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SUPERIOR COURT OF NEW JERSEY
COUNTY OF MONMOUTH

Ind. No.: 19-02-283
Case No.: 18-4915

Decided: July 24, 2025

STATE OF NEW JERSEY,

v.

PAUL CANEIRO
Defendant.

FINDINGS AND CONCLUSIONS OF THE COURT ON
DEFENDANT'S MOTION TO PRECLUDE ARSON EXPERT
TESTIMONY

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for the State of New Jersey Monmouth County Prosecutor's Office

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WOOD, ESQ., and TAMAR LERER, ESQ., for Defendant, PAUL
CANEIRO

MARC C. LEMIEUX, A.J.S.C.

I. INTRODUCTION

This matter is before the Court on Defendant Paul Caneiro's motion to preclude expert arson testimony concerning the fire investigation at 15 Willow Brook Road, Colts Neck, New Jersey, the residence of Keith Caneiro and his family. Specifically, the Defendant seeks to bar the testimony of Detective Joseph Cordoma of the Monmouth County Prosecutor's Office, who authored an "Origin and Cause Investigation" report regarding the November 20, 2018 fire at that location.

Detective Cordoma conducted his investigation and prepared his report in accordance with standards set forth by the National Fire Protection Association (NFPA) 921, which governs the scientific methodology for fire and explosion investigations. His report concludes that the fire originated in the basement storage room, was slow burning, and was incendiary.¹ The Defendant challenges both Detective Cordoma's methodology and his qualifications to testify as an arson expert.

In support of his motion, the Defendant submitted an expert report by Christopher B. Wood of FireLink, LLC. Mr. Wood opined that the observed fire patterns after the post-flashover² fire in the storage closet cannot determine whether the fire was a

¹ NFPA 921 Section 3.3.124 defines an incendiary fire as a fire that is intentionally ignited in an area or under circumstances where and when there should not be a fire.

² NFPA 921 Section 3.3.96 defines a flashover fire as a transition phase in the development of a compartment fire in which surfaces exposed to thermal radiation reach ignition temperature more or less simultaneously

slow or smoldering fire or a large flaming fire. Because the duration from ignition to discovery cannot be determined, he concluded that no reliable opinion could be rendered.

Having conducted a N.J.R.E. 104 hearing, reviewed the parties' written submissions, expert reports, exhibits, photographs, and heard oral arguments, the Court finds that Detective Cordoma is qualified as an expert in arson investigations and that his testimony satisfies the criteria for admissibility under N.J.R.E. 702. His specialized knowledge, reliable application of a proven reliable scientific methodology, and expert opinions will assist the jury in evaluating complex evidence. Accordingly, Defendant's motion to preclude the State's arson expert's testimony is DENIED.

II. RELEVANT PROCEDURAL AND FACTUAL HISTORY

On November 20, 2018, at approximately 12:34 PM, a fire was reported at 15 Willow Brook Road, Colts Neck, New Jersey. Law enforcement responded and found one deceased individual outside and three additional decedents inside the home. Detective Joseph Cordoma was notified of the structure fire at 1:00 p.m. and

and, given sufficient availability of oxygen, fire spreads rapidly throughout the space, resulting in full room involvement of the compartment or enclosed space.

responded to the scene, which had been secured by the Colts Neck Police Department.

The fire investigation was conducted as a non-isolated investigation, involving personnel from the Monmouth County Fire Marshal's Office ("MCFMO"), the New Jersey State Fire Marshal's Office, the Bureau of Alcohol, Tobacco, Firearms and Explosives ("ATF"), and the Monmouth County Prosecutor's Office ("MCPO"). Detective Cordoma was tasked with preparing the "Origin and Cause Investigation" report, completed on February 21, 2019. His objectives were to determine the point of origin, the cause of the fire, and to assess how the fire developed and spread.

Detective Cordoma indicated that his investigation followed NFPA 921, which he described as the authoritative guide for rendering scientifically based opinions on the origin, cause, and prevention of fires and explosions. He outlined the NFPA 921 methodology: identifying the problem, collecting data, analyzing the data, developing and testing hypotheses, and selecting a final hypothesis.

He concluded that the fire originated in the basement storage room, that it was slow burning and remained in its incipient stage for an extended period, and that it was incendiary in nature. This determination was based on multiple visual examinations and the elimination of alternative points of origin within the home.

The storage closet was found to have the heaviest fire damage and exhibited low burns.

Detective Cordoma ruled out natural, electrical, accidental causes, spontaneous combustion, and careless disposal of smoking materials. While no definitive ignitable liquid was identified, the presence of a broken bottle of alcohol in the storage closet, along with torch strikers and potential fabric materials, supported the conclusion that the involvement of flammable liquids could not be excluded.

On May 4, 2025, Defendant's expert, Christopher B. Wood of FireLink, LLC, submitted his report. Mr. Wood reviewed Detective Cordoma's report, fire scene photographs, and other documentation, and his analysis also referenced NFPA 921. Mr. Wood concluded that two hypotheses were consistent with the evidence: (1) a slow fire with a long incipient or smoldering phase, or (2) a fast-developing fire culminating in flashover and full room involvement.

He noted that fire pattern evidence could not distinguish between these hypotheses, as the final state of the fire may obscure earlier developments. Mr. Wood emphasized that when multiple hypotheses fit the known facts and none can be eliminated through testing, then no single hypothesis can be presented as definitive.

On May 6, 2025, Defendant filed a motion to preclude Detective Cordoma's expert testimony, asserting that his conclusions fail to meet the reliability threshold under N.J.R.E. 702 and rely upon testimonial hearsay in violation of the Sixth Amendment's Confrontation Clause. Defendant argues Detective Cordoma's opinion on the rate of spread of the fire is unreliable and the opinion that the fire is incendiary is an inappropriate lay opinion.

Defendant also submitted a technical guidance document from the Organization of Scientific Area Committees (OSAC) for Forensic Science. OSAC outlines best practices in fire investigation and endorses the scientific method as the core approach. It notes that origin determination must proceed through the development and testing of hypotheses, narrowing the focus through data analysis.

