS USED TO COVER THE HANDS		CID-GSR Primer Analysis - Hands	Victim
011	paper bag	[OTHER]Other	TRACE PAPER USED TO LAY CLOTHING PRIOR AUTOPSY.		TR-Trace Examination	Victim

**F2015-2198**

Case Type: Death Investigation  
Received: 12/10/2015 by TLJ  
Inv Agency: Medical Examiner (W  
Agency Case #: MEM2016-2801  
Sub. By: Aut. Asst. Hilarie Pau



Department of Laboratories and Research  
 Division of Forensic Science  
 10 Dana Rd.  
 Valhalla, New York 10595  
 Phone: (914) 231-1630



Lab No. **F2015-2198**

Submission # **1**

OAG 036



**REQUEST FOR EVIDENCE EXAMINATION**

Submitting Agency: Medical Examiner (W.C.), NY

Jurisdiction: Yonkers

Recovery/Collection Date: 12/9/15

Name(s):

(D): Miguel Angel Espinal

(B)Business/(D)Deceased/(E)Elimination/(H)Hosp Subm/(J)Subject/

(M)ME Subm/(O)Other/(S)Suspect/(V)Victim/(X)Defendant

Agency ID#/MEW#: MEW2015-2601

Case Type: Death Investigation

Investigator Name: Dr. Ashar

Telephone #: 231-1600 Fax#:

Cross reference#:

**Brief Description and Agency Item #/Property #.**

Item # 1-containing ME Kit-Blood,Hair,Nail and Nailclipper.- Agency# 001

Item # 2-containing GSR stubs-GSR Stubs.- Agency# 002

**To be Completed Upon Submission**

Submitter:

Receiver:

*Roberto Carela*

A. A. Roberto Carela

*Tammi Jacobs Shulman*

Tammi Jacobs Shulman

*By signing this document the submitter agrees that the most appropriate test method(s) will be selected at the discretion of the laboratory.*

**Received:12/10/2015 901**

**Contents of packaging are not inventoried at time of receipt.**

Westchester Laboratory Analysis Electronic Packing Slip

**Case Information**

Sent electronically to Lab: (12/10/2015 @ 08:52)  
 Division of Forensic Sciences



**Department Case: MEW2015-2601 Submission # 1**

- Department: Medical Examiner (W.C.), NY [0059] / User Name: Roberto Carela
- Department Case: MEW2015-2601
- Submission Number: 1
- Case Officer Pick: Dr. Ashar
- Officer Name: Dr. Ashar
- Officer Phone: 231-1600
- Recovery Date: 12/09/2015
- Juris.: Yonkers
- Case Type: Death Investigation
- Has Prev Evid Been Submitted: No
- Case Comments: DEATH INVESTIGATION

**F2015-2198**

Case Type: Death Investigation  
 Received: 12/10/2015 by TLJ1  
 Inv Agency: Medical Examiner (W)  
 Agency Case #: MEW2015-2601  
 Sub. By: A. A. Roberto Carela

**Submission Information**

- Delivery Type: Hand Delivered
- Date Sent: 12/10/2015
- Telephone#: 231-1600
- Is The Evidence Sealed: Yes
- Are The Seals Initialed: Yes

**Name Information**

Name Type	Full Name	Date Of Birth	Sex	Race
Deceased	Espinal, Miguel Angel		Male	Hispanic

**Analysis Request Information**

Item #	Package	Item Type Code	Item Description	Serial Number	Exam Requests	Evidence Recovered From
001	plastic bag	[MEKIT]ME Kit	Blood, Hair, Nail and Nailclipper.		DNA-DNA Analysis	Victim
002	plastic bag	[GSRSTB]GSR stubs	GSR Stubs.		CID-GSR Primer Analysis - Hands	Victim



Robert P. Astorino  
County Executive

Department of Laboratories and Research

Kunjata Ashar, M.D.  
Pathologist/Medical Examiner

December 9, 2015

Westchester County Police  
Department of Public Safety  
George Longworth, Commissioner  
Saw Mill River Parkway  
Hawthorne, New York 10532

# M2015-2601

This office has investigated the death of Miguel Angel Espinal, who lived at 30 South West 2nd Ave Boca Raton, FL and died at Tibbetts Park (bike trail), Yonkers, on 12/08/2015.

Based on an investigation and a postmortem examination (~~with without~~) autopsy, the cause of death has been certified as:

**BULLET WOUND OF CHEST INVOLVING LUNGS, HEART, DIAPHRAGM AND LIVER**

**HOMICIDE**

Signed: Kunjata Ashar, M.D.

Cc: Attorney General

Medical Examiner

Please furnish this office with a copy of the Police Report

10 Dana Road  
Valhalla, New York 10595  
Tel. (914) 231-1715  
Fax (914) 231-1772

Medical Examiner  
Tel.: (914) 231-1600  
Fax (914) 231-1772

Forensic & Toxicology  
Tel. (914) 231.1630  
Fax (914) 231-1798

Public Health  
Tel. (914) 231-1610 (Microbiology)  
Tel. (914) 231-1620 (Environmental)  
Fax (914) 231-1772



WESTCHESTER COUNTY DEPARTMENT of PUBLIC SAFETY  
 CRIME LABORATORY  
 1 Saw Mill River Parkway  
 Hawthorne, New York 10532



**FIREARMS SECTION**  
**ANALYSIS REPORT**

December 16, 2015

Det. David Whitney  
 Westchester County Department of Public Safety  
 1 Saw Mill River Parkway  
 Hawthorne, New York 10532

This is to certify that the foregoing is a true and complete copy (photograph) of a record on file with the Westchester County Department of Public Safety

*Am*

This is to inform you of the results of the Firearms Examination conducted by the Westchester County Department of Public Safety Crime Laboratory.

Date Submitted: 12/09, 11, 15/2015 Submitted By: Det. Edward Kelch  
Det. Richard van der Meulen  
 Department: Westchester County DPS Dept. Case #: 2928-15  
 FIU Case #: 15-0504 FIU Officer Assigned: Det. Arthur R. Holzman

**MORGUE EVIDENCE** RECEIVED FROM DR. ASHAR, WESTCHESTER COUNTY ME'S OFFICE  
 ON 12/09/2015, MEW 2015-2601  
**ITEM #M-1** 01-9MM/38 CAL. DEFORMED C/J BULLET. 15-504 M-1.

**ITEM #1A** **GUN:** 9MM LUG. CAL. SIG / SAUER FIREARMS, MODEL: P226, SEMI-AUTOMATIC PISTOL, SERIAL NUMBER UU700732, MARKED FS# 15-504 ARH #1A, 2 MAGAZINES INCLUDED (CAPACITY 15 EACH), BLUED FINISH, EVIDENCE OF DISCHARGE PRESENT IN THE BARREL.

**ITEM #2A** **MAGAZINE:** MARKED FS# 15-504 ARH #2A.

**ITEM #2B** **MAGAZINE:** MARKED FS# 15-504 ARH #2B.

**ITEM #3A/B** **AMMO WITH GUN:** 30-9MM LUG. CAL. SPEER+P, WP, CJ-HP CTGES. FS# 15-504 ARH #3A.

**ITEM #3B** **TEST:** 02-8MM LUG. CAL. SPEER+P, WP, CJ-HP CTGES. 15-504 H1 & H2. (TAKEN FROM AMMO WITH GUN)

**RESULTS:** **GUN IS OPERABLE**

**ITEM #4A** **GUN:** 9MM LUG. CAL. SMITH & WESSON FIREARMS, MODEL: 5946, SEMI-AUTOMATIC PISTOL, SERIAL NUMBER BEM1461, MARKED FS# 15-504 ARH #4A, 2 MAGAZINES INCLUDED (CAPACITY 15 EACH), WHITE METAL FINISH, NO EVIDENCE OF DISCHARGE PRESENT IN THE BARREL.

**ITEM #5A** **MAGAZINE:** MARKED FS# 15-504 ARH #5A.

**ITEM #5B** **MAGAZINE:** MARKED FS# 15-504 ARH #5B.

<b>Document Title:</b>	Firearms Test Report	<b>Document Control #</b>	QA125	<b>Approved by:</b>	Laboratory Director
<b>Issue Date:</b>	05/14/2015	<b>Revision #</b>	1	<b>Page info:</b>	Page 1 of 2

ID Unit Case #: 15-0504  
 Agency: Westchester County Department of Public Safety  
 Agency Case #: 2928-15  
 December 16, 2015

ITEM #6A/B AMMO WITH GUN: 31-9MM LUG. CAL. SPEER+P, WP, CJ-HP CTGES. FS# 15-504 ARH #6A.

