



**INNOCENCE  
PROJECT**

**The National Criminal Defense College and the Innocence Project  
Present**

## **A Forensic Cross-Examination Workshop: Drilling Down on Toolmark Evidence**



### **CASE PROBLEM**

**(State v. Dylan Thomas)**

**READ before arrival at the workshop.**

**And PRINT and BRING this case problem  
with you to the workshop.**

# State v. Dylan Thomas<sup>1</sup>

## Contents

Case Summary .....	3
Summary Timeline.....	6
Indictment .....	7
Incident and Supplemental Reports .....	9
Results of Examination and Conclusions, 2/25/(YR-2) .....	14
Bullet Examination Worksheet, 2/25/(YR-2) .....	16
Database Search, 2/25/(YR-2) .....	17
Conclusions Worksheet, 2/25/(YR-2) .....	18
Georgia Bureau of Investigation, Investigative Summary, 2/2/(YR-1) .....	19
Email from Iverson to Chambers, 2/19/(YR-1) .....	20
Chambers Report 3/1/(YR-1).....	21
State's Exhibits .....	23
Terrence Chambers Curriculum Vitae .....	24
Excerpts of the Direct Examination of Terrence Chambers .....	28
Jerry Scribner Curriculum Vitae.....	36
Excerpts of the Direct Examination of Jerry Scribner .....	37

## Acknowledgments

*We wish to acknowledge **Linda Kenney Baden** (New York, NY) whose contributions made the development of this case problem possible.*

*Thanks also to Jerilyn Bell, Colin Bellair, Tania Brief, Brian Chase, Millie & Tom Dunn, John Ellis, Chris Fabricant, Laila Kelly, Mark Loudon-Brown, Amber Pittman, Christopher Robinson, Christopher McKee, Tashawn Reagon, Paul Rudof, Natasha Perdew Silas, and Karen Smolar for contributing to the development of the case problem.*

---

<sup>1</sup> All of the reports and case materials contained herein are mockups and not intended to represent true case filings or law enforcement documents.

## Case Summary

On February 14, (YR-2), Sam Miller and his girlfriend, Jennifer (“Jenn”) Ambrose, were celebrating Valentine’s Day at the trendy Twist & Groove Nightclub<sup>2</sup> in Atlanta. Sometime that evening, Sam, who had already had a few drinks, spilled his martini on a well-built, athletic man who looked vaguely familiar to him. Sam smiled, but did not apologize. The athletic-looking man shoved Sam and then a fight broke out between the two men and others. Words were exchanged. The melee quickly diffused.

When the Twist & Groove closed at 3am, people leaving the club began milling around the parking area. Sam and Jenn were seen walking to Jenn’s brownish/burgundy<sup>3</sup>Lexus RX 350. Early the next morning, a woman walking her dog discovered Sam and Jenn inside the Lexus (with apparent gunshot wounds) on a dead-end street about 1.5 miles from the club.

911 was called. Police and paramedics were dispatched. Sam and Jenn were declared dead on arrival. Detectives and crime scene techs arrived a short time after the first responders. The lead detective was A. Iverson. One deformed bullet was extracted from the driver’s front seat upholstery. A number of other metal fragments/items were recovered from the crime scene and preserved as evidence. No firearm was recovered at or near the scene.

The two bodies were removed to the morgue for examination by the Medical Examiner (“ME”). The ME determined that Sam (who had been found in the driver’s seat) had been shot through and through with no bullet fragments remaining in his body. The fatal shot entered the upper right chest and exited his left armpit. (Based on the ME’s estimated angle and trajectory of the bullet, detectives theorized that the bullet that killed Sam had been the one they recovered from the driver’s seat.) The ME also determined that Jenn Ambrose was killed by a bullet that entered her right temple. The bullet did not exit. It was recovered in tact by the ME. Detective Iverson retrieved the bullet from

---

<sup>2</sup>Twist & Groove has a sophisticated video system both at the entrance and throughout the club.

<sup>3</sup>The actual color is Fire Agate Pearl.

the ME and then delivered both bullets to the GBI Laboratory as items 5 and 15. (Item 5 was the bullet recovered from the upholstery of the Lexus and item 15 was bullet recovered in tact from Jenn Ambrose's body).

Detective Iverson and his team had no solid suspects until they spoke with the manager of the Twist & Groove. The manager did not remember any kind of disagreement from that night, but she did tell detectives about the club's sophisticated video system. She promised to provide them with the footage from the entire night within 24 hours. During a thorough review of the video footage from the Twist & Groove, detectives saw the martini spill and the fight that followed. The man seen fighting with Sam was tall and athletic-looking. He was immediately recognized as Dylan Thomas, a star defensive end with the Atlanta Falcons (already suspected in the murder of another man). Local news reported the discovery of the bodies of Sam Miller and Jenn Ambrose on February 15<sup>th</sup>. The fact that police identified Dylan Thomas as a suspect in the killings was "somehow" leaked to the press, which fueled extensive national media coverage.

Senior GBI Firearms Scientist Terrence Chambers was assigned to the case. Chambers examined all of the recovered ballistic evidence and concluded that items 5 and 15 were the only items suitable for comparative analysis. After examination under a comparison microscope, Chambers concluded that items 5 and 15 were fired from the same firearm. The class characteristics of both bullets showed that they were fired from a firearm with five lands and grooves and a right twist. These class characteristics were entered into the FBI's General Rifling Characteristics Database to produce a list of firearms known to be manufactured with a 5 Right Twist. The list included models manufactured by Smith & Wesson, Ruger, Taurus and others. However, since the firearm in question remained unrecovered, no further firearms analysis was performed at that time.

Months later, police got a major break in the case when Thomas' ex-girlfriend, Justine Ross, crashed her Range Rover Evoque on I-85 on February 2, (YR-1). Responding State Trooper Dooley Williams arrested Ms. Ross for DUI/drugs after observing the signs of drug intoxication and after Ms. Ross flunked field-administered sobriety tests.



The Range Rover Evoque was inventoried and towed incident to Ms. Ross' arrest. During the inventory search, Trooper Williams found an unloaded Smith & Wesson 38 Special revolver with two loose rounds of ammunition in the trunk. Ms. Ross denied any knowledge of the weapon. When it was determined that Ms. Ross had dated Dylan Thomas, Trooper Williams alerted the Miller/Ambrose case detectives. Detective Iverson took custody of the firearm from Trooper Williams and sent it to the GBI for Chambers to compare it to the bullets already recovered in the case (items 5 and 15). Iverson marked the Smith & Wesson as item 16. Chambers test fired item 16 (the Smith & Wesson) and marked the discharged bullet as item 17. Chambers then compared item 5 to item 17 to determine if the two bullets were fired from the same firearm. Chambers concluded that they were and issued a report that the bullets recovered from the crime scene were fired from the Smith & Wesson found in the trunk of Ms. Ross' Range Rover Evoque.

Dylan Thomas was indicted and arrested for the murders of Sam Miller and Jennifer Ambrose. Mr. Thomas denies his guilt. He is adamant that he is being set up by the cops who have it in for him.

After Thomas' arrest, but well before trial, the prosecution submits notice that they intend to call Jerry Scribner of the FBI's CAST Team to testify regarding the movements and locations of Mr. Thomas and Ms. Ross as revealed by the cell towers that were utilized by their cellular phones.

*NOTES: For purposes of this case problem, we will limit our exercises strictly to the firearms identification cross-examination. You will receive a lecture and demonstration relating to the cell site expert information, but you will not do cross-examination exercises relating to the cell site information. You need not concern yourself with what other evidence might or might not be collected. You should assume for the exercises that the evidence presented was obtained legally and that the testimony presented on direct was within the scope of the expert discovery that was provided prior to trial. Finally, you should assume that both experts were made aware of the details of the investigation by Iverson.*

## Summary Timeline<sup>4</sup>

Date/Time	Event
(YR-2) 02 14	Sam Miller and Jennifer (“Jenn”) Ambrose celebrate Valentine’s Day at the Twist & Groove Nightclub. Spilled martini leads to fight.
(YR-2) 02 15 0300	After the Twist & Groove closes at 3am, Sam and Jenn are seen walking to her Lexus RX 350.
(YR-2) 02 15 0621	Sam and Jenn discovered with apparent gunshot wounds in the Lexus on a nearby dead-end street by woman walking her dog later that morning. 911 called.
(YR-2) 02 15	Police & EMT response followed by detective and crime scene tech response. Bodies taken to morgue to await examination by medical examiner.
(YR-2) 02 16	Video review leads to identification of Dylan Thomas as suspect in the killings.
(YR-2) 02 18	The Medical Examiner examines the bodies and recovers a bullet from Jenn Ambrose’s brain.
(YR-2) 02 20	Detective Iverson sends both recovered bullets and other metal fragments to the GBI crime lab for analysis by Senior GBI Firearms Scientist Terrence Chambers.
(YR-2) 02 25	Chambers determines that the two bullets were suitable for comparison purposes and that they were both fired from the same firearm. FBI Firearms Rifling Database consulted and revealed the firearm could be Smith & Wesson, Ruger, Taurus, or others.
(YR-1) 02 02	Dylan Thomas’s girlfriend, Justine Ross, crashes her Range Rover Evoque on Interstate 85 and is arrested for DUI by Georgia State Trooper Dooley Williams. A Smith & Wesson .38 Special revolver is discovered in the trunk of her Range Rover Evoque. Ross denies ownership or knowledge of the firearm.
(YR-1) 03 01	GBI Firearms Scientist Terrence Chambers concludes that the two previously recovered bullets were shot from the Smith & Wesson revolver found in Ross’ Range Rover Evoque through comparison to test-fired bullets.
(YR-1) 04 01	FBI Cast Team Member Jerry Scribner analyzes historical cell site location data and concludes that Thomas was in the area where the victims were shot at the time of the murder and that he was picked up by Justine Ross and driven back to his apartment.

<sup>4</sup>Not provided as part of the discovery in the case problem but as a reference point for use during the program.

Indictment

INDICTMENT

Clerk No.: 19SC12345 Assigned to Judge Fabricant

FULTON COUNTY SUPERIOR COURT

THE STATE OF GEORGIA

V.

DYLAN THOMAS

1

2

3

MURDER O.C.G.A. § 16-5-1

MURDER O.C.G.A. § 16-5-1

POSSESSION OF A FIREARM DURING THE  
COMMISSION OF A FELONY O.C.G.A.  
§ 16-11-106

True Bill, November 4, (YR-1)

*Sam Dennis*

SAM DENNIS, Grand Jury Foreperson

*Patrick L. Hobart*

PATRICK L. HOBART, District Attorney

The Defendant hereby pleads Not Guilty.

*Dylan Thomas*

Defendant

/s/

Attorney for Defendant

This 7<sup>th</sup> day of November, (YR-1).