The State filed opposition on June 5, 2025, maintaining that Detective Cordoma is a qualified expert and that a N.J.R.E. 104 hearing was warranted. The State argues that Detective Cordoma is qualified as an arson expert and that his opinions are based on a proven reliable methodology pursuant to NFPA 921 that was in fact reliably applied in this case. The State contends Detective Cordoma's reliance information gleaned during the investigation was appropriate and it does not violate the Confrontation Clause.

From June 30, 2025, through July 2, 2025, the Court held a testimonial hearing. Both Detective Cordoma and Mr. Wood testified, and the Court admitted numerous exhibits, including photographs and expert reports. Both witnesses testified credibly. While there were some differences in their qualifications, this Court finds any difference to be inconsequential to its overall determination. Mr. Wood may know the nuances of the NFPA 921 guidebook and NFPA 1033 Standard more thoroughly than Detective Cordoma, but Detective Cordoma's on-scene, practical, real-life experience is substantially better. Either way, both witnesses applied the same exact methodology in this case. Both experts evaluated the same evidence in making its determinations; one may have given more weight to certain evidence than the other, but that does not make either opinion unreliable. The methodology is sound and reliably applied, but each just came to a different result. The presence of competing hypotheses does not render Detective Cordoma's conclusions inadmissible; rather, it presents a factual issue for the jury, not a bar to admissibility.

Defendant's Confrontation Clause arguments are similarly unpersuasive. Detective Cordoma prepared the report and is available for cross-examination. His reliance on information from other investigators does not constitute testimonial hearsay under Crawford v. Washington and its progeny. The State intends to call Electrical Engineer Michael Abraham and potentially ATF Special Agent Jess Lampf and other fire investigators who were on scene. Even if the State does not call

every individual involved in the origin and cause investigation, Detective Cordoma based many of his conclusions on his visual observations and his extensive experience in arson investigations.

III. SUMMARY OF ARGUMENTS

A. The Defendant's Position

The Defendant contends that Detective Cordoma's opinions do not meet the requirements of N.J.R.E. 702 and 703 and impermissibly rely on testimonial hearsay from non-testifying experts. The Defendant further argues that, if the testimony is not excluded, the Court must inquire what portions of Cordoma's testimony depend on hearsay.

Defendant asserts that Detective Cordoma lacks sufficient expertise in fire investigations, citing a lack of training since 2015 and insufficient credentials. Defendant maintains that the Court must act as a gatekeeper and only permit testimony from those with adequate qualifications.

Defendant also argues that Cordoma's conclusions are neither proper expert opinions nor permissible lay opinions, alleging that they are speculative and not scientifically grounded. He contends that any opinions on fire spread rate or

incendiary cause are inappropriate and potentially invade the jury's role, especially with regard to determining intent.

At summation, Defendant emphasized the unreliability of the slow-burn hypothesis and the speculative nature of Cordoma's conclusions, urging exclusion of the testimony for lack of scientific foundation and violation of confrontation rights.

B. The State's Position

The State maintains that Detective Cordoma is qualified under N.J.R.E. 702 and that his opinions are based on a reliable methodology applied in accordance with NFPA 921 and OSAC standards. The State agrees a N.J.R.E. 104 hearing was appropriate and contends that Detective Cordoma properly relied on scene and non-scene data, including witness accounts and scene artifacts.

The State argues that OSAC best practices support a comprehensive, team-based approach to fire investigation and that Detective Cordoma's use of investigative team input does not violate the Confrontation Clause. Furthermore, the State submits that NFPA 921 and 1033 address the use of non-scene data in origin determinations, including witness accounts and electronic data such as security footage.

According to the State, Cordoma transparently documented all information considered in the report, and any reliance on outside information was consistent with N.J.R.E. 703.

The State also notes that the presence of conflicting hypotheses does not render expert testimony inadmissible but instead goes to weight and credibility, suitable for jury consideration. The State asserts that Defendant's expert improperly discounted critical evidence and that Detective Cordoma's report is consistent with professional standards.

At summation, the State argued that the Defendant's objections are properly addressed through cross-examination and do not support exclusion under *N.J.R.E.* 702 or the Sixth Amendment.

IV. GOVERNING LAW AND LEGAL ANALYSIS

N.J.R.E. 702

N.J.R.E. 702 governs the appropriate standard to evaluate the admissibility of expert evidence. N.J.R.E. 702 states:

If scientific, technical, or other specialized knowledge will assist the trier of fact to understand the evidence or to determine a fact in issue, a witness qualified as an expert by knowledge, skill, experience, training, or education may testify thereto in the form of an opinion or otherwise.

[N.J.R.E. 702.]

It is well-settled that “the proponent of expert evidence must establish three requirements:

- (1) the subject matter of the testimony must be ‘beyond the ken of the average juror’;
- (2) the field of inquiry ‘must be at a state of the art such that an expert's testimony could be sufficiently reliable’; and
- (3) the witness must have sufficient expertise to offer the testimony.

State v. Olenowski, 253 N.J. 133, 143 (2023) (quoting State v. J.L.G., 234 N.J. 265, 280 (2018)).

A. The Court finds the origin and cause determinations are beyond the ken of the average juror

As the gatekeeper, the trial judge must make a preliminary determination that the proffered expert testimony satisfies the threshold requirement that the subject matter is beyond the understanding of the average juror. Olenowski, 253 N.J. at 143. This determination falls within the sound discretion of the trial judge, as does the decision to conduct a N.J.R.E. 104 hearing to make that assessment. See State ex rel. C.D., 354 N.J. Super. 457, 466 (App. Div. 2002).

In this case, the Court conducted a N.J.R.E. 104 hearing and heard testimony from both Detective Joseph Cordoma and Christopher Wood. The Court accepted both witnesses as experts in origin and cause determinations and fire investigations. Each testified regarding the level of training, experience, and scientific methodology required to render reliable opinions in this field. The Court finds this testimony credible and persuasive.

Accordingly, the Court concludes that the subject matter of the proposed expert testimony is beyond the ken of the average juror. State v. Cotto, 471 N.J. Super. 489, 532 (App. Div. 2022). Therefore, the first requirement of N.J.R.E. 702 is satisfied.