ITEM #6B TEST: 02-9MM LUG. CAL. SPEER+P, WP, CJ-HP CTGES. 15-504 H3 & H4.  
 (TAKEN FROM AMMO WITH GUN)

RESULTS: GUN IS OPERABLE

ITEM #1 SCENE EVIDENCE: 01-9MM LUG. CAL. SPEER+P, WP, DISCH. CTGE CASE. 15-504 ARH 1.

MICROSCOPIC  
 EXAMINATION:

THE ABOVE LISTED EVIDENCE (ITEMS #1 AND M-1) WERE EXAMINED AND COMPARED TO THE TEST SPECIMENS FROM ITEM #1A (9MM SIG/SAUER) AND ITEM #4A (9MM S&W) WITH THE FOLLOWING RESULTS.

POSITIVE COMPARISON / IDENTIFICATION ITEMS #M-1 AND #1 WERE BOTH FIRED FROM THE 9MM SIG/SAUER PISTOL (ITEM #1A) BASED ON THE AGREEMENT OF CLASS CHARACTERISTICS AND PATTERNS OF SUFFICIENT CORRESPONDING INDIVIDUAL CHARACTERISTICS.

ELIMINATION BASED ON THE DISAGREEMENT OF CLASS CHARACTERISTICS ITEMS #1 AND M-1 ARE ELIMINATED AS HAVING BEEN FIRED FROM ITEM #4A (9MM S&W).

*There is a forensic case file associated with this report. This case file may contain additional information such as which test methods were used, the results of each test, and may be comprised of worksheets, images, analytical data, and other documents.*

*All comparative examination results are opinions and interpretations based on the training, experience, and expertise of the analyst(s).*

*Definitions of terms used in this report can be located within the Report Standardization Manual at [www.criminaljustice.ny.gov/forensic/labreportstandards.htm](http://www.criminaljustice.ny.gov/forensic/labreportstandards.htm)*

  
 Det. Arthur R. Holzman  
 Senior Firearms Examiner

Document Title:	Firearms Test Report	Document Control #	QA125	Approved by:	Laboratory Director
Issue Date:	02/26/2013	Revision #	N/A	Page info:	Page 2 of 2



WESTCHESTER COUNTY DEPARTMENT of PUBLIC SAFETY  
 CRIME LABORATORY  
 1 Saw Mill River Parkway  
 Hawthorne, New York 10532



**FIREARMS SECTION**  
**ANALYSIS REPORT**

December 17, 2015

Det. David Whitney  
 Westchester County Department of Public Safety  
 1 Saw Mill River Parkway  
 Hawthorne, New York 10532

This is to inform you of the results of the Firearms Examination conducted by the Westchester County Department of Public Safety Crime Laboratory.

Date Submitted: 12/11/15 Submitted By: Det Edward Kelch  
 Westchester County Department of Public Safety Dept. Case #: 2928-15  
 FIU Case #: 15-0504 FIU Officer Assigned: Det. Arthur Holzman

**DISTANCE DETERMINATION PATTERN TESTS WERE CONDUCTED WITH THE FOLLOWING FIREARM AND AMMUNITION:**

**ITEM #1A**

**01-9MM LUG CAL. SIG SAUER, MODEL P226 SERIAL # UU700732 PISTOL**

**AMMUNITION USED: 13-9MM LUG CAL. SPEER, +P, WP, CJ-HP CARTRIDGES  
 (TAKEN FROM AMMO WITH GUN)**

**TEST PATTERNS**

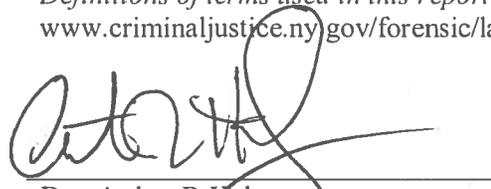
**THE ABOVE AMMUNITION WAS FIRED AT THE FOLLOWING INTERVALS:**

**"CONTACT", 2", 4", 6", 8", 10", 12", 14", 14" 40 DEGREE ANGLE, 14" 65 DEGREE ANGLE, 18", 24", 30"**

*There is a forensic case file associated with this report. This case file may contain additional information such as which test methods were used, the results of each test, and may be comprised of worksheets, images, analytical data, and other documents.*

*All comparative examination results are opinions and interpretations based on the training, experience, and expertise of the analyst(s).*

*Definitions of terms used in this report can be located within the Report Standardization Manual at [www.criminaljustice.ny.gov/forensic/labreportstandards.htm](http://www.criminaljustice.ny.gov/forensic/labreportstandards.htm)*

  
 Det. Arthur R. Holzman  
 Senior Firearms Examiner

Document Title:	Firearms Test Report	Document Control #	QA125	Approved by:	Laboratory Director
Issue Date:	05/14/2015	Revision #	1	Page info:	Page 1 of 1

	<b>DEPARTMENT OF LABORATORIES AND RESEARCH</b> Division of Forensic Sciences Valhalla, NY 10595	LAB NO: F2015-2198 Report #: 6
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SOURCE OF REQUEST: Westchester County, NY Police Department AGENCY NO. 2928-15  
Medical Examiner (W.C.), NY MEW2015-2601

DELIVERED BY: A. A. Roberto Carela DATE & TIME: 12/10/2015 @ 0901 hrs.  
Aut. Asst. Hilario Paulino 12/10/2015 @ 0938 hrs.  
Det Kelch # 2080 12/17/2015 @ 1414 hrs.

DECEASED: Miguel Espina

OTHER: Garthlett James, Romeo Francis

Item 1 was submitted by A. A. Roberto Carela of the Medical Examiner (W.C.), NY on 12/10/2015 at 0901 hours.  
 Items 3- 9 and 11 were submitted by Aut. Asst. Hilario Paulino of the Medical Examiner (W.C.), NY on 12/10/2015 at 0938 hours.  
 Items 26-36 were submitted by Det Kelch # 2080 of the Westchester County, NY Police Department on 12/17/2015 at 1414 hours.

#### SPECIMEN:

- 3.paper bag containing:
  - 3.1.one gray and red sweater
- 4.paper bag containing:
  - 4.1.one burgundy colored t-shirt

As per the Westchester County Department of Public Safety Crime Laboratory Firearms Identification Unit, a "9MM LUG CAL. SIG SAUER. MODEL. P226...PISTOL" was used with "9MM LUG CAL. SPEER, -P, WP, C3-HP" ammunition to produce test patterns at contact, 2, 4, 6, 8, 10, 12, 14, 18, 24 and 30 inches. In addition, test patterns at 40° and 65° angles at 14 inches were produced. Please refer to their report for additional information. The following items were submitted:

- 26.plastic bag containing:
  - 26.1 a manila folder marked " 2" " with an attached test pattern cloth
- 27.plastic bag containing:
  - 27.1.a manila folder marked " 4" " with an attached test pattern cloth
- 28.plastic bag containing:
  - 28.1 a manila folder marked " 6" " with an attached test pattern cloth
- 29.plastic bag containing:
  - 29.1 a manila folder marked " 8" " with an attached test pattern cloth
- 30.plastic bag containing:
  - 30.1 a manila folder marked " 10" " with an attached test pattern cloth
- 31.plastic bag containing:
  - 31.1 a manila folder marked " 12" " with an attached test pattern cloth
- 32.plastic bag containing:
  - 32.1 a manila folder marked " 14" " with an attached test pattern cloth
  - 32.2 a manila folder marked " 14" 40° ANGLE..." with an attached test pattern cloth
  - 32.3 a manila folder marked " 14" 65° ANGLE..." with an attached test pattern cloth
- 33.plastic bag containing:
  - 33.1 a manila folder marked " 18" " with an attached test pattern cloth
- 34.plastic bag containing:
  - 34.1 a manila folder marked " 24" " with an attached test pattern cloth
- 35.plastic bag containing:
  - 35.1 a manila folder marked " 30" " with an attached test pattern cloth

36. plastic bag containing:

36.1. a manila folder marked "CONtAct" with an attached test pattern cloth

The following items were received from and previously described by Jaime Hocy of the Forensic Biology section:

1.4. left hand nail clippings

1.5. right hand nail clippings

For additional information regarding other items in this case, please refer to reports by Jaime Hocy as well as an additional report by Daniel Rothenberg.

#### REQUEST:

Examine for trace evidence. Examine for gunshot propellant residue. Distance determination.

#### RESULTS / INTERPRETATIONS:

Gross and stereomicroscopic examinations were conducted and the following observations were made.

1.4) Six (6) clippings are present. Trace evidence was observed and was collected. The collected trace evidence consists of fibers, minerals and other trace materials.

1.5) Five (5) clippings are present. Trace evidence was observed and was collected. The collected trace evidence consists of fibers, minerals and other trace materials.