**STATE OF GEORGIA, COUNTY OF FULTON**

**IN THE SUPERIOR COURT OF SAID COUNTY**

**THE GRAND JURORS**, selected, chosen, and sworn for the County of Fulton, to wit:

- |                           |                     |
|---------------------------|---------------------|
| 1. Sam Dennis, Foreperson | 13. Henry Grady     |
| 2. Cathy Bennett          | 14. Hershel Walker  |
| 3. Brian Witty            | 15. Vince Dooley    |
| 4. Ron Tyler              | 16. Cooter          |
| 5. Judy Clarke            | 17. Meryl Streep    |
| 6. Shaffy Moeel           | 18. Lester Butts    |
| 7. Rick Kammen            | 19. Barbara Bergman |
| 8. Bobby Lee Cook         | 20. Paul Rudof      |
| 9. Perry Mason            | 21. Barry Scheck    |
| 10. Daniel Stamm          | 22. Jeff Robinson   |
| 11. Carol Lina            | 23. Andrea George   |
| 12. Martha Stewart        |                     |

in the name and behalf of the citizens of Georgia, do charge and accuse **DYLAN THOMAS** with the offense of **MURDER O.C.G.A. § 16-5-1**, for the said accused, in the County of Fulton and State of Georgia, on the 15<sup>th</sup> day of February, (YR-2), did unlawfully and with malice aforethought, cause the death of **Sam Miller**, a human being, by shooting him with a handgun; contrary to the laws of said State, the good order, peace and dignity thereof;

Count 2

And the Grand Jurors aforesaid, in the name and behalf of the citizens of Georgia, do charge and accuse **DYLAN THOMAS** with the offense of **MURDER O.C.G.A. § 16-5-1**, for the said accused, in the County of Fulton and State of Georgia, on the 15<sup>th</sup> day of February, (YR-2), did unlawfully and with malice aforethought, cause the death of **Jennifer Ambrose**, a human being, by shooting her with a handgun; contrary to the laws of said State, the good order, peace and dignity thereof;

Count 3

And the Grand Jurors aforesaid, in the name and behalf of the citizens of Georgia, do charge and accuse **DYLAN THOMAS** with the offense of **POSSESSION OF A FIREARM DURING THE COMMISSION OF A FELONY O.C.G.A. § 16-11-106**, for the said accused, in the County of Fulton and State of Georgia, on the 15<sup>th</sup> day of February, (YR-2), did unlawfully have on and within arm's reach of accused's person a handgun during the commission of at least one of the following felonies: Murder or Aggravated Assault with a Deadly Weapon; contrary to the laws of said State, the good order, peace and dignity thereof;

*Patrick L. Hobart, District Attorney*

# Incident and Supplemental Reports

Atlanta Police Department

Date of Report: 2/15/(YR-2)

## INCIDENT REPORT

### INCIDENT TYPE

Murder/Firearm

### LOCATION

Dead End of Lambert Street, Atlanta, Georgia 30324

### INCIDENT DATE / TIME

February 14/15, (YR-2) Unknown

### VICTIM(S)

MILLER, SAM  
485 Lindbergh Place  
Apartment 2204  
Atlanta, GA 30324

AMBROSE, JENNIFER  
1104 S Candler Street  
Decatur, GA 30030

### WITNESS

ROTHSTEIN, MARY

On February 15, (YR-2) at 06:21:00 hours, Ms. MARY ROTHSTEIN called EMS and 911 after discovering a brown or burgundy Lexus RX350 sitting at the dead end of Lambert Street, Atlanta, GA 30324. Inside the vehicle were two individuals with apparent gunshot wounds. EMT confirmed that the two vics were DOA. Officer WILSON secured the scene and awaited Detectives and CSU. After checking vics for ID, Driver's licenses revealed the above information. Victims removed from the scene directly to the morgue. Officer WILSON attempting to reach NOK.

### Reporting Officer

Patrol Officer Carolyn Wilson, Badge 902

### Approving Officer

Sgt Neil Kawesch, Badge 369

Atlanta Police Department

Date of Report: 2/15/(YR-2)

**SUPPLEMENTAL REPORT**

**INCIDENT TYPE**

Murder – Other Weapon

**LOCATION**

Lambert Street, near 812, Atlanta, GA 30324

**INCIDENT DATE / TIME**

February 14/15, (YR-2) Unknown

The undersigned and CSU specialist TRACY HALEY arrived on scene at 6:54am. EMTs on scene. Crime Tech HALEY processed the scene (took photos, measurements). One bullet was recovered lodged in the driver's seat of the Lexus (ITEM 5 - MILLER was in the driver's seat). Lexus removed to station for processing ballistics, blood, fibers. Officer WILSON informed the undersigned that victims each had wrist bands from the Twist & Groove Nightclub.

The undersigned responded to the Twist & Groove at 10:59am - the location was closed.

At 13:45 hours, spoke to ME FITCH who is conducting the autopsies. Was told to give them 72 hours.

At 16:19 hours, spoke with JADA WALKER, the manager of the Twist & Groove. She is checking with the owner of the club and will attempt to get video footage from their system. Apparently, nothing unusual occurred at the club through closing time at 3am. Manager indicates "typical night at the club – some disputes but nothing out of the ordinary."

**Reporting Officer**

Det. A. Iverson, Badge 982

**Approving Officer**

Sgt Neil Kawesch, Badge 369

Atlanta Police Department

Date of Report: 2/17/(YR-2)

**SUPPLEMENTAL REPORT**

**INCIDENT TYPE**

Murder – Other Weapon

**LOCATION**

Dead End of Lambert Street near 812, Atlanta, GA 30324

**INCIDENT DATE / TIME**

February 14-15, (YR-2) Unknown

CSU Det. HALEY processed the vehicle. Swabbed 12 locations of what appeared to be blood, recovered some hair and fibers. Sent to lab for testing. Other metal fragments were recovered from the scene. Items vouchered and held for GBI.

Thorough search of the Lambert Street area reveals no leads on a firearm. Canvass of the area leads to no information of use.

The undersigned is informed by the manager of the club that a copy of all security cameras will be available in 24 hours for our review.

ME FITCH reports that both victims died of gunshot wounds. Provided one bullet recovered from the brain of Jennifer Ambrose. Bullet has been marked ITEM 15 and held for comparison purposes. Toxicology available in ten days.

**Reporting Officer**

Det. A. Iverson, Badge 982

**Approving Officer**

Sgt Neil Kawesch, Badge 369

**SUPPLEMENTAL REPORT**

**INCIDENT TYPE**

Murder – Other Weapon

**LOCATION**

Dead End of Lambert Street near 812, Atlanta, GA 30324

**INCIDENT DATE TIME**

February 14-15, (YR-2) Unknown

Conducted review of the footage received from the Twist & Groove. At approximately time stamp 0134, VICTIM 1, SAM MILLER, is seen to spill cocktail onto the shoulder of an athletically-built subject visually identified as DYLAN THOMAS, professional football player with the Atlanta Falcons. (THOMAS has been a suspect in a separate shooting in this department.) THOMAS and VICTIM 1 engage in a physical confrontation and afterwards separate. Both VICTIMS leave the club when it closes at 3:00am. THOMAS exited the club at an unknown time as his exit was not observed on the video footage.

Video retained as evidence. Contacted THOMAS for questioning but he lawyered up as expected.

**Reporting Officer**

Det. A. Iverson, Badge 982

**Approving Officer**

Sgt Neil Kawesch, Badge 369



Atlanta Police Department

Date of Report: 2/20/(YR-2)

**SUPPLEMENTAL REPORT**

**INCIDENT TYPE**

Murder – Other Weapon

**LOCATION**

Dead End of Lambert Street near 812, Atlanta, GA 30324

**INCIDENT DATE TIME**

February 14-15, (YR-2) Unknown

Forwarded all ballistics evidence to Senior GBI Firearms Scientist Terrence Chambers, including ITEM 5 (recovered from the Lexus) and ITEM 15 (recovered from the body of Jennifer Ambrose). Requested analysis.

**Reporting Officer**

Det. A. Iverson, Badge 982

**Approving Officer**

Sgt Neil Kawesch, Badge 369

## Results of Examination and Conclusions, 2/25/(YR-2)



Division of Forensic Sciences  
Georgia Bureau of Investigation  
State of Georgia

Headquarters  
DOFS Case #: YYYY-000000095  
Report Date: 02/25/(YR-2)

Al Einstein, Director, ANAB Accredited Laboratory (ISO/ESO 17025 Compliant)\*

Requested Services: Firearms  
Agency: Atlanta Police Department  
Agency Ref #: xxxxxxxx  
Requested by: A. Iverson

Case Individuals:  
Subject: Thomas, Dylan  
Victim: Miller, Sam  
Victim: Ambrose, Jenn

---

### Evidence:

On 2/20/(YR-2), the laboratory received the following evidence from Atlanta Police Detective Iverson:

Item #	Description
5	Discharged Bullet
6-9	Metal Fragments
15	Discharged Bullet

### Results of Examination and Conclusions: \*\*

After examination, items 5 and 15 were determined to be bullets consistent with caliber 38/357/9mm. These bullets were discharged from the barrel of a firearm having 5 right twist rifling.

After microscopic comparison, it was determined that items 5 and 15 were fired from the same firearm based on sufficient agreement of class and individual characteristics to a reasonable degree of ballistics certainty.

\*\*\* continued on page 2 of 2 of this report.

---

\* The GBI forensic laboratory is an ANAB accredited laboratory compliant with the requirements of ISO/IEC 17025.

\*\* Only those items discussed in the results above were analyzed for this report. The above represents the interpretations/opinions of the undersigned analyst. Evidence analyzed in this report will be returned to the submitting agency. Biological evidence (body fluids and tissues) will be destroyed after one year. This report may not be reproduced except in full without written permission of the laboratory.

Technical notes and data supporting the conclusions and findings in this report are maintained within the laboratory case records.

This case may contain evidence that must be preserved in accordance with O.C.G.A. § 17-5-56.

A comparison of measurements obtained from the rifling impressions on item #5 with the FBI's General Rifling Characteristics database produced a list of firearms having 5 lands and grooves and right twist class characteristics that could have fired items 5 and 15. See attached list.

Please note that this database does not necessarily contain all possible firearms for a given set of rifling specifications and is not intended as an exhaustive list, but rather is intended only as an investigative lead tool.

---

#### Measurement Uncertainty:

When measurements are reported, estimations of measurement uncertainty for barrel and overall length determination of a firearm are reported at a coverage probability of 95.45%.

Only those items discussed in the results above were analyzed for this report. The above represents the interpretations/opinions of the undersigned analyst. Evidence analyzed in this report will be returned to the submitting agency. Biological evidence (body fluids and tissues) will be destroyed after one year. This report may not be reproduced except in full without permission of the laboratory.

Technical notes and data supporting the conclusions and findings in this report are maintained within the laboratory case records.