B. The Court finds the methodology used in making the origin and cause determinations is reliable and Detective Cordoma reliably applied that methodology

The second requirement mandates that expert testimony must be both reliable and grounded in reliable information to be admissible at trial. To satisfy this requirement, the expert must utilize a technique or analysis with “a sufficient scientific basis to produce uniform and reasonably reliable results so as to contribute materially to the ascertainment of the truth.” State v. Kelly, 97 N.J. 178, 210 (1984).

“Reliability is critical to the admissibility of expert testimony.” Olenowski, 253 N.J. at 150. As the Court in Kelly emphasized, “[a]n expert opinion that is not reliable is of no assistance to anyone.” State v. Kelly, 97 N.J. at 209. Therefore, expert techniques and methods must be sufficiently scientific to produce uniform and reasonably reliable results. Id. At 210. Expert testimony is admissible when it assists the jury in understanding the evidence or determining a fact in issue. State v. Berry, 140 N.J. 280, 291 (1995). However, such testimony is unnecessary when the matter is obvious or can be resolved by the juror’s common understanding. State v. Simms, 224 N.J. 393, 403 (2016).

As the New Jersey Supreme Court has repeatedly held, “[m]ethodology, in all its parts, is the focus of the reliability assessment, not outcome.” In re Accutane Litig., 234 N.J. 340, 397 (2018). The proponent bears the burden of clearly establishing the reliability of the methodology. See State v. Cassidy, 235 N.J. 482, 492 (2018) (“The proponent of the technique has the burden to ‘clearly establish’ general acceptance.”); Olenowski, 253 N.J. at 618 (Pierre-Louis, J., dissenting) (“[T]he proponent must carry the burden to ‘clearly establish’ that the testimony is sufficiently reliable under N.J.R.E. 702”); State v. Shabazz, 400 N.J. Super. 203, 210 (App. Div. 2005)

An expert must employ “a technique or analysis with ‘a sufficient scientific basis to produce uniform and reasonably reliable results so as to contribute materially to the ascertainment of the truth.’” State v. J.R., 227 N.J. 393, 409 (2017) (quoting Kelly, 97 N.J. at 210). Certainty is not required so long as the expert’s opinions are based on the scientific method and supported by appropriate validation. In re Accutane Litig., 234 N.J. at 383. The expert’s opinion must have a reliable foundation rooted in the knowledge and experience of the relevant discipline. Daubert v. Merrell Dow Pharms., Inc., 509 U.S. 579, 592 (1993). Furthermore, New Jersey courts have held that N.J.R.E. 702 should be construed liberally and “tilt in favor of the admissibility of expert testimony.” State v. Jenewicz, 193 N.J. 440, 454 (2008).

Where a party challenges expert testimony under N.J.R.E. 702, the trial court should conduct a hearing under N.J.R.E. 104. State v. J.R., 227 N.J. at 409. That hearing provides the proponent an opportunity to establish the expert's methodology as reliable, and it enables the opponent to challenge that reliability. A Rule 104 hearing is "a favored means to create a record for appellate review of a disputed decision." Ibid.

Here, the Court conducted a Rule 104 hearing, as discussed above. Detective Joseph Cordoma testified extensively regarding the methodology he employed to determine the origin and cause of the fire at 15 Willow Brook Road. His testimony was consistent with his report and reflected his application of the scientific method.

Detective Cordoma testified that his investigation followed *NFPA 921*, the recognized standard for scientifically based investigation and analysis of fire and explosion incidents. He explained that *NFPA 921* is the foremost guide for rendering accurate opinions regarding fire origin, cause, responsibility, and prevention. He also noted that *NFPA 921* is used by both public fire investigators and private-sector professionals, including those engaged in insurance and litigation-related matters.

Detective Cordoma outlined his three primary objectives:

1. Determine the fire's origin;
2. Determine the fire's cause; and
3. Assess the development and spread of the fire.

To achieve these objectives, he followed the scientific methodology as defined by *NFPA 921*:

1. Recognize the need;
2. Define the problem;
3. Collect data;
4. Analyze the data;
5. Develop a hypothesis;
6. Test the hypothesis (deductive reasoning); and
7. Select the final hypothesis.

To evaluate whether Detective Cordoma properly applied *NFPA 921*, the Court must “assess both the methodology [actually] used by the expert to arrive at an opinion and the underlying data used in the formation of the opinion.” In re Accutane Litig., 234 N.J. at 396–97. This assessment ensures that the expert “is adhering to norms accepted by fellow members of the pertinent scientific community.” Id. at 397.

Ultimately, the Court must determine whether the State has shown that Detective Cordoma “applied his . . . scientifically recognized methodology in the way that others in the field practice the methodology.” Id. at 399–400. If the State demonstrates “the soundness of [his] methodology, both in terms of its approach to reasoning and to its use of data, from the perspective of others within the relevant

scientific community,” then the Court must conclude the testimony is reliable. *Id.* at 400.

Chapter 4 of *NFPA 921* provides the basic methodology for fire investigation. Section 4.1 states that the methodology “should rely on the use of a systematic approach and attention to all relevant details.” The method employed by Detective Cordoma follows the scientific method prescribed in *NFPA 921*—recognizing the need, defining the problem, collecting and analyzing data, developing hypotheses (through inductive reasoning), testing hypotheses, and selecting a final hypothesis.

Because *NFPA 921* is widely accepted as the scientific standard for determining fire origin and cause, its application is clearly reliable. The remaining question is whether Detective Cordoma reliably applied that method in this case.

The record establishes that he did. Detective Cordoma’s data collection and problem definition, consistent with *NFPA 921*, are uncontested. He testified that the data was based on a “totality of the scene examination,” which included both an exterior and interior assessment. The exterior analysis covered the solar farm, patio, playground, pool, and basement entrance. He found no evidence of an exterior-origin fire. The interior examination included all rooms and structural areas.