Two small particles from the trace evidence from the left hand nail clippings (item 1.4) and one small particle from the trace evidence from the right hand nail clippings (item 1.5) were tested to see if they were gunpowder particles. Infrared instrumentation was used and none of the three particles had the chemical composition of gunpowder.

Trace evidence was observed and was collected from the sweater (item 3.1) and the t-shirt (item 4.1). The collected trace evidence from each item consists of fibers, hair-like fibers, vegetation, minerals and other trace materials.

More than sixty five (65) particles with stereomicroscopic characteristics of gunpowder were observed in trace evidence from the sweater and more than two hundred thirty (230) particles with stereomicroscopic characteristics of gunpowder were observed in trace evidence from the t-shirt. Further instrumental analysis to confirm the particles' chemical compositions was not conducted.

Gross and stereomicroscopic observations as well as infrared photography were used to examine the sweater and the t-shirt.

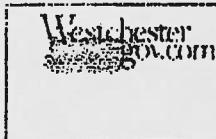
There were numerous holes on the right sleeve of the sweater and a few holes on the lower right side. There were no characteristics indicating the passage of a projectile through any of the holes.

There were two adjacent holes (holes #1 and #2) in the left front near the midsection of the t-shirt. A few particles of possible gunpowder were observed mostly around Hole #1 which was the larger of the two holes and the hole more toward the center of the shirt.

The Modified Griess-Walker test for nitrites was conducted. If particulate nitrites are detected by the test, it is indicative of the presence of burnt or partially burnt gunpowder. A pattern of particulate nitrites was detected around holes #1 and #2.

The Dithiooxamide test for copper was conducted and no copper was detected around holes #1 and #2.

OAG 044



DEPARTMENT OF LABORATORIES AND RESEARCH  
Division of Forensic Sciences  
Valhalla, NY 10595

LAB NO: F2015-2198

Report #: 6

The Sodium Rhodizonate test for lead was conducted and specks of lead were detected around holes #1 and #2. No vaporous lead was detected.

The test patterns (items 26.1-36.1) were photographed.

The Modified Griess-Walker chemical test for burnt or partially burnt gunpowder particles was conducted on the following test patterns: 26.1 (2 inches), 27.1 (4 inches), 28.1 (6 inches), 29.1 (8 inches), 30.1 (10 inches), 31.1 (12 inches), 32.1-32.3 (14 inches, 14 inches at 40°, 14 inches at 65°), 33.1 (18 inches) and 34.1 (24 inches).

The Sodium Rhodizonate chemical test for lead was conducted on the same test patterns as above.

The gunpowder particle distribution and the lead deposition on the test patterns were compared to the results obtained from the same testing on holes 1 and 2 on the t-shirt (item 4.1).

Similar residue patterns were observed between the 14 inch and 18 inch test patterns.

#### CONCLUSIONS / INTERPRETATIONS:

Based on comparisons to the test fire patterns received (items 26.1-36.1) the residue pattern on the t-shirt (item 4.1) indicates a muzzle-to-target distance between fourteen (14) and eighteen (18) inches.

The collected trace evidence will be retained at the Forensic Laboratory pending possible future analysis and/or comparison to other submissions.

Daniel Rothenberg  
Forensic Science Specialist  
2/4/2016

This report does not constitute the entire case file. Copies of notes, worksheets, and other supporting materials related to this case are available upon request. For definitions of standardized terms used in reporting, go to [www.criminaljustice.ny.gov/forensic/labreportstandards.htm](http://www.criminaljustice.ny.gov/forensic/labreportstandards.htm).

SOURCE OF  
REQUEST:Medical Examiner (W.C.), NYAGENCY  
NO.MEW2015-2601

DELIVERED BY:

A. A. Roberto Carela

DATE &amp; TIME:

12/10/2015 @ 0901 hrs.

SOURCE(S):

SUBJECT(S):

Miguel Angel Espinal

VICTIM(S):

## SPECIMEN:

2) One (1) plastic bag containing an envelope marked "... 15-2601..." containing three (3) GSR stubs.

2.1) One (1) GSR stub marked "...LEFT HAND...".

2.2) One (1) GSR stub marked "...RIGHT HAND...".

2.2) One (1) GSR stub marked "NEGATIVE CONTROL."

## REQUEST:

Examination for the presence of gunshot primer residue.

## INTERPETATIONS/CONCLUSIONS:

2.1) Without a comparison to a cartridge case, no conclusion about the particles detected on this sample can be reached at this time.

2.2) Without a comparison to a cartridge case, no conclusion about the particles detected on this sample can be reached at this time.

2.3) No particles consistent with gunshot primer residue were detected on the sample.

The above samples were analyzed by the use of scanning electron microscopy/energy dispersive spectroscopy utilizing both automated and manual modes of analysis.

This report does not constitute the entire case file. Copies of notes, worksheets, and other supporting materials related to this case are available upon request.

I CERTIFY THAT THIS IS A TRUE AND CORRECT REPORT Signed



---

Maurice Woodbyne  
Forensic Scientist  
12/15/2015

Westchester gov.com	DEPARTMENT OF LABORATORIES AND RESEARCH	LAB NO: F2015-2198
	Division of Forensic Sciences Valhalla, NY 10595	Report #: 3

SOURCE OF REQUEST: Westchester County, NY Police Department AGENCY NO. 2928-15

DELIVERED BY: Det Kelch # 2080 DATE & TIME: 12/16/2015 @ 1519 hrs.

SOURCE(S):  
SUBJECT(S): Miguel Angel Espinal  
Romeo Francis, Garthlett James

## SPECIMEN:

25) One (1) plastic bag marked "...2928-15..." containing:

25.1) One (1) steel discharged cartridge marked "SPEER 9mm LUGER +P".

Prepared one (1) GSR stub (25.1.1) from item 25.1.

## REQUEST:

Examination for the presence of gunshot primer residue.  
Comparison to GSR stubs items 2.1 and 2.2 (Refer to Report # 4).

## INTERPETATIONS/CONCLUSIONS:

- 2.1) Particles that have composition consistent with gunshot primer residue are present on the sample. Five (5) tertiary particles were detected by the instrument. Five (5) of these particles were selected for examination. Four (4) particles are non-crystalline in morphology and contain lead, barium and antimony, and thus are highly specific to primer residue. Furthermore, these particles are similar in chemical composition to those present on the recovered cartridge case "SPEER 9mm LUGER +P" (item 25.1).
- 2.2) Particles that have composition consistent with gunshot primer residue are present on the sample. One (1) tertiary particle was detected by the instrument and was selected for examination. This particle is non-crystalline in morphology and contains lead, barium and antimony, and thus is highly specific to primer residue. Furthermore, this particle is similar in chemical composition to those present on the recovered cartridge case "SPEER 9mm LUGER +P" (item 25.1).

The above samples were analyzed by the use of scanning electron microscopy/energy dispersive spectroscopy utilizing both automated and manual modes of analysis.

This report does not constitute the entire case file. Copies of notes, worksheets, and other supporting materials related to this case are available upon request.

I CERTIFY THAT THIS IS A TRUE AND CORRECT REPORT Signed



Maurice Woodbyne  
Forensic Scientist  
12/31/2015



Westchester gov.com	DEPARTMENT OF LABORATORIES AND RESEARCH	LAB NO: F2015-2198
	Division of Forensic Sciences Valhalla, NY 10595	Report #: 4 Amendment to Report # 1

SOURCE OF REQUEST: Medical Examiner (W.C.), NY AGENCY NO. MEW2015-2601

DELIVERED BY: A. A. Roberto Carela DATE & TIME: 12/10/2015 @ 0901 hrs.

SOURCE(S):  
SUBJECT(S): Miguel Angel Espinal  
VICTIM(S):

-----  
AMENDED REPORT

## SPECIMEN:

2) One (1) plastic bag containing an envelope marked "...15-2601..." containing three (3) GSR stubs.

2.1) One (1) GSR stub marked "...LEFT HAND...".

2.2) One (1) GSR stub marked "...RIGHT HAND...".

2.3) One (1) GSR stub marked "NEGATIVE CONTROL..".

## REQUEST:

Examination for the presence of gunshot primer residue.

## INTERPETATIONS/CONCLUSIONS:

2.1) Without a comparison to a cartridge case, no conclusion about the particles detected on this sample can be reached at this time.

2.2) Without a comparison to a cartridge case, no conclusion about the particles detected on this sample can be reached at this time.

2.3) No particles consistent with gunshot primer residue were detected on the sample.

The above samples were analyzed by the use of scanning electron microscopy/energy dispersive spectroscopy utilizing both automated and manual modes of analysis.