This case may contain evidence that must be preserved in accordance with O.C.G.A. § 17-5-56.

*Terrence Chambers*

Terrence Chambers  
Firearms Scientist

#### Related Agencies:

Fulton County Medical Examiner  
Atlanta Judicial Circuit

**End of Report**

# Bullet Examination Worksheet, 2/25/(YR-2)



Division of Forensic Sciences  
Georgia Bureau of Investigation  
State of Georgia



Headquarters  
DOFS Case #: YYYY-000000095  
Report Date: 02/25/(YR-2)

Al Einstein, Director, ANAB Accredited Laboratory (ISO/ESO 17025 Compliant)\*

## Bullet Examination Worksheet

DOFS Case Number: 2018-000095 Incident Number: XXXXXXXX

Initials: TC

Item No./Source	5/Det. A. Iverson (Crime Scene Recovery)	15/Det. Iverson/ME		
Packaging Description and Markings	Box ENV marked xxx Cone 4 (Driver's Side Upholstery)	Box ENV marked xxx ME (Vic J. Ambrose/brain)		
Seal Intact (Y/N)	Y	Y		
Trace Evidence	RBS	RBS		
Composition	Lead Copper JSP Steel Jacket	Lead Copper JSP Steel Jacket		
Base Diameter	.353 deformed	.356		
Approximate Weight	133	149		
Nominal Caliber/Class	38/357/9mm 38	38/357/9mm 38		
GRC	5 RT	5 RT		
Cannelure Type/Number	Smooth/1	Smooth/1		
Magnetic Properties (Pos./Neg.)	POS	POS		
Sketch of Bullet				<u>TC</u>
Land Impression Width Average		~ .097		
Groove Impression Width Average (Range)		~ .115		
Suitable for Comparison Purposes	Y	Y		
Suitable for Identification Purposes	Y	Y		
Certified as AMMO	Y	Y		
	Item 5 marked on base TC5	Item 15 marked on base TC15		

Examination Start Date: 2/25/(YR-2)	Examination Finish Date: 2/25/(YR-2)
Technical Reviewers Initials: RD	Technical Review Date: 2/25/(YR-2)

## Database Search, 2/25/(YR-2)

### Min/Max GRC Search Results (no Manufacturer/FA)

USER SEARCH PARAMETERS				
		Caliber:	38	Lwdmin: 0.097
Cartridge:		L/G:	5	Lwdmax: 0.098
Manufacturer:		Twist:	R	Gwdmin: 0.115
Model:		Poly/Conv.:	C	Gwdmax: 0.115
Type:	Country:	Rim:	C	GRC +/-: 0.00
				BoB.:

### SEARCH RESULTS:

CARTRIDGE	MANUFACTURER	TYPE	L/G	TWIST	LWDMIN	LWDMAX	GWDMIN	GWDMAX
357 MAGNUM	COONAN ARMS	PI	5	R	0.093	0.097	0.115	0.120
357 MAGNUM	RUGER	PR	5	R	0.096	0.102	0.114	0.117
357 MAGNUM	SMITH & WESSON	PR	5	R	0.094	0.102	0.112	0.120
357 MAGNUM	TAURUS	PR	5	R	0.096	0.102	0.114	0.120
38 LONG COLT	SMITH & WESSON	PR	5	R	0.094	0.097	0.114	0.117
38 S&W	SMITH & WESSON	PR	5	R	0.094	0.100	0.114	0.120
38 SPECIAL	INA	PR	5	R	0.095	0.100	0.115	0.120
38 SPECIAL	RUGER	PR	5	R	0.093	0.097	0.115	0.120
38 SPECIAL	SMITH & WESSON	PR	5	R	0.093	0.100	0.113	0.121
9MM LUGER	RUGER	PR	5	R	0.095	0.100	0.110	0.115
9MM LUGER	SMITH & WESSON	PI	5	R	0.093	0.100	0.112	0.118
9MM LUGER	SMITH & WESSON	PR	5	R	0.096	0.101	0.114	0.118

## Conclusions Worksheet, 2/25/(YR-2)



Division of Forensic Sciences  
Georgia Bureau of Investigation  
State of Georgia

Headquarters  
DOFS Case #: YYYY-000000095  
Report Date: 02/25/(YR-2)

Al Einstein, Director, ANAB Accredited Laboratory (ISO/ESO 17025 Compliant)\*

### Conclusions Worksheet

Microscopic Comparisons Description and Conclusions	Verification (Initials & Date)
<p><u>EXCLUSION:</u></p> <p>Item(s): _____</p> <p>Firearm (s): _____</p> <p>Discharged in/from different firearms based on differences of class characteristics/individual characteristics.</p>	
<p><u>INCONCLUSIVE:</u></p> <ul style="list-style-type: none"> <li><input type="radio"/> Inconclusive as to whether discharged in/from one firearm based on agreement of class characteristics, but insufficient/no agreement of individual characteristics.</li> <li><input type="radio"/> Unable to exclude based on lack of measurable class characteristics.</li> <li><input type="radio"/> Unsuitable for comparison based on a lack of discernible class and/or individual characteristics.</li> </ul>	
<p><u>IDENTIFICATION:</u></p> <p>Item(s): _____ 5 and 15 _____</p> <p>Firearm(s): _____</p> <p><input checked="" type="checkbox"/> Discharged in/from one firearm based on sufficient agreement of both class and individual characteristics.</p> <p>Markings Used:</p> <ul style="list-style-type: none"> <li><input type="radio"/> Firing Pin</li> <li><input type="radio"/> Breech Face</li> <li><input type="radio"/> Extractor</li> <li><input type="radio"/> Ejector</li> <li><input checked="" type="checkbox"/> Chamber Land Impressions</li> <li><input type="radio"/> Groove Impressions</li> <li><input type="radio"/> Other Marks: _____</li> </ul>	<p>TC 2/18/(YR-2)</p> <p>RD 2/25/(YR-2)</p>

Examination Start Date: 2/18/(YR-2)	Examination Finish Date: 2/18/(YR-2)
Technical Reviewers Initials: RD	Technical Review Date: 2/25/(YR-2)



## Georgia Bureau of Investigation, Investigative Summary, 2/2/(YR-1)

On Friday, February 2, (YR-1), at approximately 10:05pm, GEORGIA STATE TROOPER DOOLEY WILLIAMS responded to an accident reported on Interstate 85 Northbound near Exit 101, Indian Trail. Involved in the accident were a Range Rover Evoque registered and driven by JUSTINE ROSS and a Ford F150 Pickup Truck. The Range Rover Evoque rear-ended the Ford F150. Ms. ROSS was arrested on suspicion of DUI and it was determined that her vehicle would be impounded incident to her arrest. During the inventory search of Ms. ROSS' vehicle, TROOPER WILLIAMS discovered a .38 Smith & Wesson that was located in the trunk. Ms. ROSS denied knowledge and ownership of the firearm.

Subsequent investigation determined that Ms. ROSS is the ex-girlfriend of DYLAN THOMAS, a suspect in a separate murder investigation. TROOPER WILLIAMS took photographs of the firearm and ammunition and then contacted APD DETECTIVE IVERSON who took custody of the weapon to preserve it for comparison purposes.

## Email from Iverson to Chambers, 2/19/(YR-1)

---

From: <aiverson@atlandapd.gov>

To: <terrence.chambers.gbi.ga.gov>

Re: Smoking Gun?

---

Terry:

We might have found gun from Miller/Ambrose murders. Last week Dylan Thomas's ex was arrested for DUI and .38 S & W was found in her trunk. I want you to test to see if it fired items 5 and 15. When can I drop it off?

--

Det. A. Iverson  
Atlanta Police Department  
Major Crimes Section, Homicide Unit  
226 Peachtree Street SW  
Atlanta, GA 30303  
(404) 546-7896



# Chambers Report 3/1/(YR-1)



Division of Forensic Sciences  
Georgia Bureau of Investigation  
State of Georgia

Headquarters  
DOFS Case #: YYYY-000000095  
Report Date: 03/01/(YR-1)

Al Einstein, Director, ANAB Accredited Laboratory (ISO/ESO 17025 Compliant)\*

Requested Services: Firearms  
Agency: Atlanta Police Department  
Agency Ref #: xxxxxxxx  
Requested by: A. Iverson

Case Individuals:  
Subject: Thomas, Dylan  
Victim: Miller, Sam  
Victim: Ambrose, Jenn

---

## Evidence:

On 2/20/(YR-1), the laboratory received the following evidence from the Atlanta Police Department.

Item #	Description
16	Smith & Wesson .38 Special Firearm
TC 17	.38 Special Ammunition

## Results of Examination and Conclusions:

After examination of item #16, I certify that it is a FIREARM and that it is in proper working order functioning as a firearm as intended by the original manufacturer. The approximate barrel and overall length measure 5.5 and 8.5 inches respectively. After examining item TC 17, I certify that it is AMMUNITION suitable for test firearm from the Smith & Wesson .38 Special.

The undersigned performed a test fire of item 16 using TC 17 to be used for comparison purposes with item 15. Items TC 17 and 15 were examined under the comparison microscope. The undersigned found sufficient matching characteristics to conclude to a reasonable degree of ballistic certainty that items 5 and 15 were fired from the same firearm as the test fired item TC 17. To a reasonable degree of ballistics certainty, items 5, 15, and TC 17 were all fired from item 16, the Smith & Wesson .38 Special listed above.

\*\*\* continued on next page

Measurement Uncertainty:

When measurements are reported, estimations of measurement uncertainty for barrel and overall length determination of a firearm are reported at a coverage probability of 95.45%.

Only those items discussed in the results above were analyzed for this report. The above represents the interpretations/opinions of the undersigned analyst. Evidence analyzed in this report will be returned to the submitting agency. Biological evidence (body fluids and tissues) will be destroyed after one year. This report may not be reproduced except in full without permission of the laboratory.

Technical notes and data supporting the conclusions and findings in this report are maintained within the laboratory case records.

This case may contain evidence that must be preserved in accordance with O.C.G.A. § 17-5-56.