He further testified that he employed inductive reasoning during data analysis, beginning with the least burned and least damaged areas and progressing to those with the most damage. This logical and systematic analysis led the investigative

team to identify the basement storage closet as the fire's area of origin. This aspect of his testimony was unchallenged and demonstrably reliable.

Detective Cordoma developed his hypothesis based on the empirical data observed, documented, and collected by the investigative team. He concluded that the fire was incendiary in nature and explained, in detail, how the data led to the exclusion of other potential causes. He articulated how he ruled out accidental, natural, and electrical origins, supporting his hypothesis with facts obtained during the investigation. Specifically, Detective Cordoma relied upon ATF Electrical Engineer Michael Abraham to rule out electrical origins. He ruled out accidental and natural based upon a lack of ANY on scene evidence to support either hypothesis.

The Defendant's argument that Detective Cordoma did not use scientifically valid methods is unpersuasive. Indeed, Defendant's expert, Christopher Wood, utilized similar methodology in producing his own report. Mr. Wood conceded that *NFPA 921* recommends the use of the scientific method in origin determinations. However, Mr. Wood was not retained to conduct the same type of investigation. He acknowledged that his report was narrowly limited to the question of whether the duration of the fire could be determined solely by examining the physical fire scene. Despite his criticisms, Mr. Wood agreed that the storage closet was the area of origin.

i. Detective Cordoma's testimony regarding the rate of spread of the fire is clearly reliable based upon reliable methodology

While the area of origin of fire is not in dispute, the rate at which the fire spread remains contested. *NFPA 921* outlines four categories of information that investigators may use in origin determinations:

- A) Witness information and/or electronic data
- B) Fire Patterns
- C) Arc Mapping
- D) Fire dynamics

a. Witness information and/or electronic data

The Court notes the critical distinction between the approaches of Detective Cordoma and Mr. Wood with respect to the use of witness information and electronic data.

Detective Cordoma relied on various forms of witness information and non-scene evidence. He noted that the 911 call was placed at 12:34 p.m. Upon arrival, firefighters observed heavy smoke, but no visible fire, near the first-floor landings and adjacent staircases at 15 Willow Brook Road. After suppression efforts began and outside air was introduced into the structure, the fire progressed rapidly until ultimately controlled by fire personnel. Following extinguishment, Detective Cordoma and the origin and cause investigative team collaborated to evaluate all pertinent facts related to the scene.

Detective Cordoma considered several pieces of what he deemed relevant non-scene evidence, including:

- Wyze camera footage showing an individual outside the garage door at approximately 3:00 a.m., shortly before power to the home was disabled;
- A tampered electrical panel with its door ripped off and lying on the ground;
- A tampered home generator located in close proximity to the tampered electrical panel and where the individual was documented on the Wyze camera footage;
- A 911 call made at approximately 3:33 a.m. reporting five gunshots, a two-second pause, then one more shot, from a location 2.6 miles away;
- The body of victim K.C., located outside on the lawn, with multiple gunshot wounds and six shell casings nearby;
- The body of victim J.C., found inside the home, with a single gunshot wound and multiple stab wounds;
- Two juvenile victims inside the home, both suffering multiple stab wounds and who failed to appear at their bus stop that morning;
- A severed fiber optic line to the Verizon ONT, which disabled communication and internet-connected devices around 3 a.m.;
- The absence of fire alarm activation due to the power outage; and
- Fire patterns in the area of origin.

In contrast, Mr. Wood limited his analysis to physical fire scene evidence in assessing whether the fire burned for a long or short duration. The only witness

information he referenced was the 12:34 p.m. 911 caller. He dismissed the earlier 3:33 a.m. 911 call reporting gunshots, claiming it was irrelevant to fire evidence. Regarding electronic data, Mr. Wood merely noted the absence of any fire alarms being heard or reported to a central monitoring station. He testified that no other electronic data contributed to his origin assessment. He concluded that the fire began sometime before the 12:34 p.m. 911 call but could not determine a more specific time based on the limited data he considered.

It defies logic to exclude relevant non-scene information when establishing the fire's timeline. *NFPA 921*, *NFPA 1033*, and OSAC reports all acknowledge that non-scene evidence can be critical in fire origin and spread determinations. The OSAC report specifically notes that interviews with witnesses and neighbors can provide essential information about a fire's origin, spread, and timeline. See OSAC at 78.

NFPA 921 Section 14.1.3, titled *Data Relevance, Accuracy, and Reliability*, states:

“...there should be no presumption as to information's relevance, accuracy or reliability without such an evaluation. Witnesses and other sources of information provide a wide range of information that may or may not be relevant to origin and cause analysis. Part of the investigation is evaluating the relevance of data. The

information may be relevant if it tends to lead to additional relevant data, generate hypotheses, and corroborate or refute any hypothetical scenario under consideration.

Detective Cordoma followed this exact methodology. In determining that the fire was slow burning, he evaluated all relevant information to corroborate his findings. In contrast, Mr. Wood's decision to disregard non-scene evidence arguably renders his opinion less reliable, as it reflects a departure from Chapter 14 of *NFPA 921*.

Ultimately, the reliability of each expert's methodology will be a matter for the jury to assess. However, the Court finds that Detective Cordoma's consideration of non-scene evidence aligns with accepted scientific methodology and provides a reliable foundation for his conclusions.

b. Fire Patterns

Detective Cordoma testified to the presence of heavy soot buildup throughout the basement; specifically, a black, powdery or flaky substance composed largely of carbon, produced by the incomplete combustion of organic matter. He explained that once the structural integrity of the storage closet weakened, additional oxygen entered the space, allowing the fire to transition into a free-burning stage. At that point, the fire continued to grow and spread.

Detective Cordoma supported his testimony with Exhibit 4, Slide 40, which he used to demonstrate the fire's progression. He explained that the evidence in this

photograph indicated slow development: the fire began with smoke and transitioned to open flame. He noted alligator charring on the beams as evidence of the slow progression of the fire. He concluded that the fire remained in the incipient stage, a slow-burning phase, before entering the free-burning stage. Based on this analysis, Detective Cordoma further concluded that the storage closet door remained closed during at least part of the fire's incipient phase.