This report does not constitute the entire case file. Copies of notes, worksheets, and other supporting materials related to this case are available upon request.

I CERTIFY THAT THIS IS A TRUE AND CORRECT REPORT Signed



Maurice Woodbyne  
Forensic Scientist  
12/23/2015



Westchester gov.com	DEPARTMENT OF LABORATORIES AND RESEARCH Division of Forensic Science Valhalla, NY 10595	LAB NO: F2015-2198 Report #: 5
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AGENCY: Medical Examiner (W.C.), NYAGENCY NO.: MEW2015-2601VICTIM(S): Miguel EspinalDATE SUBMITTED: 12/10/2015

---

**ITEMS EXAMINED:**

- 1) One plastic bag "...MEW2015-2601...1..." containing:
  - 1.1) known blood sample "...Miguel Angel Espinal..."
  - 1.2) known head hair "...Miguel Angel Espinal..."
  - 1.3) known pubic hair "...Miguel Angel Espinal..."
  - 1.4) left hand nail clippings "...Miguel Angel Espinal...". There is no suspicious staining present.
  - 1.5) right hand nail clippings "...Miguel Angel Espinal...". There is no suspicious staining present.

Also included is one sealed package containing one pair of nail clippers.

**METHODOLOGY USED:** See Results/Conclusions for testing performed.

---

**RESULTS/CONCLUSIONS:**

A dried bloodstain was prepared from Item 1.1 and will be preserved in the laboratory for possible DNA analysis.

For a complete description and additional results of analysis of Item 1.4 and Item 1.5, please refer to the Trace Evidence report by Daniel Rothenberg of the Forensic Trace evidence section of the laboratory.

**DISPOSITION OF EVIDENCE:**

Samples of the above listed items are retained at the laboratory.



---

Jaime Hoey  
Forensic Scientist  
12/24/2015

*Please refer to the last page for notes and explanation of terms.*

## SEROLOGY REPORT DEFINITIONS and NOTES

Presumptive test = A non-confirmatory test used for detecting the possible presence of biological fluids such as blood, semen, saliva and urine.

Blood = the biological fluid that transports oxygen throughout the body. It is composed of different cell types including red blood cells and white blood cells.

Leucomalachite green (LMG) = presumptive test for the possible presence of blood. However, there are other non-blood materials that may react with LMG as well.

Semen = the male reproductive fluid that is composed of spermatozoa and seminal plasma which contains enzymes such as Acid Phosphatase and proteins such as P30/Prostate Specific Antigen.

Acid phosphatase (AP) = an enzyme that is found in semen. Detection of acid phosphatase in a sample is a presumptive indication that semen may be present. However, there are other biological fluids that contain acid phosphatase as well.

Prostate specific antigen (PSA) = A protein (also known as P30) produced by the prostate gland and found in semen. PSA concentration in semen is typically in levels far in excess of those found in other fluids.

Spermatozoa = the male reproductive cell that can be found in semen. They are identified through microscopic techniques which confirm the presence of semen.

Saliva = a biological fluid that is a product of the salivary glands of the mouth.

Amylase = an enzyme that is found in saliva. Detection of amylase in a sample is a presumptive indication that saliva may be present. However, there are other biological fluids that contain amylase as well.

Urine = a biological fluid waste product.

Epithelial cells = cells found throughout the human body, which include skin cells and other cells lining interior surfaces.

Alternate light source (ALS) = a light source that assists in the visualization of possible biological fluid stains.

RSID = Rapid Stain Identification. Immuno-Chromatographic Lateral Flow Strip Test.

This report does not constitute the entire case file. Copies of notes, worksheets, and other supporting materials related to this case are available upon request. This includes the Chain of Custody and other Quality Assurance documentation.

Please note: Additional items/samples in this case may not have been tested at this time, however additional analysis can be performed upon consultation with the laboratory.



850 Pasquinelli Drive • Westmont, Illinois 60559-5539  
630-887-7100 • Fax: 630-887-7417

6 December 2016

Mr. Joshua Gradinger  
New York State Attorney General's office  
320 Broadway  
New York, NY 10271

**Subject: Review of Westchester County Laboratory Reports-  
Miguel Angel Espinal**

**Re: McCrone Associates Project MA61549**

Dear Mr. Gradinger:

**ASSIGNMENT**

On 29 November 2016 you submitted three reports originating from the Department of Laboratories and Research, Division of Forensic Sciences, Valhalla, NY 10595. The laboratory number was identified as F2015 – 2198. The reports were identified as Report #: 3, report #: 4 amendment to report #1, and report #: 5.

You requested that I review the reports and provide comments/opinions related to gunshot residue (GSR) analysis results of samples taken from subject Miguel Angel Espinal and one cartridge case.

**BACKGROUND INFORMATION ON GUNSHOT RESIDUE FORMATION AND DEPOSITION**

When the gun is fired, a firing pin is released and strikes the primer cap on the back side of the cartridge case. Chemical compounds, composed of lead (Pb), barium (Ba), and antimony (Sb) materials ignite and direct a flame through a hole in the primer cap to ignite the propellant/gunpowder within the cartridge. When the propellant/gunpowder burns it produces large quantities of gas and the internal pressure builds up to the point where the bullet is ejected from the cartridge case down the barrel of the gun. This entire action takes place within fractions of a second and results in a smoke plume seen coming from various openings in the gun, such as the barrel, trigger finger area, the cartridge ejection port (if from a semi- automatic pistol) or the cartridge cylinder (if from a revolver). In general, the smoke plume can travel up to 3 to 4 feet from the gun. Particles that have re-condensed from the vapor of the smoke plume can then deposit on objects within that area. The chemical compounds from the primer cap re-condense from the vapor phase into solid particles containing all three elements

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Pb/Ba/Sb, or any combination of two of the elements, or even one of the elements. A typical size range of particles is 1 to 10  $\mu\text{m}$ , which is about 1/8 the diameter of a human hair. The ASTM<sup>1</sup> and SWGGSR<sup>2</sup> guidelines consider particles containing all three elements (a.k.a. Tri-component, 3-component) as *characteristic* of gunshot residue. Particles *consistent* with gunshot residue contain one or two (a.k.a. single-component or 2-component) of the three elements but these types of particles may also originate from other environmental sources unrelated to a gunshot.

## **REPORT REVIEWS/COMMENTS/OPINIONS**

Reports #3 and #4 are related to GSR analysis, whereas report #5 deals with other subjects unrelated to GSR and was therefore not reviewed.

Report #4 Amendment to Report #1, was issued by forensic scientist Maurice Woodbyne on 12/23/2015. GSR stub samples were analyzed by scanning electron microscopy (SEM)/energy dispersive spectrometry (EDS): "... LEFT HAND...", "... RIGHT HAND...", and "Negative Control". In the INTERPRETATIONS/CONCLUSIONS section of the report, for the LEFT HAND (2.1) and RIGHT HAND (2.2) GSR stubs Mr. Woodbyne stated "Without comparison to a cartridge case, no conclusion about the particles detected on this sample can be reached at this time." I found it curious that Mr. Woodbyne determined that it would be necessary to compare the results to a cartridge case; I inferred that meant potential GSR particles were detected but for some reason the comparison to GSR particles from a cartridge case would be necessary for confirmation. He also stated that no particles consistent with gunshot primer residue were detected on the NEGATIVE CONTROL sample.

Report #3 was issued by forensic scientist Maurice Woodbyne on 12/31/2015. For this analysis, a GSR stub was prepared from one steel discharged cartridge marked "SPEER 9 mm Luger + P". SEM/EDS analysis was conducted on the stub for comparison to the analysis results obtained from the LEFT HAND and RIGHT HAND GSR stubs referred to in report #4 Amendment to Report #1. Now in his INTERPRETATIONS/CONCLUSIONS section, Mr. Woodbyne reports:

*2.1) Particles that have composition consistent with gunshot primer residue are present on the sample. Five (5) tertiary particles were detected by the instrument. Five (5) of these particles were selected for examination. Four (4) particles are non-crystalline in morphology and contain lead, barium and antimony, and thus are highly specific to primer residue. Furthermore, these particles are similar in chemical composition to those present on the recovered cartridge case "SPEER 9 mm Luger + P" (item 25.1).*

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*2.2) Particles that have composition consistent with gunshot primer residue are present on the sample. One (1) tertiary particle was detected by the instrument and was selected for examination. This particle is non-crystalline in morphology and contain lead, barium and antimony, and thus are highly specific to primer residue. Furthermore, this particle is similar in chemical composition to those present on the recovered cartridge case "SPEER 9 mm Luger + P" (item 25.1).*

For clarification, I presume that Mr. Woodbyne's use of the word "tertiary" refers to particles containing the elements lead, barium and antimony. Gunshot residue particles containing the elements lead, barium, and antimony (among other minor elemental components) are from the Sinoxid type of primer chemicals and are commonly used in ammunitions for .30 caliber, 9mm caliber and .45 caliber firearms all over the world. Therefore the comparison of *tertiary* GSR particles originally found on the LEFT HAND and RIGHT HAND GSR stubs to the cartridge case is irrelevant and unnecessary.