*Terrence Chambers*

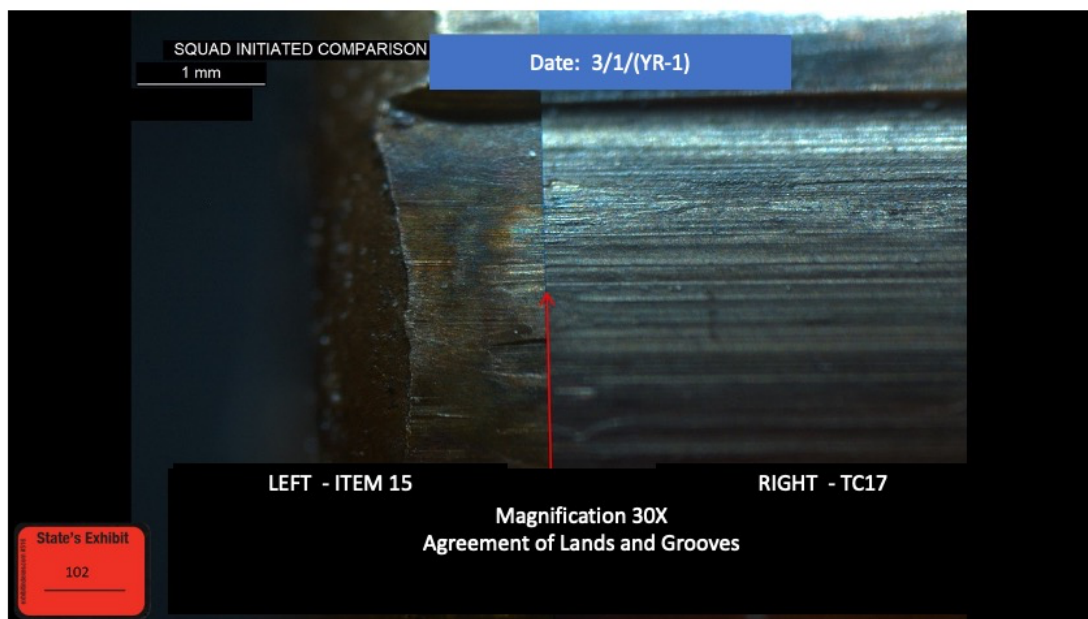
Terrence Chambers  
Firearms Scientist

Related Agencies:

Fulton County Medical Examiner  
Atlanta Judicial Circuit

**End of Report**

## State's Exhibits



# Terrence Chambers Curriculum Vitae

## Terrence Chambers

Georgia Bureau of Investigation

Division of Forensic Sciences, Firearms and Toolmark Section

3121 Panthersville Road, P.O. Box 370808 Decatur, Georgia 30037-0808

## EMPLOYMENT

2009 to Present

### **Firearms Scientist, Georgia Bureau of Investigation, Decatur, GA**

Responsible for conducting tests and examinations of firearms and ammunition that are obtained as evidence in criminal cases, submitted by local, state and federal law enforcement agencies, preparing reports relating to the identification, and classification of firearms and ammunition under the provisions of the Official Code of Georgia; crime scene response; court testimony; training to department personnel in the proper identification, and collection of firearms, and firearm related evidence. Volunteer participant in the Ames I and Ames II validation studies conducted by Iowa State University.

2007-2009

### **Firearms Scientist Apprentice, Georgia Bureau of Investigation, Decatur, GA**

Worked under the supervision of a Senior Firearms Scientist assisting in the testing and examination of firearms and ammunition for forensic comparison purposes.

2003-2007

### **Detective, Atlanta Police Department, Homicide Unit**

Assigned to the Homicide Unit responsible for investigating the unlawful killing of human beings, sudden, violent or otherwise suspicious deaths, also responsible for investigating any other death when directed to do so by the District Attorney or the Medical Examiner.

2001-2003

### **Detective, Atlanta Police Department- Drug Control Unit**

Under the direction of the Drug Control Unit Sergeant Detective participated in the investigation of all violations of the Drug Control Laws, within the City of Atlanta. Duties included; surveillance (on foot-mobile), managing and conducting drug buys recruiting and handling confidential informants, knowledge of the drug laws-court preparation and testimony-maintaining evidence and operational logs for long range investigations.

1995-2001

### **Police Officer, Atlanta Police Department, Zone 6**

Responsible for carrying out the functions of the department, including but not limited to, the preservation of the public peace, the protection of life and property, the prevention of crime, the arrest and prosecution of violators of the law, the proper enforcement of all laws and ordinances and the effective delivery of police services.

## EDUCATION

May 2007      Georgia State University, Master of Science in Criminal Justice with Honors.  
Dec 1994      Atlanta Police Academy Graduate  
May 1994      Georgia State University, Bachelor of Science in Chemistry.

### PROFESSIONAL CERTIFICATIONS:

- **Certified Firearm Examiner**  
The Association of Firearms and Tool Mark Examiners 12/13/2008

### PROFESSIONAL ORGANIZATIONS:

- The Association of Firearms and Tool Mark Examiners- Regular Member
- Georgia State Division of the International Association for Identification
- Peace Officers Association of Georgia
- National Fraternal Order of Police

### PROFESSIONAL DEVELOPMENT/ CONTINUING EDUCATION:

#### Training Courses:

- Practical Homicide Investigation Seminar, 24 hrs, FLETC, Glynco, GA – Verna Gumbs, 2000
- Sig Sauer Armorer's Course, 24 hrs., James Frye 2007
- Glock Armorer's Course, 8hrs-2008
- Introduction to DRUGFIRE course, 24 hrs, BPD – Jerry Miller, 2010
- Firearms Identification and Tracing Procedures, 8 hrs, Bureau of Alcohol Tobacco and Firearms – Allan Offringa, 2008
- Advanced Forensic Techniques in Crime Scene Investigation I and II, FLETC, Glynco, GA, 2001
- Ruger Armorer's Course Rifle, 40 hrs, Sturm, Ruger & Company, Inc. – 2009
- Gunshot Residues School, 40 hrs, Federal Bureau of Investigation – Carlo Rosati, 2009
- Glock Armorer's Course, 8 hrs, Burke – 2007
- Advanced Pistol Training Program, FLETC, Glynco, GA, 2011
- Case Organization and Presentation Program, FLETC, Glynco, GA, 2011
- Toolmark Identification Training, 24hrs, Federal Bureau of Investigation – Carlo Rosati, 2011
- Examination and Comparison of Cartridges, Cartridge Cases, Shotshells and Fired Shotshells, 40hrs, Nancy D McCombs AFTE Certified Firearms Scientist, 2007
- The Scientific Foundations of Firearms and Tool Mark Identification- Responding to Recent Challenges, Ron Nichols, 2008, AFTE Training Seminar

- Bullet Holes In Wood: What Can Be Determined From Them, Lucien Haag, 2012 AFTE Training Seminar
- Tour Sturm Ruger Investment Casting Manufacturing Plant, 8hrs, 2008, 2012
- Crime Scene Investigation: Evidence Recognition, Documentation and Collection, 40hrs, Henry C. Lee Institute, 2016
- Tour Smith & Wesson Manufacturing Plant, 8hrs, 2013
- Forensic Testimony, 35hrs, FLETC, Glynnco, GA, 2014
- Potential for Errors in Cartridge Case Identification, 8hrs, Beta Tam, AFTE Certified Firearms Scientist, 2008
- Examination and Comparison of Bullet and Shotshell Projectiles 40hrs, Nancy D McCombs, AFTE Certified Firearms Scientist, 2009
- Beretta Armorer's Course, 24hrs-2007
- Daubert Training Seminar, 8hrs, G. Andrew Smith, AFTE Certified Firearms Scientist, 2009
- Topics in Firearm and Toolmark Identification, 16hrs, George Fertal-2008
- Forensic Microscopy, 4hrs, GBI, Michael Gorn-2008
- Glock Armorer's Course, 8hrs, 2009
- Use of the Comparison Microscope and Digital Imaging Workshop, 8hrs, Michael Luce-Leica Microsystems, 2010
- ASCLD/LAB-INTERNATIONAL Preparation Course, 24hrs, Anja Einseln, 2010
- Introduction To Forensic Digital Image Processing, 24 hrs, David Witze, Foray Technologies, 2011
- Perspectives in Expert Testimony, 20 hrs, Sam North, West Virginia University Continuing & Professional Education Certificate Program 2011
- Ethics in Forensic Science, 32hrs, Robin Bowen, West Virginia University Continuing & Professional Education Certificate Program 2011
- Integrated Ballistic Identification System, 27hrs, Martin Overly, West Virginia University Continuing & Professional Education Certificate Program 2011
- National Forensic Science Technology Center- Firearm Examiner Training Continuing Education Program, 10 Months, Marla Dupre, Stephen Ostrowski, AFTE Certified Firearms Scientists, Focoss Forensics, Competency Certification 2011
- Breakout Session: Firearms & Toolmarks-2012 IPES Conference, RTI.org- Forensic Science Education, 2012
- How to Be a Good Expert Witness, RTI.org- Forensic Science Education, Greg Davis 2012
- 2D/3D Crime Scene Imaging: A Practitioner's Perspective, RTI.org- Forensic Science Education, 2013
- SOP Writing for ISO 17025 Accreditation, RTI.org- Forensic Science Education, Laurel J. Farrel, 2013
- ASCLD/LAB-INTERNATIONAL Internal Auditors Course, 32 hrs., Anja Einseln, 2014
- Use of Likelihood Ratios for Evidence Quantification in Forensic Application, 1 hr., Steve Love, Steve Lund, 2015
- Sig Sauer P320 Armorer's Course, 8 hrs, Scott Kenneson 2015
- False-Positive and False-Negative Error Rates in Cartridge Case Comparisons, 1hr RTI.org- Forensic Science Education, David Baldwin, 2015

- Cognitive Factors in Forensic Decision Making Workshop, 16 hrs., Cognitive Consultants International, Dr. Itiel Dror, 2016
- Vision X Comparison Microscope, 8hrs, Ultra Electronics/Forensic Technology, Paula Cooley, 2016

### **Meetings Attended:**

10<sup>th</sup> Annual Georgia Assoc. of Firearms and Toolmark Examiners Conference, 2011  
 40<sup>th</sup> Annual Association of Firearms and Toolmark Examiners Training Seminar, Miami, 2009  
 13<sup>th</sup> Annual Georgia Assoc. of Firearms and Toolmark Examiners Conference, 2014  
 46<sup>th</sup> Annual Association of Firearms and Toolmark Examiners Training Seminar, 2015  
 49<sup>th</sup> Annual Association of Firearms and Toolmark Examiners Training Seminar, Charleston, WV, 2018  
 53<sup>rd</sup> Annual Association of Firearms and Toolmark Examiners Training Seminar, Atlanta, 2022

### **Honors and Awards:**

Atlanta Police Department Medal of Honor

## Excerpts of the Direct Examination of Terrence Chambers

Q Good morning, could you please introduce yourself to the jury.

A Good morning. My name is Terrence Chambers.

Q Please state your occupation and assignment for the record.

A I am employed by the Georgia Bureau of Investigation and assigned to the Division of Forensic Sciences, Firearms and Toolmarks Section. I am a firearms scientist or examiner.

Q Can you concisely explain what a Firearms Scientist in the Firearm and Toolmark Section does?