By contrast, Mr. Wood testified that the fire patterns were inconclusive. He stated, "there is no doubt that the storage closet fire progressed post-flashover to full room involvement." See D-3. Mr. Wood acknowledged the possibility of a smoldering or incipient phase but noted that a post-flashover fire could present overlapping fire pattern characteristics. He testified that the observed fire patterns do not definitively distinguish between a smoldering fire and a post-flashover event. Thus, while he agreed that a slow or smoldering fire may have occurred, he concluded that this could not be determined based solely on fire patterns.

This Court has carefully evaluated both experts' testimony regarding fire patterns and finds Detective Cordoma's opinion more credible.

First, Detective Cordoma's conclusions stem from extensive practical experience. He has investigated over 100 fire scenes and personally evaluated corresponding fire patterns. While Mr. Wood relied on NFPA 921 diagrams to

support his conclusions, Detective Cordoma applied his direct observational knowledge gained through years of fieldwork.

Second, Detective Cordoma was physically present at the scene both during and immediately after the fire. His ability to observe the fire damage firsthand provided context and detail that photographs alone cannot always convey. Mr. Wood acknowledged during his testimony that being present at a fire scene can offer critical insights beyond what pictures can show.

Accordingly, the Court finds that Detective Cordoma's reliance on fire patterns aligns with *NFPA 921* standards and is based on a reliable scientific methodology. His opinion is therefore admissible and clearly reliable.

C. Arc Mapping

Arc mapping is the process of identifying electrical arcs on wiring, which may include either structural wiring or load wiring. Although arc mapping typically does not determine the cause of a fire, it can serve as a useful tool in assisting with origin determination.

In this case, both experts agreed that no arc artifacts were found. As a result, arc mapping did not contribute to either experts' opinion regarding the fire's origin or cause.

D. Fire Dynamics

Much of the expert analysis aligns with the fire patterns observed in this case. Mr. Wood testified that fire dynamics demonstrate two possibilities: while a slow or smoldering fire may take a long time to reach full room involvement, other reported tests have shown that full room involvement can occur within just three to five minutes.

Detective Cordoma, by contrast, relied on scene evidence and his own observations to support his final hypothesis—that the fire progressed slowly. He concluded that the fire was slow burning based on the fire patterns, soot accumulation, and other contextual indicators at the scene.

For the reasons already discussed, the Court finds Detective Cordoma’s opinion to be clearly reliable.

E. Detective Cordoma’s opinion is not a lay opinion

The Court finds that Detective Cordoma’s opinion regarding the rate of fire spread is not an impermissible lay opinion. The Defendant argues that the opinion is unreliable, incorrect, not based on fire evidence, and not an expert opinion. (3T:5-9 to 5-15). He further contends that these issues affect admissibility rather than weight. (3T:5-14).

However, the record reflects that Det. Cordoma based his conclusion that the fire was slow burning on physical evidence. Specifically, he states the fire, once ignited, remained in the incipient stage (slow burning), with the Storage Closet door

most likely closed to support this stage of burn. Indicators within the structure support this stage for an extended period. The presence of heavy soot build-up throughout the basement was evident.

Det. Cordoma reached this conclusion after the investigative team determined that the Storage Closet was the area of origin. He testified that he observed gradual charring in the closet studs, indicating that heat and fire impingement originated from within the closet and transitioned slowly outward. He explained:

“Specifically in the studs... giving us indication that heat, that heavy heat, that fire impingement is coming from inside the closet as opposed from the outside going in... Instead of that distinct line of demarcation of burn to no burn, you could see gradual charring... indicative of again not concrete definitive but could be looked at as a slow type of emerging fire.”
[1T:174-25 to 175-11]

Det. Cordoma also explained that he relied on both scene and non-scene data. He considered information from Major Crimes detectives, including the de-energized condition of the house, lack of audible alarms, neighbor observations, and the timing of the 911 call. (1T:201-1 to 201-5). Taken together, this evidence supported his theory that the fire burned slowly over the course of several hours. (1T:201-6).

He further testified that the burn patterns on the wall studs—showing a gradual rather than abrupt transition—supported the presence of an extended incipient stage. (1T:208-6 to 208-9). He explained that the fire’s location in a small,

enclosed compartment like the Storage Closet allowed it to remain in the incipient stage for a prolonged period. (1T:201-13 to 201-16).

When questioned on cross-examination, Det. Cordoma clarified that his opinion was based on both physical evidence and additional non-scene sources:

“[I]t was the additional references... like interviews, surveillance footage, the fact that there was a deceased male outside, who did not look like [he] was involved in the fire at all. The fact of the deceased individuals inside, two of which had extensive fire injuries, and one that did not.”

[1T:251-7 to 251-13]

According to OSAC, the use of non-scene data is appropriate in assessing the growth and spread of fire. D-5 at 80. Det. Cordoma properly relied on both scene and non-scene data in reaching his conclusion. His opinion is not a lay opinion; rather, it is a product of applying expert knowledge to investigative findings. As McLean makes clear, expert testimony may be based on evidence gathered by an investigative team, not only on personal perception. McLean, 205 N.J. at 459.

The Defendant argues that Det. Cordoma failed to consider or rule out an alternative hypothesis; that the fire rapidly progressed to full room involvement within minutes, without a prolonged incipient phase. Mr. Wood, the defense expert, confirmed that a large, post-flashover fire eventually consumed the Storage Closet and stated that his focus was on whether that fire was preceded by a slow or smoldering phase.

Defendant asserts that NFPA 921 requires the consideration of alternative hypotheses and that Det. Cordoma did not address this specific alternative in his report. The Court finds that Detective Cordoma did consider it but based upon all the information previously discussed in this opinion, to include the non-scene evidence, that the slow burning hypothesis was consistent with ALL of the evidence.

Even though Det. Cordoma did not explicitly address the alternative hypothesis in his report, he is still permitted to offer an expert opinion that the fire was slow burning. His opinion is based on physical evidence and investigative findings, not solely on personal perception. McLean, 205 N.J. at 459. The Court further finds that his testimony will assist jurors in interpreting complex fire evidence, such as burn patterns, subjects outside the knowledge of the average juror. McLean, 205 N.J. at 459; Cotto, 471 N.J. at 531.