The important finding in the GSR analysis is the presence of a few GSR particles on the hands of Mr. Espinal. Therefore, the main possible conclusions would be:

1. Mr. Espinal discharged a firearm
2. Mr. Espinal was in the proximity of a firearm when discharged by another person.
3. Mr. Espinal had come into contact with another object/person that had GSR particles on it, some of which were transferred to him.

From our phone conversations is my understanding that no one is accusing Mr. Espinal of discharging a firearm, thus eliminating possible conclusion 1. It is also noteworthy that this type of analysis cannot determine the probability of conclusions 2 and 3.

## **REFERENCES**

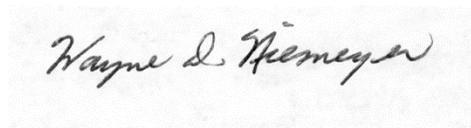
1. ASTM Designation: E1588 – 16a Standard Practice for Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectrometry
2. SWGGSR, "Guide for Primer Gunshot Residue Analysis by Scanning Electron Microscopy/Energy Dispersive X-Ray Spectroscopy," available from <http://www.swggsr.org>.

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Thank you for consulting McCrone Associates. My CV information is provided in the Appendix. If you have any questions about this report, please feel free to contact me by telephone or by e-mail at [wniemeyer@mccrone.com](mailto:wniemeyer@mccrone.com).

*McCrone Associates, Inc. conducts analysis in a laboratory accredited to ISO/IEC 17025:2005 by the American Association for Laboratory Accreditation (A2LA) and in compliance with applicable current Good Manufacturing Practices per sections 210, 211, and 820 of the Federal Food, Drug, and Cosmetic Act. Please consult A2LA Certificate #3631.01 for a list of accredited technologies at [www.a2la.org](http://www.a2la.org).*

Sincerely,

A handwritten signature in cursive script that reads "Wayne D. Niemeyer". The signature is written in black ink on a light-colored, slightly textured background.

Senior Research Scientist

WDN:  
Enclosure  
Ref: MA61549

**APPENDIX A**

Wayne Niemeyer- C.V. Documents

Ref: MA61549  
(10 pages)

## CURRICULUM VITAE

### WAYNE D. NIEMEYER

#### McCRONE EXPERIENCE – Since 1992, Senior Research Scientist

Responsible for identification of inorganic and organic particles and thin films. Consultant in ultra-microanalysis and microscopy for clients in the pharmaceutical, electronics, paint, automotive, packaging, and metals industries. Provides expert witness testimony in civil and criminal cases. Provides gunshot residue (GSR) analysis using the SEM/EDS method.

Co-instructor for two courses offered through the Hooke College of Applied Sciences: INS-510 Scanning Electron Microscopy (4½ days) and MEI-660 Gunshot Residue Identification (3 days). Since 2007, has served on the Scientific Working Group for Gunshot Residue (SWGSR). Since October 2014, has served on the NIST OSAC GSR sub-committee.

#### PROFESSIONAL EXPERIENCE

1969-1992 – Twenty-three years of experience with National Can Corporation (combined with American Can Company in 1987 to form American National Can Company) Research and Development Laboratory.

Responsibilities included surface analysis of aluminum, steel, glass, and plastic packaging materials utilizing scanning electron microscopy, secondary ion mass spectrometry, energy and wavelength dispersive X-ray, infrared spectroscopy, and optical microscopy (polarized light). Development responsibilities included metal surface treatments, lubrication processes for drawn and ironed can making, electrochemical methods to determine shelf life of food and beverage containers, and industrial waste water treatment processes. Investigated production plant process chemistry problems as needed.

#### TECHNICAL EXPERTISE

Electrochemistry (corrosion), optical microscopy, scanning electron microscopy, electron microprobe analysis, infrared spectroscopy, lubrication and wear, waste water treatment, secondary ion mass spectrometry, conversion coatings on aluminum and steel surfaces, gunshot residue (GSR) analysis, paint adhesion failure analysis, metallography.

Wayne D. Niemeyer  
Curriculum Vitae

## **EDUCATION**

B.A. Chemistry (cum laude), Illinois Institute of Technology, 1977  
B.Sc. Mathematics, DePaul University, 1969

## **FORMAL TRAINING**

- Corrosion of Engineering Materials (1969)
- Strategy of Experimentation (1977)
- Waste Water Treatment Using Reverse Osmosis/Ultrafiltration (1978)
- Applied Polarized Light Microscopy (1992)
- Scanning Electron Microscopy (1992)
- Polymer, Fiber & Film Microscopy (1993)
- Quantitative X-ray Microanalysis of Bulk Specimens & Particles (1993)
- Forensic Microscopy (1994)
- Electron Microscopy in Failure Analysis (1996)

## **PROFESSIONAL PRESENTATIONS AND PUBLICATIONS**

W.D. Niemeyer and J. Gavrilovic, "Use of Light Microscopy and Ion Microprobe for Identification of Surface Contaminants on Aluminum and Tinfoil Cans," Inter/Micro 1982, Chicago, Illinois, July 1982.

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Curriculum Vitae

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**PROFESSIONAL PRESENTATIONS AND PUBLICATIONS – continued**

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W.D. Niemeyer, “Searching for Microscopic Clues – SEM/EDS/WDS as a Forensic Tool,” Scanning '98, Baltimore, Maryland, May 1998.

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### **PROFESSIONAL PRESENTATIONS AND PUBLICATIONS – continued**

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Wayne D. Niemeyer  
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### **PROFESSIONAL PRESENTATIONS AND PUBLICATIONS – continued**

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W.D. Niemeyer, “Using Analytical Lab Instruments to Find Defects in Cans,” *Food Safety Tech.*, December 14, 2015

### **WEBINAR PRESENTATIONS**

W.D. Niemeyer, “Defects in Food Packaging”, The McCrone Group, April 21, 2016

W.D. Niemeyer, “The “Where’s Waldo” Dilemma in Microscopy, The McCrone Group, November 10, 2016

### **PATENT**

“Method of Forming Seamless Drawn and Ironed Containers of Aluminum Stock,” Patent 4,506,533, March 26, 1985.

### **PROFESSIONAL AFFILIATIONS**

ASM International  
Midwest Microscopy and Microanalysis Society

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Supplement

## GSR TRIAL AND DEPOSITION TESTIMONY

1. **State of New York vs. Ben Davis**, Case No. 95-2846, County of Erie, Buffalo, New York. **(Prosecution) MA29068**
  - a. Trial testimony on 9 October 1996
  - b. Retrial testimony on 15 January 1997
2. **State of Michigan vs. T.J. Tremble**, Case No. 97-062352, County of Arenac, Standish, Michigan. **(Prosecution) MA30335**
  - a. Trial testimony on 30 October 1997
3. **State of Illinois vs. John Lipsomb-Bey**, Case No. 96-CR-13401, County of Cook, Chicago, Illinois. **(Defense) MA31023**
  - a. Trial testimony on 24 November 1997
4. **State of New York vs. Rukaj**, Indictment No. 1401-96, County of Westchester, White Plains, New York. **(Prosecution) MA30902**
  - a. Trial testimony on 4 March 1998
5. **State of Michigan vs. John Charles Clark**, Court No. 98-7644-FC, County of Grand Traverse, Traverse City, Michigan. **(Prosecution) MA32694**
  - a. Trial testimony on 3 December 1998
6. **State of Wisconsin vs. Lawrence Peterson**, Case No. 97CF2365, County of Dane, Madison, Wisconsin. **(Defense) MA32920**
  - a. Trial testimony on 9 December 1998
7. **State of Illinois vs. Jonathon Tolliver**, Case No. 99CR24624, County of Cook, Chicago, Illinois. **(Defense) MA35389**
  - a. Trial testimony on 26 January 2001
8. **State of Indiana vs. David R. Camm**, Case No. 22D01-0010-CF-343, County of Floyd, New Albany, Indiana. **(Prosecution) MA36551**
  - a. Deposition on 2 October 2001
  - b. Trial testimony on 14 February 2002
9. **State of New York vs. Moises Ortega**, Case No. 329-2000, County of Richmond, Staten Island, New York. **(Prosecution) MA37434**
  - a. Trial testimony on 4 April 2002