A We perform a number of very important functions which generally relate to analysis of different types of firearms and ammunition components, including fired bullets and fired cartridge cases. We can examine cartridges and cartridge components in order to make a number of determinations, including whether the cartridge in question was fired, the caliber, ballistic data, the manufacturer, the presence of alterations, and whether a fired cartridge was fired once or was fired again after a reload. We can, in many cases, examine multiple bullets or other cartridge components through a piece of equipment called a comparison microscope to determine whether those items have been fired by the same or different firearms. This is done based on the markings found on those bullets or cartridge components. Finally, we conduct forensic firearm identification which is a process by which we attempt to identify if a particular bullet or cartridge component has been fired from a particular weapon. When we do not have a weapon to compare a bullet or cartridge component against, microscopic examination of a cartridge can nevertheless provide a good indication of the type of firearm from which it was fired based upon the markings that have been imparted by the firearm to the bullet as it traveled down the barrel of the firearm. There are also sometimes other functions that we perform.

Q What are your qualifications to hold this position?

A [WITNESS CATALOGS HIS EDUCATION] ... I have also received training from the Federal Bureau of Investigation in the area of toolmark identification. In this training course, we were tested, and re-tested, peer reviewed, and were given a training partner. Along with this training partner, we did mock cases. All of this training took place between 2007 and 2008. It wasn't until 2009 that I was allowed to take my own cases and conduct



examinations. Then, every year, we are required to complete a proficiency examination as part of the ANAB accreditation.

Q Have you passed all of your proficiency examinations?

A Without exception. I have always done extremely well on my proficiency examinations.

Q Have you ever participated in any validation studies for firearm and toolmark examiners?

A Yes, I actually participated in both of the Ames Studies, Ames I and II, out of Iowa State University.

Q You mentioned ANAB accreditation. Is the GBI Forensic Laboratory ANAB accredited?

A Yes, we are. And in order to maintain that accreditation we examiners must participate in ongoing trainings and assessments.

Q Are you a member of any associations?

I am a member of the Association of Firearms and Tool Mark Examiners.

Q Now Mr. Chambers, how many times have you conducted examinations of firearms and/or bullets and cartridge components?

A Well over 5,000 times. I cannot give you an exact number, Sir. I am sorry.

Q Do you carry and shoot a firearm yourself as well?

A I do.

Q Have you testified in court as an expert Firearms Scientist prior to today?

A I have.

Q How many times?

A I couldn't put a number on it, but dozens of times.

Q Have you offered opinions to a reasonable degree of ballistics certainty about evidence examined by you in those other dozens of courtroom proceedings?

A I have.

Q How many times?

A Counting grand jury and at trial – probably somewhere around 50-75 times.

Q Have you ever had a court deny you expert status?

A Never.

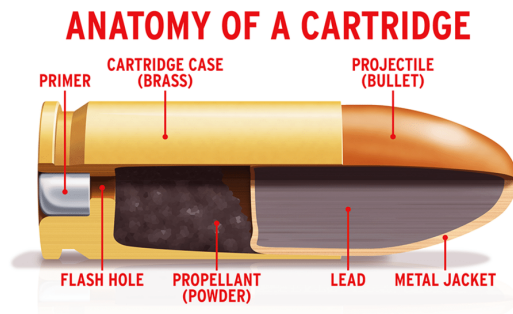
Q Your Honor, I offer the witness as an expert in firearms and toolmark evidence.

The Court: Any objection counsel?

Defense Counsel: No objection Judge.

Q What does the term cartridge refer to?

- A A cartridge is just another name for a bullet or a live round. It has four main components: a cartridge case or a container. At the base of the cartridge, the primer is housed. The top is the projectile. The flash hole is in the center.



- Q Earlier you mentioned that as part of your role at the lab you examine markings that are left on cartridges fired from firearms?

A It is.

- Q Can you explain what you mean by markings and how those markings end up on the bullets or cartridge components?

A An initial examination involves the evaluation of what are called class characteristics. This refers to types of characteristics that are predetermined by a manufacturer. One type of class characteristic for both a firearm and ammunition would be caliber. A second class characteristic for a firearm would be the size of the barrel of the weapon. Another type of class characteristic would be rifling, and specifically we mean the number of lands and grooves inside of a weapon barrel and their direction.

- Q Can you explain to the jury how a gun is typically manufactured?

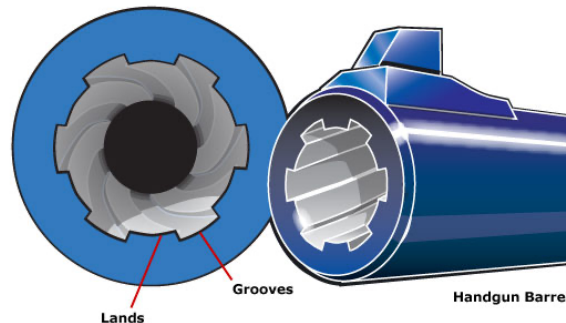
A Depending on the manufacturer there can be many different processes. One is called forging where metal is placed into a mold and then it is hammered into a rough shape or form. From there that piece is then further processed. Depending on what piece it is on the firearm, it is then further processed or finished off. It could be drilled. It could be cut. It could be sanded or turned on the lathe and filed. There is also a process called reaming. It all depends on the part that is being made. If it is a barrel, once it comes out of the mold, you would drill a hole into the center of that barrel and then they would smooth it out and then introduce a machined tool into that hole to introduce rifling cuts into the inside of the

barrel. Again, all those are done by machined tools which have themselves been through a manufacturing process.

Q So, again you mentioned drilling, reaming, and rifling and all those are processes that can be used during manufacturing?

A Yes.

Q Now I am showing you a copy of this demonstrative exhibit, do you recognize that?



A Yes.

Q You mentioned lands and grooves. Does this exhibit help to explain what you mean by rifling and lands and grooves?

A Yes. The exhibit illustrates lands and grooves that are cut into the barrel of a firearm for the purpose of imparting spin to a bullet to increase accuracy. Without spin, bullets would have a tendency to tumble out of the barrel. Spin is imparted to help the bullet go further and to improve its accuracy, kind of like when a quarterback puts spin on a pass. Lands are the raised part of the pattern and the grooves are the spaces between the lands.

Q This rifling process that you were talking about – which results in the lands and grooves – does it produce markings on the bullets that are fired by those firearms?

A Yes. Because the metal used to make firearms is harder than the metals used to make bullets and cartridges, firearms leave markings on the bullets as they are traveling down the barrel of the firearm.

Q Are rifling patterns the same for every firearm?

A No, they are not. The manufacturers choose the numbers of lands and grooves that they want to carve into the barrels of their firearms. Also, some twist to the left and some twist to the right.

Q And what do you call the markings left on bullets or cartridges based on rifling?

- A Those types of markings are generally called class characteristics. Class characteristics will be the same for the same type of firearm or certain groups of firearms for which the manufacturer has selected the same type of rifling. That would be the class characteristics part of it.
- Q Is there another category of characteristics other than class characteristics?
- A Yes. The other category of characteristics is individual characteristics. Individual characteristics are different and distinct for each individual firearm.
- Q Why don't you tell the jury what is meant by individual characteristics in the context of firearm identification?
- A Well, in addition to the class characteristic markings that will be left on a bullet as it travels down the barrel of a firearm, individual marks are left behind every time a firearm discharges a cartridge. The markings are unique to that firearm partly due to the manufacturing process that we talked about earlier. The whole premise of firearm analysis is that each firearm leaves behind unique, microscopic markings, unique to that firearm. There hasn't been a firearm .... or firearms that are known to have the same markings.
- Q How does that work exactly?
- A When the ammunition comes in contact with the firearm, it leaves the friction marks, movement marks, behind. These are called stria. And we can observe and identify the stria on a bullet to determine if it has been fired from a particular firearm. You can think of it kind of like a barcode pattern. The process of the bullet traveling down the barrel of the firearm creates a series of lines or striations and we toolmark examiners look at those lines produced to determine whether there is a match between two fired bullet specimens and/or between fired bullets and cartridges and a particular firearm.
- Q Alright. Now I am going to show you two objects which have been marked and admitted as State's Exhibits 5 and 15. Do you recognize these two exhibits?
- A I do. State's Exhibits 5 and 15 were also referred to as items 5 and 15 when I worked with them in the laboratory.
- Q What do you recognize State's Exhibits 5 and 15 to be?
- A State's Exhibit 5 was provided to me on February 17, (YR-2) in the lab by Detective Iverson as an item recovered from the crime scene. It is a slightly deformed discharged bullet.
- Q Now please take a look at State's Exhibit 15. Do you recognize that as well?

- A I do – it is the cartridge that I received that same day from Det. Iverson, the discharged bullet in connection with the second victim, Jennifer Ambrose, which was recovered from Ms. Ambrose's body. This item had to be cleaned in a bleach and water bath to remove blood and other matter from its surface.
- Q Did Detective Iverson also give you some other items recovered from the crime scene as well?
- A Yes.
- Q What was your understanding as to why you were being given those items?
- A For comparison and identification purposes.
- Q Did you make a determination of whether all of the items provided to you in connection with this case were suitable for comparison purposes?
- A Yes, I did. Only items 5 and 15 were suitable for comparison purposes.
- Q And how did you go about analyzing those items?
- A First, I examined both 5 and 15 to determine class characteristics. I discovered that both items, err, State's Exhibits 5 and 15 had five lands and grooves and they twisted to the right. We would call that 5 right rifling. I also determined the caliber of the bullets. They were both nominal 38 caliber. In other words, they belonged to the 38 caliber family, which includes several cartridge types such as 38, 9mm, and 38 special or 357.
- Q What can you tell from a bullet with 5 right rifling?
- A Through the use of an FBI firearms characteristics database, I can print out a list of the types of firearms that are manufactured with 5 right rifling. The list includes Smith & Wesson, Ruger, Taurus or several other types of firearms.
- Q You didn't actually have a firearm to compare items 5 and 15 to right? So, what did you do next?
- A I next placed items 5 and 15 on an instrument called a comparison microscope to see whether I could determine if they were fired from the same or different firearms. The comparison microscope has two microscopes linked together by an optical bridge through one eyepiece. It allows me, the examiner, to look at the two items under the microscope simultaneously, with the same lighting and magnification, through one plane of view. I am able to manipulate both images side by side and look at the class characteristics and discover individual characteristics or markings that are present on both to determine if there is sufficient agreement for me to declare it a match.