This Court is confident that Det. Cordoma will be able to distinguish between his expert conclusions and any lay beliefs when he testifies at trial. His testimony demonstrated a thorough analysis of all potential causes of this fire. During the evidentiary hearing, he provided thoughtful and honest responses to direct and cross-examination. The Court found him to be a credible witness. His candor further strengthened his reliability. For example, when asked about the progression of the fire, he responded:

“But without me being there and seeing that firsthand, the fire patterns in and of itself, I can’t tell you what failed first, was it that landing, or

was it the door, was it the wall along the C side. I just, based on the firefighters, I can't tell you that. I can only tell you that there was a slow burning fire in my opinion, based upon the totality of everything that I took into consideration with regard to that investigation at that home."

[1T:261-13 to 261-21]

Accordingly, the Court finds that Det. Cordoma's expert opinion regarding the rate of fire spread of the fire is proper under the rules of evidence and will assist the jury in evaluating the fire evidence presented.

F. Detective Cordoma's opinion that the fire was incendiary is appropriate expert opinion

Defendant argues that Detective Cordoma's opinion that the fire was incendiary constitutes an improper lay opinion rather than admissible expert testimony. Expert testimony is governed by N.J.R.E. 702, while N.J.R.E. 701 governs lay opinion testimony. Lay opinion is admissible only if it is rationally based on the witness's perception and assists in understanding the witness's testimony or determining a fact in issue. State v. Watson, 254 N.J. 558, 591 (2023); N.J.R.E. 701.

There are limits to lay opinion testimony. A witness may not offer an opinion that is not based on personal perception or where the jury is capable of drawing its own conclusion. State v. McLean, 205 N.J. 438, 459 (2011). Lay opinion must stem from direct perception and may not rely on otherwise inadmissible hearsay. Id. at 460.

Expert witnesses, in contrast, may offer insight grounded in specialized knowledge and must distinguish between what they know as experts and what they might believe as laypersons. State v. Jamerson, 153 N.J. 318, 340 (1998) (permitting expert testimony on physiological causes of death but not on whether a collision was accidental, as that is within the jury’s competence). Experts must not opine on matters within the average juror’s understanding or express opinions about a defendant’s guilt. State v. Cain, 224 N.J. 410, 426–27 (2016) (holding that expert testimony regarding a defendant’s state of mind improperly invades the jury’s role).

As this Court previously found, arson investigations require specialized knowledge beyond that of the average juror. Testimony from law enforcement officers with extensive training and experience in fire investigations falls within the scope of N.J.R.E. 702. The Appellate Division has confirmed that “expert testimony concerning fire patterns and how different materials catch fire and spread would assist the jury.” Cotto, 471 N.J. Super. at 532.

Here, the defendant contends that Detective Cordoma’s opinion that the fire was incendiary is inadmissible as expert testimony because it relied in part on non-scene data and inferences derived from his role as a police officer. (2T:22-14 to 25-6). Defendant urges the Court to accept only those opinions supported by a scientific methodology, such as NFPA 921, and to treat all others as inadmissible lay opinion.

However, during oral argument, the State correctly emphasized that OSAC expressly permits reliance on non-scene data. The OSAC report notes:

“Complete and thorough documentation of scene data is important because the relevance and importance of that data may only be understood at a later time. Data used to form a conclusion about the origin and cause of a particular fire are drawn from many different sources. These include sources outside (e.g., a witness interview) and inside the actual fire scene (e.g., fire patterns).”
[D-5 at 72].

OSAC further explains:

“Investigators collect ‘non-scene data’ and may use it to help establish the fire or explosion timeline, identify an area of origin, document the growth and spread of the fire, identify suppression efforts which may have affected fire growth and spread, provide context to another piece of data, or to establish evidence of causation (e.g., lightning, intentional human acts). In rare instances, non-scene data may be the most relevant data used to determine an area of origin or a fire cause.”
[D-5 at 80]

And as clarified in D-5 at 81:

“Non-scene data is only relevant to identifying where the fire started (origin) and the circumstances that brought an ignition source into contact with the first fuel ignited (cause). It should not be used to establish responsibility, motives, means, and opportunity.”

NFPA 921 similarly recognizes the value of both scene and non-scene data. Section 4.4.3.2 explains that a fire investigation may involve reviewing previous scene documentation, conducting witness interviews, analyzing others’ investigations, and gathering data from additional sources. Section 14.1 confirms

that reviewing documentation, interviewing witnesses, and conducting research all help establish origin and cause.

In this case, Detective Cordoma's conclusion that the fire was incendiary followed NFPA 921 and the scientific method. He applied a process of elimination based on objective evidence rather than personal opinions. His testimony reflects that he did not rely solely on non-scene data. Instead, he explained that the video footage corroborated the physical evidence he observed at the scene, including the state of the generator. (1T:143-16 to 144-3). He further testified that a broken alcohol bottle in the storage closet prevented him from ruling out an incendiary cause. (1T:271-10 to 271-14). These combined elements allowed him to eliminate other potential causes. See D-1 at 17.

As OSAC confirms, an expert may rely on non-scene data to determine the cause of a fire. Both scene and non-scene data play legitimate roles in origin and cause determinations. In fact, both experts in this case relied on non-scene data. Mr. Wood referenced power lines being cut, loss of power to the home, a disconnected electrical meter, and text messages sent by Keith Caneiro around 3:00 a.m. on the day of the fire. (2T:102-19 to 104-14). Similarly, Detective Cordoma properly considered non-scene information as part of his expert methodology.

Accordingly, the Court finds that Detective Cordoma's opinion that the fire was incendiary constitutes proper expert testimony under N.J.R.E. 702. His reliance

on some non-scene data, in accordance with NFPA 921 and OSAC guidance, does not transform his conclusions into inadmissible lay opinion.