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  - a. Trial testimony on 5 April 2002
11. **Acuna vs. Rudinski**, Case No. 00C6033, County of Cook, Chicago, Illinois. **(Plaintiff) MA38715**
  - a. Deposition on 18 November 2002
12. **Mildred Hamilton vs. City of Chicago and Chicago Police Officer Kenny Lunsford**, Case No. 00 L 007993, County of Cook, Chicago, Illinois. **(Defense) MA39982**
  - a. Depositions on 15, 16, 27 July 2003
  - b. Trial testimony on 30 and 31 July 2003
13. **State of Vermont vs. Cynthia Baird**, Case No. 00C106681, County of Rutland, Rutland, Vermont. **(Prosecution) MA38118**
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  - b. Trial testimony on 3 February 2004
14. **State of Wisconsin vs. Altwan D. Cross**, Case No. 03-CF-804, County of Dane, Madison, Wisconsin. **(Defense) MA40613**
  - a. Trial testimony on 23 October 2003
15. **State of Indiana vs. David R. Camm (Retrial)**, Cause No. 87D02 0506 MR 054, County of Warrick, Boonville, Indiana. **(Prosecution) MA36551**
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16. **Walker Talbert vs. City of Chicago, et al.**, Case No. 03C7571, County of Cook, Chicago, Illinois. **(Plaintiff) MA37973**
  - a. Deposition on 6 April 2006.
17. **State of New Hampshire vs. Charles Glenn**, Dept. Case No. 05-70759, County of Hillsborough, Manchester, New Hampshire. **(Prosecution) MA43522**
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  - b. Trial testimony on 19 July 2006
  - c. Daubert hearing testimony on 17 January 2012
  - d. Trial testimony on 19 June 2012

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18. **State of New York vs. Carlos Vega**, CSU #07/1255, County of Bronx, Bronx New York. **(Prosecution) MA50116**
  - a. Trial testimony on 22 October 2012
19. **State of New York vs. Patrick Murray**, Case No. 3317/12, County of Bronx, Bronx New York. **(Defense) MA55429**
  - a. Trial testimony on 12 August 2013
20. **State of Indiana vs. David R. Camm** (Retrial), Cause No. 74C01-1210-MR-000184, County of Boone, Lebanon, Indiana. **(Prosecution) MA36551**
  - a. Trial testimony on 12 September 2013
21. **State of Florida vs. Brandon B. Wilson**, Case No. 02-11-021979, County of Alachua, Gainesville, Florida **(Prosecution) MA55476**
  - a. Trial testimony on 26 September 2013
22. **State of New York vs. Patrick Murray**, Case No. 3317/12, County of Bronx, Bronx New York. **(Defense) (MA55429)**
  - a. Trial testimony (retrial) on 19 May 2014
23. **State of Florida vs. Jalil Allen**, Case No. 14000194CF 10A, County of Broward, Fort Lauderdale, Florida, **(Prosecution) MA56483**
  - a. Trial testimony on 24 August 2015
24. **State of New York vs. Jordan Agosto**, Indictment # 1973-2012, County of Bronx, Bronx, New York **(Defense) MA58511.B**
  - a. Trial testimony on 19 February 2016
25. **State of Minnesota vs. Jamaine Jamie Williams**, Court File No. 62-CR-15-9669 County of Ramsey, St. Paul, Minnesota **(Prosecution) MA59645.A**
  - a. Trial testimony on 10 August 2016
26. **State of Minnesota vs. Dametrius Ratheal Adrian Moore**, Court File No. 62-CR-15-8313 County of Ramsey, St. Paul, Minnesota **(Prosecution) MA59019.A**
  - a. Trial testimony on 14 September 2016
27. **State of Minnesota vs. Dearies Calvin Collins**, Court File No. 62-CR-15-8367, County of Ramsey, St. Paul, Minnesota **(Prosecution) MA59019.B**
  - a. Trial testimony on 20 October 2016

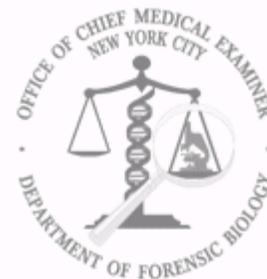


## OFFICE OF CHIEF MEDICAL EXAMINER

520 First Avenue, New York, New York 10016

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Timothy D. Kupferschmid, Director  
 DEPARTMENT OF FORENSIC BIOLOGY  
 Charles S. Hirsch Center for Forensic Sciences  
 421 East 26th Street, New York, New York 10016  
 Telephone: 212.323.1200 Email: DNALab@ocme.nyc.gov  
 Official Website: <http://www.nyc.gov/ocme>



DATE: March 25, 2016

### LABORATORY REPORT

LAB NO: FB16-01223

REPORT ID: CRT-0316-0969

VICTIM: Miguel Espinal

COMPLAINANT: Garthlette James

ENTITY: Westchester County NY Police

### OUTSIDE JURISDICTION INFORMATION/ADDITIONAL INFORMATION

Outside Jurisdiction Number: OJ-16-03

County, State: Westchester, NY

### RESULTS AND CONCLUSIONS

Human DNA, sufficient for STR DNA typing, was detected on the following item(s):

- swab 22.1 from "slide & trigger guard"
- swab 18.1SW1 from "holster", item 1.1
- swab 21.1 from "grips"

High Sensitivity STR DNA typing using the AmpF/STR<sup>®</sup> Identifiler<sup>®</sup> PCR Amplification Kit was performed on the sample(s) listed below. A mixture of DNA was found.

- swab 22.1 from "slide & trigger guard"

The DNA profiles of the individual contributors to the mixture(s) could not be determined; however, the results are suitable for comparison.

Based on a comparison of the DNA profiles of Garthlette James and Miguel Espinal to the mixture(s) found on the sample(s) listed below, they are included as a possible contributors. Therefore, likelihood ratios were calculated.

- swab 22.1 from "slide & trigger guard"

The DNA mixture found on swab **22.1 from "slide & trigger guard"** is approximately **63.5 billion times more probable** if the sample originated from Garthlette James and two unknown, unrelated person(s) than if it originated from three unknown, unrelated person(s). **Therefore, there is very strong support that Garthlette James and two unknown, unrelated person(s) contributed to this mixture, rather than three unknown, unrelated person(s).**

The DNA mixture found on **swab 22.1 from "slide & trigger guard"** is approximately **157 trillion times more probable** if the sample originated from three unknown, unrelated person(s) rather than if it originated from Miguel Espinal and two unknown, unrelated person(s). **Therefore, there is very strong support that three unknown, unrelated person(s) contributed to this mixture, rather than Miguel Espinal and two unknown, unrelated person(s).**

The DNA mixture found on **swab 22.1 from "slide & trigger guard"** is approximately **41.8 trillion times more probable** if the sample originated from Garthlette James and two unknown, unrelated person(s) rather than Miguel Espinal, Garthlette James and one unknown unrelated person(s). **Therefore, there is very strong support that Garthlette James and two unknown, unrelated person contributed to this mixture, rather than Miguel Espinal, Garthlette James and one unknown unrelated person(s).**

STR DNA typing using the AmpF/STR<sup>®</sup> Identifier<sup>®</sup> PCR Amplification Kit was performed on the sample(s) listed below. A mixture of DNA was found.

- swab 18.1SW1 from "holster", item 1.1

The DNA profiles of the individual contributors to the mixture(s) could not be determined; however, the results are suitable for comparison.

**No conclusions can be drawn** regarding whether Miguel Espinal is a possible contributor to the mixture(s).

Based on a comparison of the DNA profile of Garthlette James to the mixture(s) found on the sample(s) listed below, he is included as a possible contributor. Therefore, a likelihood ratio was calculated.

- swab 18.1SW1 from "holster", item 1.1

The DNA mixture found on **swab 18.1SW1 from "holster", item 1.1** is approximately **36.8 times more probable** if the sample originated from Garthlette James and two unknown, unrelated person(s) than if it originated from three unknown, unrelated person(s). **Therefore, there is moderate support that Garthlette James and two unknown, unrelated person(s) contributed to this mixture, rather than three unknown, unrelated person(s).**

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STR DNA typing using the AmpF/STR® Identifiler® PCR Amplification Kit was performed on the sample(s) listed below. A mixture of DNA was found.

- swab 21.1 from "grips"

The DNA profiles of the individual contributors to the mixture(s) could not be determined; however, the results are suitable for comparison.

Miguel Espinal is excluded as a possible contributor to the mixture(s).

Based on a comparison of the DNA profile of Garthlette James to the mixture(s) found on the sample(s) listed below, he is included as a possible contributor. Therefore, a likelihood ratio was calculated.