- Q Based upon your analysis of items 5 and 15, did you draw any conclusions? If so, what were they?
- A Items 5 and 15 had sufficient agreement in their class as well as their individual characteristics such that it is my opinion to a reasonable degree of ballistics certainty that they were fired down the barrel of the same firearm.
- Q I am now handing you Item 16, what is that?
- A Item 16 is a .38 Caliber Smith and Wesson revolver that was brought to me in the lab on February 4, (YR-2) by Detective Iverson.
- Q How do you recognize that item?
- A My initials and the date appear on the packaging of the firearm.
- Q And what was your understanding of what you were to do with item 16, the firearm?
- A My understanding was that this firearm was being brought to me, because it was suspected of being the firearm that fired items 5 and 15, so it would be my job to determine if that was so.
- Q And Exhibit TC 17 – what is that?
- A Item TC 17 is a bullet that was test fired using item 16.
- Q Did you test fire it?
- A Yes.
- Q And what did you do next?
- A I repeated the process that had been undertaken with items 5 and 15 before we had the missing firearm. This time I compared item 15 to item TC 17, the test fired ammunition, since 15 was the better of the two recovered bullets.
- Q Based upon your observations, did you draw any conclusions.
- A Yes I did. There was sufficient agreement between items TC 17 and 15 that it is my opinion, to a reasonable degree of ballistics certainty, that all three bullets or projectiles (items 5, 15, and TC 17) were fired down the barrel of the same weapon and that weapon was item 16.
- Q Did anyone review your work?
- A Yes – all of our work is peer-reviewed, including the analysis that I did in this case. Since our lab is accredited by ASCLAD/LAB, The American Society of Crime Laboratory Directors Laboratory Accreditation Board and ISO accredited, we are mandated to peer review every report that is issued.

Q Did you issue a report in connection with your findings in this case?

A Yes.

Q And was that report peer-reviewed?

A Yes.

Q And what does peer-reviewed mean exactly?

A It means that another examiner with the same experience must concur with the original findings of the primary examiner in order for that report to be final.

Q Now, Mr. Chambers, I would like to show you what I have marked for identification as State's Exhibits 101 and 102.

A Alright.

Q Do you recognize those two exhibits?

A Of course.

Q What are they?

A They are photographs taken with the comparison microscope showing my comparison view of the items in question.

Q Are State's Exhibits 101 and 102 fair and accurate depictions of what you saw through your microscope?

A Yes, with the exception of the fact that State's Exhibits 101 and 102 are only in two dimensions and what I see through the comparison microscope is in three dimensions, but we don't have three dimensional pictures yet, so yes, this is as good as it gets.

Q I move the admission of State's Exhibits 101 and 102 Your Honor.

ANY OBJECTION COUNSEL?

NO.

THEY WILL BE ADMITTED.

Q Mr. Chambers, these pictures what do they show?

A They show the comparison and agreement between items 15 and TC 17. These items have sufficient agreement to determine with a reasonable degree of ballistic certainty that they were fired down the barrel of the same firearm.

Q Thank you Mr. Chambers. Your witness counsel.

# Jerry Scribner Curriculum Vitae

## CURRICULUM VITAE



### **Jerry Scribner**

Federal Bureau of Investigation  
Los Angeles Division  
11000 Wilshire Boulevard, Suite 1700  
Los Angeles, CA 90024

## PROFESSIONAL EXPERIENCE

---

**Special Agent** (January 2019 to Present) Federal Bureau of Investigation  
Los Angeles, CA

Currently assigned to the Cellular Analysis Survey Team (CAS.T.). Previous assignment was on the Violent Crimes squad which is responsible for investigating bank robbery, commercial store robbery, kidnapping, and fugitive cases. Specifically, I was assigned to a task force with the Atlanta Police Department where I investigated fugitive cases for more than ten years and I am still imbedded with these units. I have successfully used cellular telephone analysis to locate individuals or corroborate investigations in hundreds of various cases.

**Salesperson** (June 2017 to January 2019)  
Sprint  
San Diego, CA

Responsibilities included selling iPhones, Android devices, Apple Watches, and speakers.

## EDUCATION

New Hampshire School of Technology (September 2008 to June 2014)  
Hanover, New Hampshire  
Master Of Science Degree (MS)  
Major: Electrical Engineering (concentration in Telecommunication Systems)

## PROFESSIONAL TRAINING & INSTRUCTION

Certified by JDSU and Gladiator to operate various hardware and software drive test products  
Attended multiple classes with detailed study in GSM, iDEN, CDMA, and UMTS cellular protocols  
Received network and records training from all of the major U.S. based cellular companies  
Provided instruction to 1000's of investigators and agents through an FBI Telephone Records Analysis class

## COURTROOM EXPERIENCE

Provided expert testimony of cellular telephone record analysis in multiple federal districts and state courts throughout the United States



## Excerpts of the Direct Examination of Jerry Scribner

Q: Good morning, could you please introduce yourself to the jury?

A: Good morning, I am Special Agent Jerry Scribner.

Q: What do you do for a living?

A: I am an agent with the FBI's CAST unit.

Q: What is CAST?

A: CAST stands for Cellular Analysis Survey Team. We are the team responsible for the mapping and analysis of call detail records, CDR, or cell site location information, CSLI.

Q: How long have you held that position?

A: I've been with the FBI since January (YR-1).

Q: What did you do before joining the CAST unit?

A: I worked at Sprint for approximately two years after graduating from the New Hampshire School of Technology with a masters in electrical engineering. I had a concentration in telecommunication systems.

Q: Did you receive any training to be a part of the CAST unit?

A: Yes. We first receive training at Project Pinpoint School, which is a basic school for the introduction of cell record analysis. The CAST School comes after and is a month-long school taught by a government contractor and is broken up into four weeks.

The first week focuses on radio frequency theory and analysis. That is the science behind phones and how they operate. In the second week, we learn from the major services providers, Verizon, Sprint AT&T, and T-Mobile. They teach us about how their networks are set up and how their records are maintained. The third week is learning how to conduct drive testing, where we test to see which towers a phone will connect to out in the field. Finally, the last week is a series of practical exercises using call detail records, a mock trial session, and a final exam.

Q: Do you receive any on-going training as part of the unit?

A: Yes, every year the team meets for training updates and recertification.

Q: Before we talk about this case, I'd like to talk more generally about this kind of evidence. How does a cellphone work?

A: Essentially, a cell phone is a two-way radio. It uses radio frequencies to communicate with a cell tower. Your phone is constantly communicating with a tower. The phone connects to the tower with the best signal. The tower then logs that connection so the network knows where to send a call or text that is destined for your phone. Likewise, your phone knows where to send a call when you dial a number.

Q: Is all of that constant communication stored?

A: Only briefly. The historical records we rely on tend to come from when the phone makes or receives a phone call or text message. We may also get some location information from data usage on the phone, such as streaming music.

Q: Can you explain what a cell tower is?

A: A cell tower is what your phone is connecting to. There are many types and configurations of cell towers, but most often they have three sectors. Each sector covers 120 degrees outward from the tower. The three sectors combine to cover the 360-degree radius around the tower.

Q: How far does the signal from the tower reach?

A: In an urban area it is typically one mile. In a rural area, it can be much further.

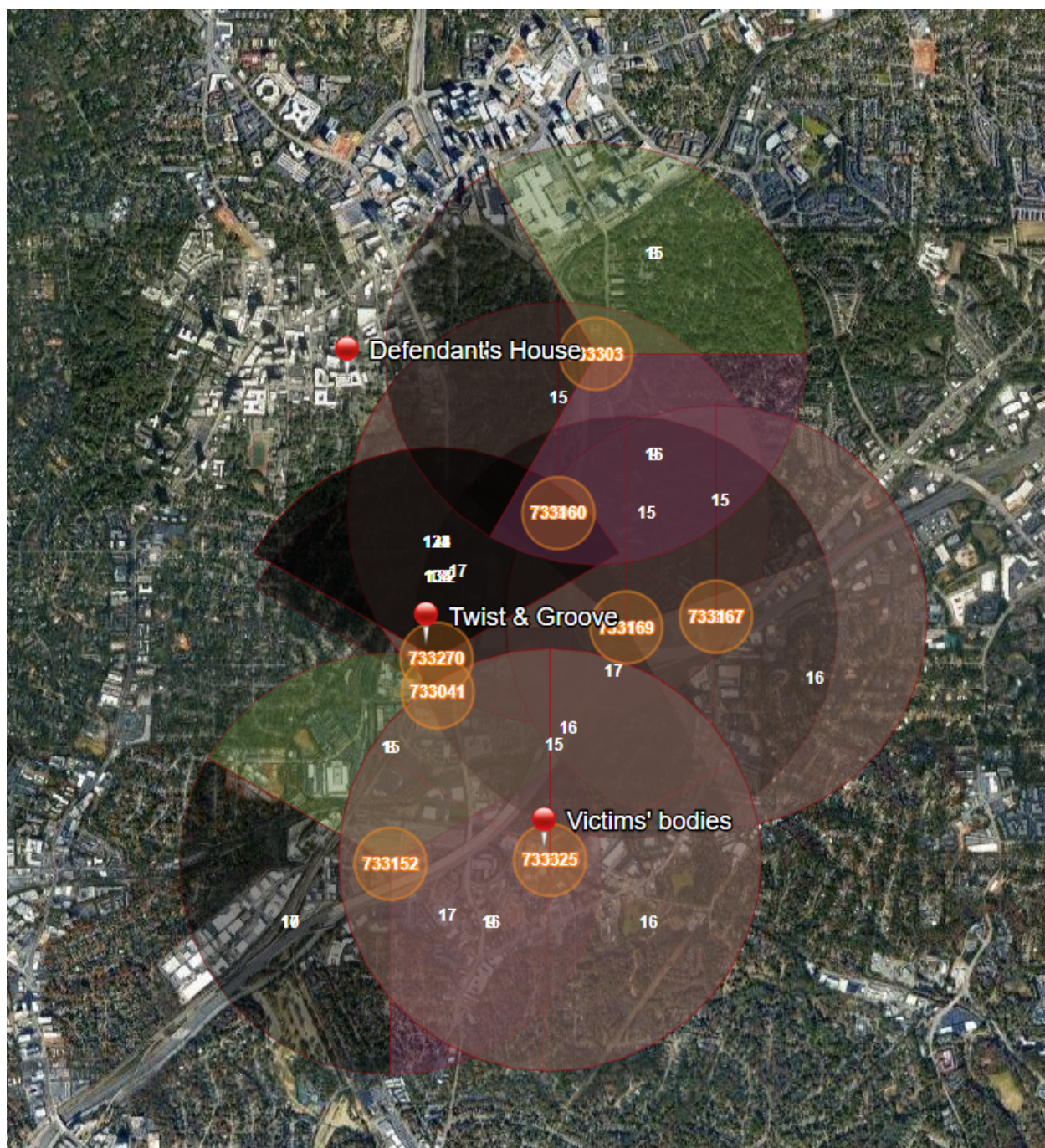
Q: What kind of data do you typically review from the carriers in cases where you are looking at this historical cell tower usage?

A: The carriers provide us with a cell site list, which shows where all of the cell towers in a particular area are located. Then they have the records related to the particular phone of interest. For those records, we get one of two types of location information.

The first kind shows which tower and sector the phone connected to, when, and for how long. The second kind has more detail, and, depending on the carrier, provides an estimate for where the phone is located, or how far from the tower the phone is.