G. Detective Cordoma’s opinion complies with N.J.R.E. 703

N.J.R.E. 703 governs the basis for expert opinion testimony:

“The facts or data in the particular case upon which an expert bases an opinion or inference may be those perceived by or made known to the expert at or before the proceeding. If of a type reasonably relied upon by experts in the particular field in forming opinions or inferences upon the subject, the facts or data need not be admissible in evidence.”

[N.J.R.E. 703]

Under N.J.R.E. 703, an expert’s opinion must rest on “facts or data derived from (1) the expert's personal observations, (2) evidence admitted at trial, or (3) data typically relied upon by experts in the field, even if not otherwise admissible.” Townsend v. Pierre, 221 N.J. 36, 53 (2015) (quoting Polzo v. County of Essex, 196 N.J. 569, 583 (2008)). The focus of the inquiry is not whether the court would admit the facts or data, but whether experts in the relevant field reasonably rely on them. Rubanick v. Witco Chem. Corp., 125 N.J. 421, 445 (1991).

Here, Det. Cordoma relied on facts and data that experts in the fire investigation field reasonably rely upon, as required by New Jersey law. See *Rubanick*, 125 N.J. at 445. He personally observed the scene on November 20, 2018, and documented his observations in a detailed report. He further explained his opinions in his testimony before this Court.

Without reiterating everything already noted in this opinion, Cordoma's observations and conclusions are consistent with the scientific methodology endorsed by *NFPA 921*. Section 4.4.3.2 of *NFPA 921* permits fire investigators to rely on multiple sources of data—including scene inspections, prior scene documentation, interviews, and investigations by others. Similarly, OSAC recognizes that “non-scene data,” such as witness statements, may be used to “document the growth and spread of the fire” and to “identify suppression efforts which may have affected fire growth and spread.” D-5 at 79. This is exactly how Detective Cordoma connected the dots to render his conclusions.

Accordingly, Det. Cordoma's conclusions were grounded in both personal observation and professional methodology. His use of non-scene data, including video footage and witness interviews, does not undermine the validity of his expert opinion. Rather, it aligns with accepted fire investigation practices, as reflected in *NFPA 921* and OSAC guidance.

3. Detective Cordoma has sufficient expertise to offer the intended testimony

The final N.J.R.E. 702 requirement the Court must consider is whether the witness possesses the expertise necessary to offer an expert opinion.

Detective Cordoma testified extensively about his qualifications. He has over 24 years of law enforcement experience, having worked for the Hudson, Burlington, and currently the Monmouth County Prosecutor's Offices. He serves as an instructor

at the Monmouth County Police Academy, where he teaches courses on crime scene analysis and origin and cause determinations in arson cases.

While at the Burlington County Prosecutor's Office, Det. Cordoma was selected to join the ATF's Arson Task Force from 2013 to 2017 due to his extensive experience in crime scene analysis. He has participated in approximately 100 arson investigations involving origin and cause determinations. Throughout his career, he has worked collaboratively with the ATF, state and county fire marshals, and local fire investigation units.

Det. Cordoma has received substantial education and training in arson investigations. His coursework includes:

- Basic Course for Arson Investigators (2002)
- Juvenile Fire-Setting & Bomb-Making (2004)
- Fire and Explosion Investigations: Utilizing NFPA 1033 and 921, Ethics and the Fire Investigation, and several other courses in 2010
- Fire and Arson Fatality Fire Scene Investigation (2014)
- Application of NFPA 1033 and 921, Ventilation Flow Paths, Fire Growth, and Evidence Recovery (2015)

He has also instructed on criminal and arson investigations at the New Jersey Division of Criminal Justice Training Academy. Academically, he holds a Bachelor of Arts and a Master of Arts in Criminal Justice, and a Doctorate in Health Sciences.

Since 2016, he has served as an adjunct professor at three New Jersey universities and a community college, teaching crime scene and arson investigation.

Defendant argues that Det. Cordoma's qualifications are deficient due to a lack of recent training under NFPA 921 and 1033. Specifically, the defense notes he has not documented the 40 hours of continuing education every five years required by NFPA 1033. As a result, Defendant contends that Det. Cordoma is not qualified to offer expert testimony in this case.

However, courts in New Jersey take a liberal approach when evaluating an individual's qualifications to testify as an expert. In State v. Jenewicz, 193 N.J. 440 (2008), the Supreme Court stated that a court need only be satisfied that the expert has sufficient knowledge, skill, training, education, or experience to aid the jury on a subject beyond the average person's understanding. See also N.J.R.E. 702.

An expert may be qualified by study without practice or practice without study. Cotto, 471 N.J. Super. at 532. In Cotto, the court upheld an expert's qualifications based on online training and on-the-job experience. Academic credentials are not required to qualify as an expert in arson investigations. Prior qualifications as an expert are relevant but not mandatory. Id.

Moreover, an expert may be qualified even if their experience is limited. In State v. Torres, 183 N.J. 554, 572–73 (2005), the Court found a witness qualified as a gang expert based on field experience despite only seven hours of formal training.

Similarly, in State v. Moore, 122 N.J. 420, 460 (1991), the Court found an expert in blood-spatter analysis qualified after only two days of instruction. As the Moore Court held, the lack of specific training can be explored on cross-examination and argued in summation, but it does not bar admissibility.

Here, Det. Cordoma has demonstrated both extensive experience and adequate training. He has held degrees in criminal justice and health sciences, has been involved in arson investigations since 2004, and has received specialized training beginning in 2002 through 2015. He has investigated approximately 100 fire or explosion incidents. See D-2 at 1–2; (1T:30-5 to 30-7).

During the evidentiary hearing, Det. Cordoma testified thoroughly, clearly, and effectively. He recalled and explained events from a nearly seven-year-old investigation with clarity and detail. He discussed concepts such as “alligator charring” in terms understandable to a layperson (1T:169-3 to 169-15). When unable to recall something, he acknowledged it and offered what information he could.