- swab 21.1 from "grips"

The DNA mixture found on **swab 21.1 from "grips"** is approximately **2.83 times more probable** if the sample originated from Garthlette James and two unknown, unrelated person(s) than if it originated from three unknown, unrelated person(s). **Therefore, there is limited support that Garthlette James and two unknown, unrelated person(s) contributed to this mixture, rather than three unknown, unrelated person(s).**

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**EVIDENCE RECEIVED**

<b>ITEM</b>	<b>VOUCHER</b>	<b>DATE RECEIVED</b>	<b>DESCRIPTION</b>
1	N/A	03/02/2016	DNA sample from Miguel Espinal
1.1		03/02/2016	DNA sample from Garthlette James
1.2			DNA sample from Garthlette James (not examined)
1.1		03/02/2016	swab 18.1SW1 from "holster"*
1.2			swab 18.1SW1 from "holster" (not examined)
2			swab 21.1 from "grips"*
3			swab 22.1 from "slide & trigger guard"*

**DISPOSITION**

The following items will be retained in the laboratory:

DNA extracts from samples and controls tested

\*The submitted swab was consumed.

The remainder of the evidence will be returned to the OCME Evidence Unit.

**Analyst** : Jeannie Tamariz  
(Criminalist, Level III)  
**Administrative Review Date** : 03/25/2016  
**Administrative Reviewer** : Carole Meyers

## APPENDIX

### General

This report has an associated Forensic Biology case file.

If a sample in this case is suitable for comparison and/or a DNA Donor was determined (e.g. Male Donor A), comparison could be done upon submission of a sample from a suspect, victim, elimination sample and/or consensual partner as applicable.

### Identification of Blood, Semen and Saliva:

A **presumptive** test is a non-confirmatory test used for detecting the possible presence of biological fluids.

**Prostate Specific Antigen** (PSA) is a protein (also known as P30) and is found in semen. PSA concentration in semen is typically in levels far in excess of those found in other fluids.

**Spermatozoa** are the male reproductive cells that can be found in semen.

The detection of an elevated level of **amylase** indicates, but does not conclusively establish, the presence of saliva. Sources of amylase may include (but are not limited to) saliva, vaginal secretions, and bacteria.

### Background to DNA Testing

**DNA** (Deoxyribo-Nucleic Acid), the inherited genetic material found in cells, contains markers which can differ from person to person. **DNA testing** can determine these genetic markers and compare biological samples from different individuals.

Alternative forms of DNA markers are called **alleles**. Alleles are found at specific areas, or locations, of the DNA called **loci** (singular, **locus**).

**STR** (short tandem repeat) loci contain alleles with a variable number of short repeating segments. Each STR allele can be described using a number which represents its number of repeats. A **DNA profile** is the series of numbers describing the DNA alleles found at an individual's STR DNA loci.

### DNA Testing

**DNA testing** involves several steps, including DNA extraction, DNA quantitation, PCR/DNA amplification, and analysis of the resulting DNA alleles.

**DNA extraction** recovers DNA from biological samples such as blood, bone, hair, saliva, semen, and skin cells.

**Differential extraction** is designed to physically separate the DNA in epithelial cells from the DNA in sperm cells, in samples which potentially contain a mixture of sperm and other cell types. As a result, separate "epithelial cell," "sperm cell," and "swab (or substrate) remains" DNA fractions are generated. Incomplete separation can occur and fractions may contain both sperm DNA and epithelial cell DNA.

**DNA quantitation** measures the concentration of human and male DNA extracted from samples by using a technique called quantitative real-time polymerase chain reaction (qPCR). If applicable, a male:female ratio of DNA is also calculated. If a sufficient concentration of human DNA, male DNA, and/or appropriate male:female ratio of DNA is detected, DNA amplification and analysis can be attempted. If an insufficient concentration of DNA is detected, further testing may or may not be able to be performed. Please contact the laboratory about the possibility of additional testing.

The **PCR** (polymerase chain reaction) technique produces large amounts of DNA from small starting amounts of DNA by repeated

cycles of copying the DNA loci (**DNA amplification**); after amplification the alleles present in the sample are identified.

STR DNA typing uses the **Applied Biosystems AmpF/STR® Identifiler® PCR Amplification Kit** with 28 amplification cycles (**Identifiler® 28**). Each STR locus tested in the Identifiler® Kit contains between 8 and 32 identifiable alleles. The **Applied Biosystems AmpF/STR Minifiler™ PCR Amplification Kit** may also be used. These kits also test the Amelogenin locus, which is used to determine the sex origin of a sample.

High Sensitivity STR DNA typing uses the **Applied Biosystems AmpF/STR® Identifiler® PCR Amplification Kit** with 31 amplification cycles (**Identifiler® 31**). Each STR locus tested in the Identifiler® Kit contains between 8 and 32 identifiable alleles. This kit also tests the Amelogenin locus, which is used to determine the sex origin of a sample.

Y-chromosome STRs (**Y-STR**) are male-specific STRs, not present in females, that are inherited from father to son, and should be identical for all male relatives of the paternal line. For example, brothers who share the same father will have the same Y-STR type. Y-STR DNA typing uses the **Applied Biosystems AmpF/STR® Yfiler™ PCR Amplification kit**.

### **Conclusions for DNA Typing**

**Mixture** - A DNA profile that has more than one donor.

**Major** - Alleles that are present in a higher proportion in a DNA mixture profile.

**Minor** - Alleles that are present in a lower proportion in a DNA mixture profile.

**Match** - The alleles detected in a questioned/evidence sample that are the same as the alleles detected in another sample.

**Is included as a contributor:** For the locations where comparisons could be made, all or most of the DNA alleles seen in an individual's DNA profile were also seen in the mixture. The allele(s) that were absent could be explained by any of several factors. Therefore, this person cannot be ruled out as a possible contributor to the mixture.

**Excluded as a contributor:** For the locations where comparisons could be made, one or more of the DNA alleles seen in an individual's DNA profile were not seen in the mixture and this absence cannot be explained. Therefore, this person can be ruled out as a contributor.

**No conclusions can be drawn:** The results do not support a positive association or an exclusion. Therefore, it cannot be determined whether the person can be included as a possible contributor to the mixture.

**Could not be determined:** Mixtures where the profiles of the major and/or minor contributors cannot be determined.

**Were not determined:** Mixtures where the profiles of the major and/or minor contributors can be determined, but the deconvolution was not performed.

**Not suitable for comparison:** The DNA results on the evidence are either too incomplete or too complex to be the basis for conclusions regarding the source of the DNA.

### **Statistics**

The rarity of a DNA profile can be expressed as an **STR population frequency estimate** (i.e. how often one would expect to see the DNA profile). STR population frequency estimates are based on: (1) the OCME STR database, (2) the Population Data in the AmpF/STR® Identifiler™ PCR Amplification Kit User's Manual (2001) Population Data, Applied Biosystems, Foster City, California, (3) the US YSTR Database, National Center for Forensic Science, Orlando, FL, (4) the DNA View Program, Brenner, CH (1997) Symbolic Kinship program, Genetics 145:535-542, and (5) the National Research Council (1996) The Evaluation of Forensic DNA Evidence, Natl. Acad. Press, Washington DC.

**The statistical values** reported reflect the approximate frequency of occurrence of a DNA profile in a population of unrelated individuals. Therefore, these are not appropriate for relatives. A profile is considered unique if it is at least as rare as 1 in greater than 6.80 trillion unrelated people.

Profile probability using Y-STR typing is estimated by applying a 95% confidence upper bound to the haplotype frequency. This method is described by Clopper and Pearson (1934). (SWGAM Interpretation Guidelines for Y-Chromosome STR Typing by Forensic DNA Laboratories, 2014: Section 10.2.3)

**Likelihood ratios:** For some mixtures wherein an individual contributor's DNA profile cannot be determined, a known person's DNA profile can still be compared to the mixture. The comparison DNA profile can be from a known person, or from a single source or deduced profile from within a case. For these comparisons, a statistical value known as a likelihood ratio (LR) may be calculated. The LR value provides a statistical measurement of the strength of support for one scenario over another, i.e., one scenario being that the known person contributed to the mixture versus the scenario that an unknown, unrelated person contributed instead. Please contact the laboratory about the possibility of additional likelihood ratio calculations.

**Limited, moderate, strong or very strong support:** These terms describe the strength or weakness of different ranges of a likelihood ratio (as shown in the table below). Examples of factors that affect the LR value include the amount of DNA tested, the type of mixture (for example, the number of contributors), instances when one or more of the individual's DNA alleles are not seen in the mixture, the presence of rare alleles in the mixture, and the presence of extra DNA alleles in the mixture.