Q: Did you receive such records in this case?

A: I did. This is a map of the cell tower locations in the area.



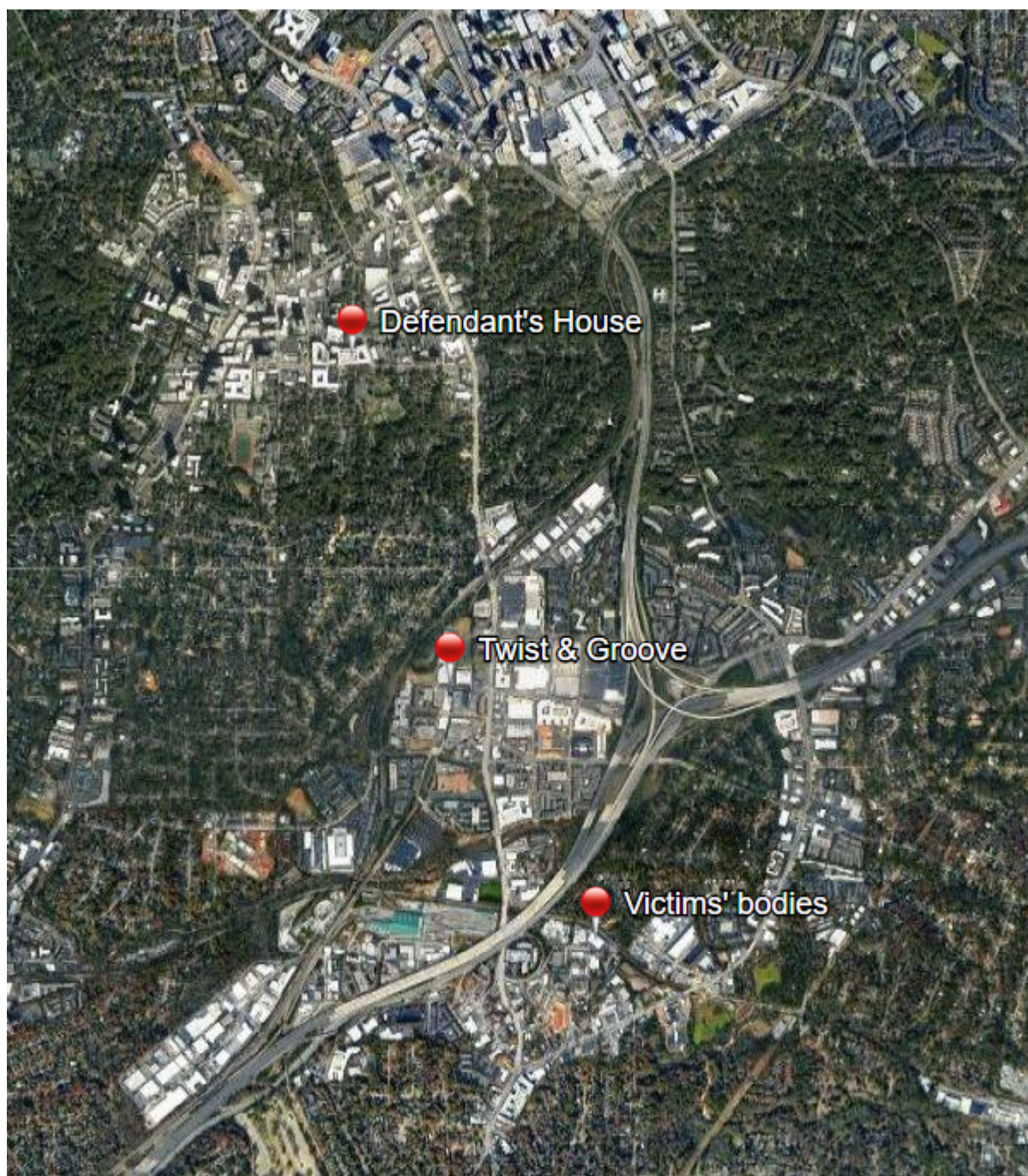
Q: Before we get into those records, how did you become involved in this matter?

A: Detective Iverson, asked me to review the cell tower records.

Q: What information did Detective Iverson provide for you?



- A: I was provided with the cell tower records of Dylan Thomas and Justine Ross for February 15<sup>th</sup>, (YR-2), as well as the address of the Twist & Groove Nightclub, Mr. Thomas' apartment, and where the victims were found.
- Q: How did you begin your work?
- A: I started by mapping the cell tower records of Mr. Thomas and Ms. Ross. Mr. Thomas' phone was using T-Mobile while Ms. Ross's phone was on AT&T. Her records are actually from AT&T's NELOS system, which provides more details as to the location of the phone.
- Q: Can you explain NELOS records for us?
- A: NELOS records indicate where AT&T believes a phone is located and then has a range of accuracy around that location. At their most basic level, it based on the simple equation we learn in high school – distance equals rate times time. We know how fast the signal travels, so we know the rate. Then the tower calculates how long it takes for the signal to get to the phone and then back again, giving us the time. Multiply those and you get the distance from the tower. There is a lot more at play than just those variables, but that is the basics of those records. These tend to be highly accurate records.
- Q: How did you go about mapping the data?
- A: I used a software program call Cell Hawk to upload the call detail records for both phones. Cell Hawk automatically parses and maps the data. Then it is just a question of focusing on the right times and locations.
- Q: What did you do after mapping the data?
- A: I placed a marker on the map for the club, Twist and Groove, at 2420 Piedmont Road, and a marker for the defendant's apartment at 400 Pharr Road, Northeast. The two locations are approximately a mile from each other, as the crow flies.
- Q: Did you look at the location where Sam Miller and Jennifer Ambrose were found?
- A: I did. They were found near 812 Lambert St, which is about 0.8 miles South of Twist and Groove.



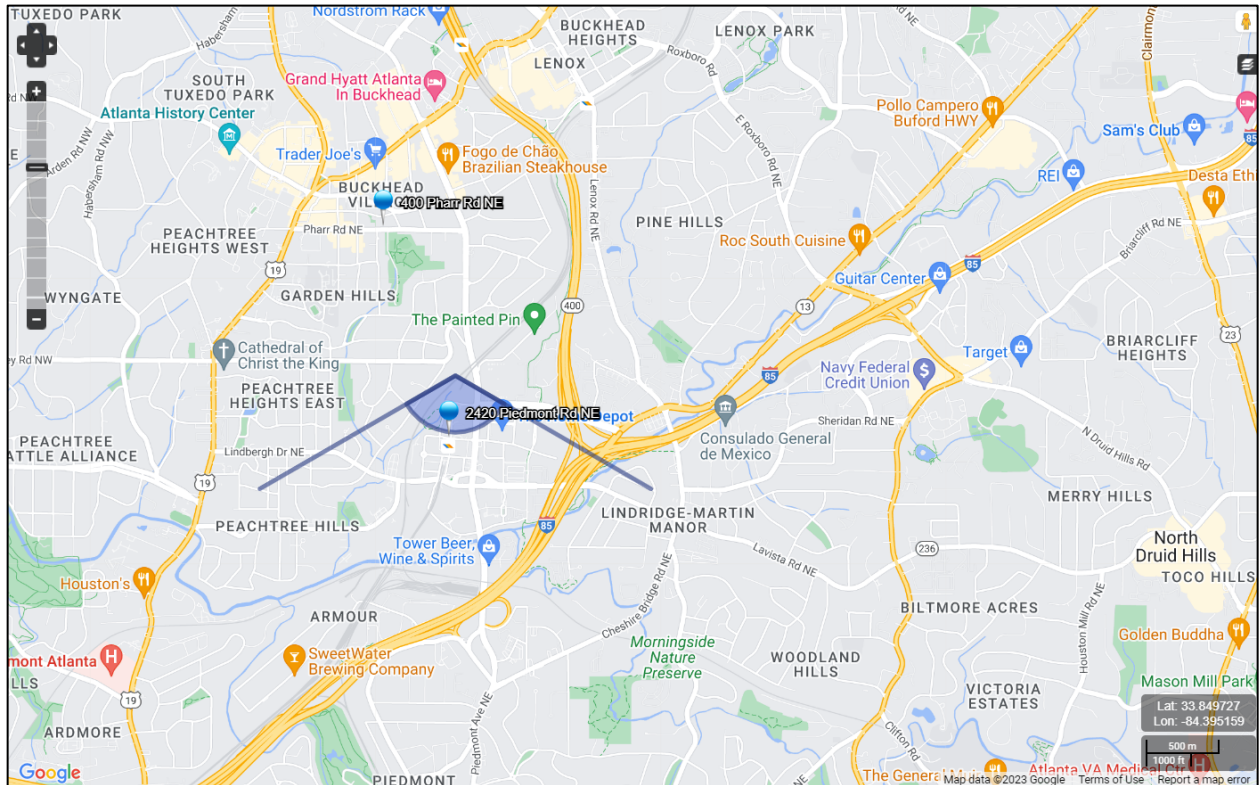
Q: You mentioned have records for both phones for February 15<sup>th</sup>, how did you use those records?

A: I focused my analysis on just 3:00 am to 6:21 am on the morning of February 15<sup>th</sup> as the club closed at 3:00 am and the 911 call to report the bodies came in at 6:21 am. Therefore, there is about a three-hour window of relevant activity.

Q: What did you find when looking at that time period?



A: Well, the first thing I noted was a call from the defendant's phone at 3:27 am on a tower right near the club.

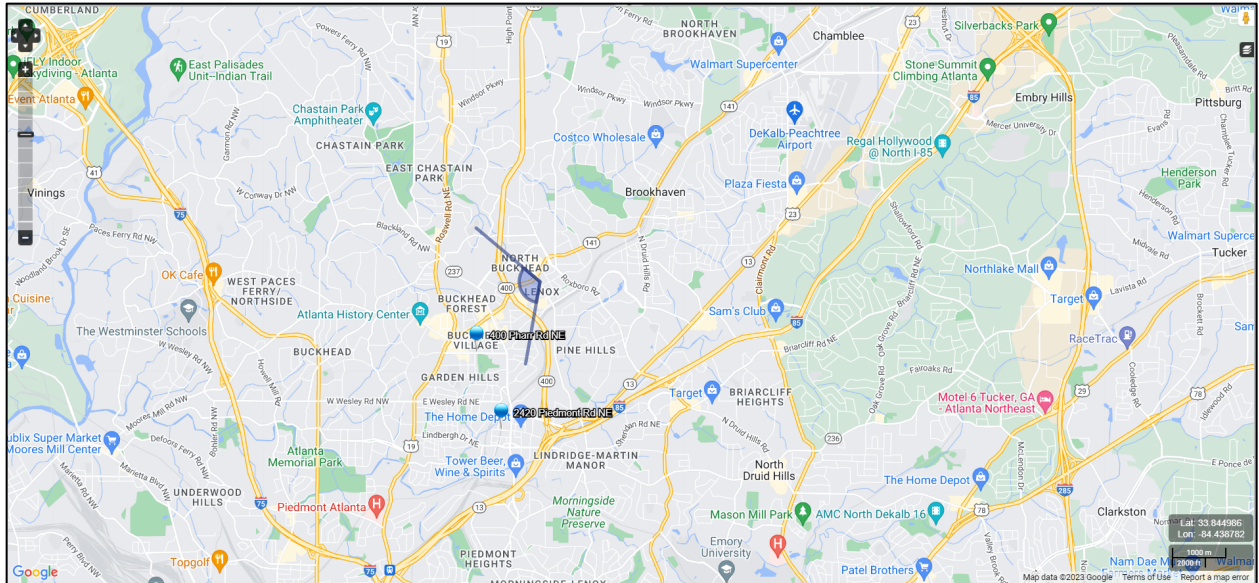


Q: What was significant about this call?