Although Det. Cordoma has not previously been accepted as an expert in origin and cause determinations, “for all things there must be a first time.” *Cotto*, 471 N.J. Super. at 532. Following Defendant’s reasoning, that a witness cannot qualify unless previously accepted, would prevent the pool of expert witnesses from ever expanding. *Id.*

The Court finds that Det. Cordoma possesses sufficient knowledge, skill, experience, training, and education to qualify as an expert in arson investigations. Contrary to Defendant's claim, no rule requires Det. Cordoma to hold NFPA 1033 certification to testify as an expert. Given the breadth of his law enforcement experience and fire investigation background, the Court finds he satisfies the third factor and is qualified to offer expert opinion testimony.

The Confrontation Clause

Separately, the Defendant argues that Detective Cordoma's report constitutes testimonial hearsay and is thus barred by the Sixth Amendment. Both federal and New Jersey courts have long recognized that hearsay relied upon by an expert is admissible when used to explain the basis for the expert's opinion—not to prove the truth of the matter asserted. State v. Torres, 183 N.J. 554, 576 (2005). In other words, an expert may rely on out-of-court statements typically used by professionals in the field to support their opinion. Id.

The Sixth Amendment's Confrontation Clause guarantees a criminal defendant the right to confront witnesses against him. Smith v. Arizona, 602 U.S. 779, 779 (2024). This right limits the prosecution's use of out-of-court statements only when those statements are *testimonial* in nature. Id. The United States Supreme Court has held that the Confrontation Clause applies only when the prosecution introduces an out-of-court statement *for its truth*. Id. at 783. "When an expert

conveys an absent analyst's statements in support of his opinion, and the statements provide that support only if true, then the statements come into evidence for their truth," and the Confrontation Clause applies. Id. In such situations, the Court has barred the use of expert testimony that merely repeats another analyst's conclusions, finding that the expert acts as a "mouthpiece." Id. at 801.

Because Confrontation Clause challenges are fact-sensitive, courts must evaluate the specific circumstances of each case. Watson, 254 N.J. at 610. The Clause codifies a common law right against "the use of any 'testimonial' statement made out of court by a person who is available to testify and was not previously subject to cross-examination by the defendant." Franklin v. New York, 145 S. Ct. 831, 832 (2025).

Here, the Defendant asserts that Detective Cordoma based his conclusions on the work and opinions of at least 11 individuals who will not testify at trial. Therefore, the Defendant argues, admitting Cordoma's opinion would violate his rights under the Confrontation Clause. Both the State and Defendant requested a N.J.R.E. 104 hearing to clarify the basis and reliability of Cordoma's opinion. The Court conducted that evidentiary hearing from June 30 to July 2, 2025, during which both parties examined Detective Cordoma about the foundation of his conclusions regarding the fire at 15 Willow Brook Road.

The Defendant relies on Smith v. Arizona, where the United States Supreme Court held that the defendant had the right to confront the analyst who performed the original forensic work, not someone who merely reported its contents. Smith, 602 U.S. at 800. However, Smith is inapposite. Unlike the expert in Smith, Detective Cordoma did not simply recite or adopt the findings of others. He conducted his own investigation, drafted his own report, and based his conclusions on personal observations and independently collected data.

The Defendant cites a portion of Cordoma's report that reads: "Please refer to the reports authored by the MCPO Major Crimes Bureau and Colts Neck Police Department for information with regard to interviews conducted throughout the investigation." D-1 at 5. The Defendant argues this constitutes improper reliance on testimonial hearsay. But this language merely cites the source of investigative background; it does not reflect reliance on the opinions or analyses of others in forming Cordoma's expert opinion. As established in State v. Torres, 183 N.J. at 576, expert witnesses may reference out-of-court material to explain the basis of their opinions when it is not being offered for its truth.

Having reviewed the report and testimony from the evidentiary hearing, the Court finds that Detective Cordoma based his conclusions on his own investigation—on facts he observed, data he collected, and conclusions he personally reached. He is not testifying on behalf of others, nor is he relaying

conclusions solely drawn by third parties. This case is clearly distinguishable from Smith v. Arizona. Accordingly, the Court concludes that the admission of Detective Cordoma's expert opinion does not violate the Confrontation Clause.

CONCLUSION

After reviewing the parties' submissions, conducting a multi-day evidentiary hearing, and carefully considering the testimony, evidence, and oral arguments, the Court finds that Detective Cordoma satisfies the requirements for admissibility as an expert in arson investigations. Arson investigation involves specialized knowledge beyond the understanding of the average juror, and expert testimony in this field is appropriate to assist the trier of fact in evaluating the evidence and determining facts in issue.

Detective Cordoma meets the qualifications required under N.J.R.E. 702. He has an extensive background in law enforcement, years of experience investigating fires, and relevant academic credentials. Although he has not completed formal arson investigation training since 2015, New Jersey courts have recognized that substantial professional experience alone can suffice to qualify an individual as an expert in this field.

The Court further finds that Detective Cordoma's methodology—outlined in his report and explained during his testimony—adheres to the scientific method set

forth in *NFPA 921*, a standard accepted by both the State's and Defendant's experts. His investigation included analysis of scene and non-scene data, the development and testing of a hypothesis, and a clear articulation of the reasoning behind his conclusions. The record demonstrates that Detective Cordoma's opinions regarding the rate of fire spread and his conclusion that the fire was incendiary are based on scientific analysis rather than speculation. He ruled out other potential causes through evaluation of the available evidence.

Additionally, the Court finds that Detective Cordoma's testimony does not violate the Confrontation Clause. This case is distinguishable from Smith v. Arizona, 602 U.S. 779 (2024). Detective Cordoma is not serving as a "mouthpiece" for any non-testifying analyst. He conducted his own investigation, formed his own conclusions, and authored his own report. While he references the work of others within the investigative team, he does so not to establish the truth of those statements, but to explain the foundation of his own expert opinion. As recognized in State v. Torres, 183 N.J. 554, 576 (2005), such use is permissible when the material is not offered for its truth but to inform the basis of the expert's conclusions.

Accordingly, the Court concludes that Detective Cordoma's proposed expert testimony in arson investigation is admissible. His specialized knowledge, methodology, and analysis will assist the jury in understanding the technical aspects of the evidence. The Defendant's motion to preclude his testimony is DENIED.