Reported value	Qualitative interpretation
1	No conclusions
1 to 10	Limited support
10 to 100	Moderate support
100 to 1000	Strong support
Greater than 1000	Very strong support

Note, if the LR value is less than one, this means that the mixture is better explained if an unknown, unrelated person contributed to the mixture rather than the known person. This situation is reported as 1/LR and the qualitative terms from the table above are applied.

**Partial Match:** An association between two single-source (clean or fully deconvoluted) profiles, showing similarities but short of an exact match, that suggests that the source of a profile is potentially a relative of the source of the other, partially matching, profile. Partial matches are inadvertent, and may be found at the local, state, or national levels (through comparison at the bench, LINKAGE, or CODIS searches).

## CODIS

The Combined DNA Index System administered by the FBI. CODIS links DNA evidence obtained from crime scenes, thereby identifying serial criminals. CODIS also compares crime scene evidence to DNA profiles obtained from offenders, thereby providing investigators with the identity of the putative perpetrator. In addition, CODIS contains profiles from missing persons, unidentified human remains and relatives of missing persons.

There are three levels of CODIS: the Local DNA Index System (LDIS), used by individual laboratories; the State DNA Index System (SDIS), used at the state level to serve as a state's DNA database containing DNA profiles from LDIS laboratories; and the National DNA Index System (NDIS), managed by the FBI as the nation's DNA database containing all DNA profiles uploaded by participating states.

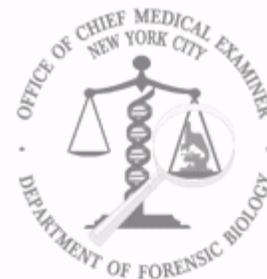


## OFFICE OF CHIEF MEDICAL EXAMINER

520 First Avenue, New York, New York 10016

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 DEPARTMENT OF FORENSIC BIOLOGY  
 Charles S. Hirsch Center for Forensic Sciences  
 421 East 26th Street, New York, New York 10016  
 Telephone: 212.323.1200 Email: DNALab@ocme.nyc.gov  
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DATE: May 18, 2016

### LABORATORY REPORT

LAB NO: FB16-01223

REPORT ID: CRT-0516-0543

VICTIM: Miguel Espinal

COMPLAINANT: Garthlette James

ENTITY: Westchester County NY Police

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### OUTSIDE JURISDICTION INFORMATION/ADDITIONAL INFORMATION

Outside Jurisdiction Number: OJ-16-03  
 County, State: Westchester County, NY

### ADDITIONAL REPORT

This is an additional report. For previous results, evidence received, and disposition, see Case Report ID CRT-0316-0969.

### RESULTS AND CONCLUSIONS

Human DNA, sufficient for STR DNA typing, was detected on the following sample(s):

- swab 18.1SW1 from "holster", item 1.2

High Sensitivity STR DNA typing using the AmpF/STR® Identifiler® PCR Amplification Kit was performed on the sample(s) listed below. A mixture of DNA was found.

- swab 18.1SW1 from "holster", item 1.2

The DNA profiles of the individual contributors to the mixture(s) could not be determined; however, the results are suitable for comparison.

Miguel Espinal is excluded as a possible contributor to the mixture(s).

Based on a comparison of the DNA profile of Garthlette James to the mixture(s) found on the sample(s) listed below, he is included as a possible contributor. Therefore, a likelihood ratio was calculated.

- swab 18.1SW1 from "holster", item 1.2

The DNA mixture found on **swab 18.1SW1 from "holster", item 1.2** is approximately **93.6 billion times more probable** if the sample originated from Garthlette James and two unknown, unrelated persons than if it originated from three unknown, unrelated persons. **Therefore, there is very strong support that Garthlette James and two unknown, unrelated persons contributed to this mixture, rather than three unknown, unrelated persons.**

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**EVIDENCE RECEIVED**

<b>ITEM</b>	<b>VOUCHER</b>	<b>DATE RECEIVED</b>	<b>DESCRIPTION</b>
1.2	N/A	03/02/2016	swab 18.1SW1 from "holster" *

**DISPOSITION**

The following items will be retained in the laboratory:

DNA extracts from samples and controls tested

\*The submitted swab was consumed.

The remainder of the evidence will be returned to the OCME Evidence Unit.

**Analyst** : Craig O'Connor  
(Criminalist, Level IV)

**Administrative Review Date** : 05/18/2016

**Administrative Reviewer** : Carole Meyers

## APPENDIX

### General

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**DNA testing** involves several steps, including DNA extraction, DNA quantitation, PCR/DNA amplification, and analysis of the resulting DNA alleles.

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**DNA quantitation** measures the concentration of human and male DNA extracted from samples by using a technique called quantitative real-time polymerase chain reaction (qPCR). If applicable, a male:female ratio of DNA is also calculated. If a sufficient concentration of human DNA, male DNA, and/or appropriate male:female ratio of DNA is detected, DNA amplification and analysis can be attempted. If an insufficient concentration of DNA is detected, further testing may or may not be able to be performed. Please contact the laboratory about the possibility of additional testing.

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Y-chromosome STRs (**Y-STR**) are male-specific STRs, not present in females, that are inherited from father to son, and should be identical for all male relatives of the paternal line. For example, brothers who share the same father will have the same Y-STR type. Y-STR DNA typing uses the **Applied Biosystems AmpF/STR® Yfiler™ PCR Amplification kit**.

### **Conclusions for DNA Typing**

**Mixture** - A DNA profile that has more than one donor.

**Major** - Alleles that are present in a higher proportion in a DNA mixture profile.

**Minor** - Alleles that are present in a lower proportion in a DNA mixture profile.

**Match** - The alleles detected in a questioned/evidence sample that are the same as the alleles detected in another sample.

**Is included as a contributor:** For the locations where comparisons could be made, all or most of the DNA alleles seen in an individual's DNA profile were also seen in the mixture. The allele(s) that were absent could be explained by any of several factors. Therefore, this person cannot be ruled out as a possible contributor to the mixture.

**Excluded as a contributor:** For the locations where comparisons could be made, one or more of the DNA alleles seen in an individual's DNA profile were not seen in the mixture and this absence cannot be explained. Therefore, this person can be ruled out as a contributor.

**No conclusions can be drawn:** The results do not support a positive association or an exclusion. Therefore, it cannot be determined whether the person can be included as a possible contributor to the mixture.

**Could not be determined:** Mixtures where the profiles of the major and/or minor contributors cannot be determined.

**Were not determined:** Mixtures where the profiles of the major and/or minor contributors can be determined, but the deconvolution was not performed.

**Not suitable for comparison:** The DNA results on the evidence are either too incomplete or too complex to be the basis for conclusions regarding the source of the DNA.

### **Statistics**

The rarity of a DNA profile can be expressed as an **STR population frequency estimate** (i.e. how often one would expect to see the DNA profile). STR population frequency estimates are based on: (1) the OCME STR database, (2) the Population Data in the AmpF/STR® Identifiler™ PCR Amplification Kit User's Manual (2001) Population Data, Applied Biosystems, Foster City, California, (3) the US YSTR Database, National Center for Forensic Science, Orlando, FL, (4) the DNA View Program, Brenner, CH (1997) Symbolic Kinship program, Genetics 145:535-542, and (5) the National Research Council (1996) The Evaluation of Forensic DNA Evidence, Natl. Acad. Press, Washington DC.

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Profile probability using Y-STR typing is estimated by applying a 95% confidence upper bound to the haplotype frequency. This method is described by Clopper and Pearson (1934). (SWGAM Interpretation Guidelines for Y-Chromosome STR Typing by Forensic DNA Laboratories, 2014: Section 10.2.3)

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**Partial Match:** An association between two single-source (clean or fully deconvoluted) profiles, showing similarities but short of an exact match, that suggests that the source of a profile is potentially a relative of the source of the other, partially matching, profile. Partial matches are inadvertent, and may be found at the local, state, or national levels (through comparison at the bench, LINKAGE, or CODIS searches).

## **CODIS**

The **C**ombined **D**NA **I**ndex **S**ystem administered by the FBI. CODIS links DNA evidence obtained from crime scenes, thereby identifying serial criminals. CODIS also compares crime scene evidence to DNA profiles obtained from offenders, thereby providing investigators with the identity of the putative perpetrator. In addition, CODIS contains profiles from missing persons, unidentified human remains and relatives of missing persons.

There are three levels of CODIS: the Local DNA Index System (LDIS), used by individual laboratories; the State DNA Index System (SDIS), used at the state level to serve as a state's DNA database containing DNA profiles from LDIS laboratories; and the National DNA Index System (NDIS), managed by the FBI as the nation's DNA database containing all DNA profiles uploaded by participating states.