A: It is 27 minutes after the club closes, so Mr. Thomas should not have still been there. The sector of the tower he is connected to covers and area to the east and south of the tower. While the victim's bodies are just outside that area, the roads leading toward where they were found is covered by this tower. More importantly, Mr. Thomas' apartment is outside of the covered area. Given that he lives only a mile away if he had gone straight home after the club closed, he would likely already be home by 3:27 and thus not using this tower.

Q: Were there any other calls made by the defendant in the relevant time?

A: Yes, There was another call at 3:33 am using the exact same tower. Then there was a call at 3:55 am, using a tower to the northeast of the club, and east of the Defendant's home.



Q: Why was this call significant?

A: This tower covers the defendant's apartment. The defendant doesn't start using this tower until 3:55 am, nearly an hour after the club closes. This gives him plenty of time to drive south to follow the victims to the Lambert dead-end, shoot them, and then return home before making this call. It also shows us that when the defendant is at home, he uses this tower, and not the one that he was using at 3:27 and 3:33 am.

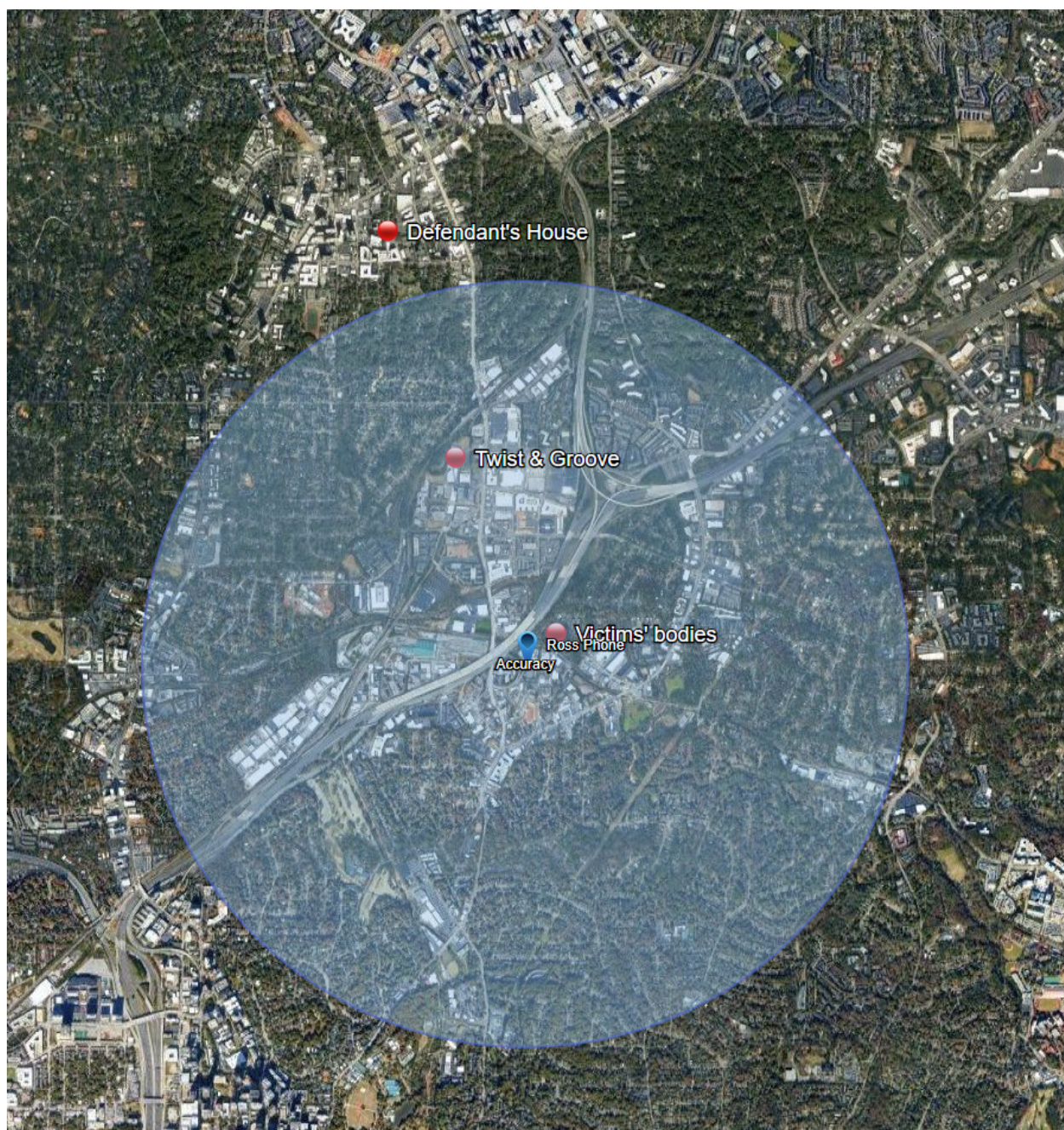
Q: You mentioned receiving the records for Ms. Ross, why did you look at those?

A: I understood that the murder weapon was found in her car. So I wanted to see if there was any connection between her and the defendant that night, to see how the gun may have ended up in her car.

Q: Did you find any connection?

A: Yes, I did. The first record I looked at from the NELOS data was a call at 3:30 am. She called the defendant for 35 seconds. The data places that call on Lambert, not far from where the victims were found. The records show the accuracy was better than 5000 meters, which is demonstrated by a circle around the location. The accuracy would eliminate the defendant's house as a possible location for the call.

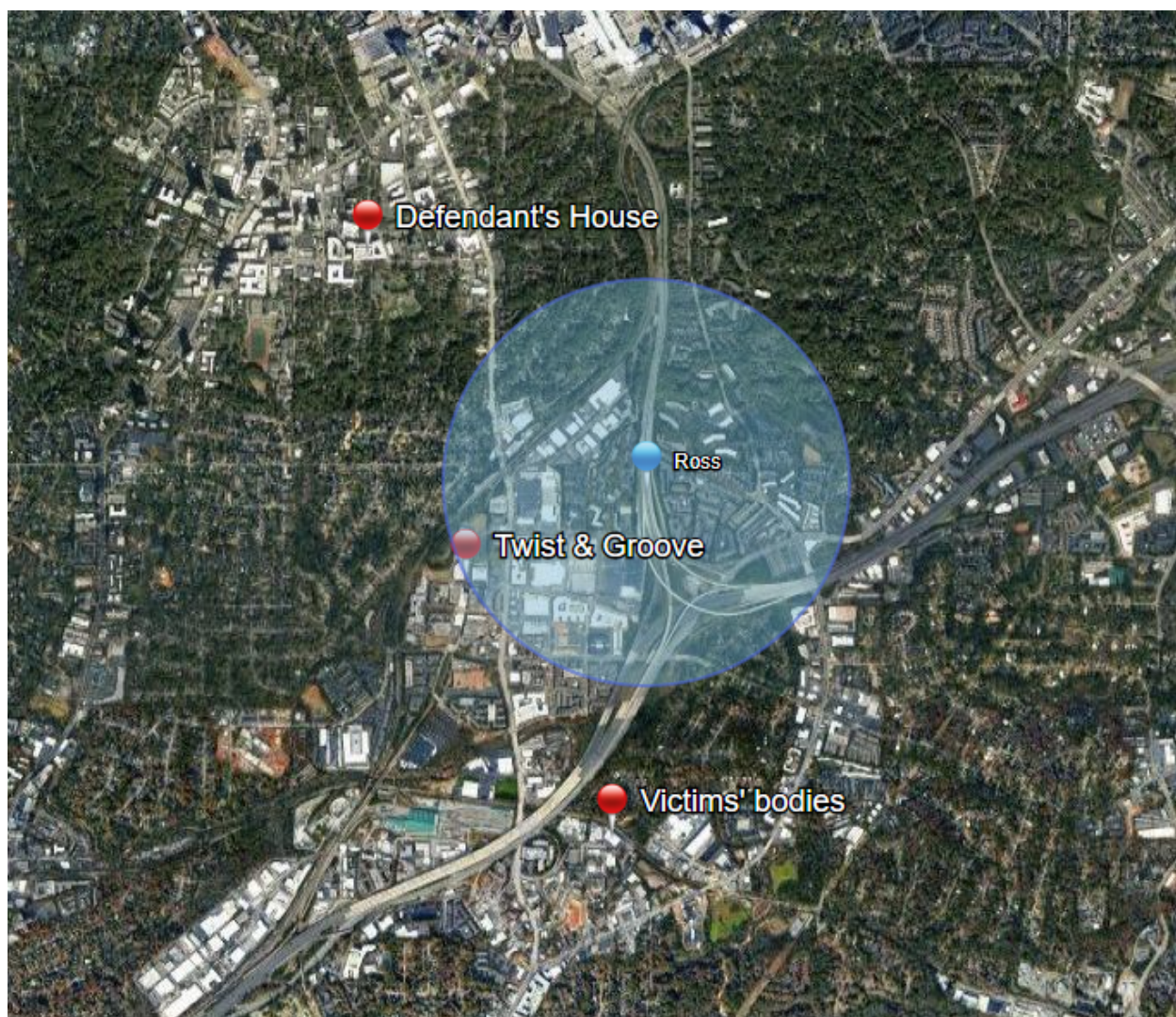




Q: Were there any other calls from her that were useful for your analysis?

A: Yes, there was another call at 3:45. This call places her on the highway, potentially in the direction of the defendant's house. This one had an accuracy of better than 2,500 meters. At this point, it is likely she picked up the defendant and they are heading back to his apartment.





Q: What conclusions did you make after conducting this mapping?

A: Based on these records, I believe the defendant left Twist and Groove when it closed and did not head immediately home. Instead, I believe he was in the area of where the victims were found. I believe that he then coordinated with his girlfriend, who picked him up from that location. Then they both traveled back to his apartment and were there by 3:55 am. Your witness counsel.