

IN THE CUMBERLAND COUNTY COURT OF COMMON PLEAS
CRIMINAL TRIAL DIVISION

COMMONWEALTH OF PENNSYLVANIA, :
Respondent :
 :
 :
 :
 v. : CP-21-CR-0000088-1972
 :
 :
 LETITIA SMALLWOOD, :
Petitioner :

SUPPLEMENTAL AFFIDAVIT OF JASON A. SUTULA

STATE OF MARYLAND)
)
COUNTY OF PRINCE GEORGES)

Before me, the undersigned authority, this day personally appeared Jason A. Sutula, who after being legally duly sworn, deposes and says as follows:

1. My name is Jason A. Sutula. I continue to be retained as a consulting expert in the above-referenced case on behalf of Letitia Smallwood. I am over the age of twenty-one and of sound mind and body. I make this affidavit of my own personal knowledge and expert opinion.
2. Since my February 18, 2014 affidavit, I have received an additional credential and updated my Curriculum Vitae, which is attached to this affidavit. As of February 28, 2014, I am a Certified Fire Investigator (IAAI-CFI). This certification I hold from the International Association of Arson Investigators (IAAI) and is unique and separate from the two certificates, Certified Fire and Explosion Investigator (CFEI) and Certified Fire Investigation Instructor (CFII), that I hold from the National Association of Fire Investigators (NAFI).
3. The purpose of this supplemental affidavit is to provide additional information on the timeline of my involvement in this case, to present a brief summary of the continually changing

nature of NFPA 921, *Guide for Fire and Explosion Investigations*, as a new understanding of fire science is incorporated through the consensus code process, and to discuss new material that I have reviewed in this case in light of the Commonwealth's Motion to Dismiss Defendant's Untimely and Previously Litigated PCRA Petition, dated April 24, 2014.

4. All of the opinions and conclusions presented in my February 18, 2014 affidavit remain valid and are incorporated herein.

Timeline of Involvement in this Case

5. I was first contacted regarding this case by Michael McKenzie of Cozen O'Connor on Friday, November 1, 2013.

6. Mr. McKenzie put me in contact with Nilam Sanghvi of the Pennsylvania Innocence Project, who I was able to contact via email on Thursday, November 7, 2013.

7. A preliminary phone call was scheduled and took place on Tuesday, November 12, 2013, with Joshua Synder of Boni & Zack, LLC and Nilam Sanghvi.

8. A letter of retention by Exponent, Inc. was created to formalize my retention in this matter on Wednesday, December 4, 2013.

9. The retention letter was signed and returned by Joshua Synder on Friday, December 20, 2013.

10. My analysis of this case took place between December 20, 2013 and the date of my original affidavit, February 18, 2014.

NFPA 921, *Guide for Fire and Explosion Investigations*

11. As mentioned briefly in my February 18, 2014 affidavit, NFPA 921, *Guide for Fire and Explosion Investigations* is a living document subject to continual revision and change from

representatives of the fire investigation and fire science communities through a consensus code revision process. Approximately every three years, the document undergoes revisions and additions that are designed to reflect the current state of the art in the field. Since NFPA 921 was first published in 1992, it has almost tripled in length and scope and covers almost every scenario of fire investigation that an investigator in the field could come across.

12. The first version of NFPA 921 was developed by the original Committee on Fire Investigations.¹ The goal was to assist in improving the fire investigation process and in the quality of information retained from the fire scene. The 1992 version focused on the determination of the origin and cause of fires and explosions involving structures using accepted scientific principles.² It also initiated the discussion of the concept of fire investigation as an art or science. Section 2-1 on the nature of fire investigations stated, “A fire or explosion investigation is a complex endeavor involving both art and science.”³

13. The 1995 version of NFPA 921 became effective on February 7, 1995. The second edition of the guide revised chapters on the collection of physical evidence, scene safety, and explosions.⁴ Additionally, NFPA 907M, *Manual for the Determination of Electrical Fire Causes*, was withdrawn as an individual document and integrated into NFPA 921.⁵ Finally, new chapters were added on the topics of motor vehicle fires, management of major investigations, incendiary fires, and appliances.⁶

14. The 1998 version of NFPA 921 became effective on February 6, 1998. In the third edition, a new chapter on fuel gas systems in buildings was added. The chapters on electricity

¹ NFPA 921, *Guide for Fire and Explosion Investigations*, 1992 Edition.

² *Ibid.*

³ *Ibid.*

⁴ NFPA 921, *Guide for Fire and Explosion Investigations*, 1995 Edition.

⁵ *Ibid.*

⁶ *Ibid.*

and fire and fire patterns were revised. Other revisions were made on the subject of scene preservation and physical evidence. Finally, new text was added regarding ignitable liquid detection canine teams.⁷

15. The 2001 version of NFPA 921 became effective on February 9, 2001. The fourth edition was modified to include new chapters on building systems, fire-related human behavior, failure analysis, fire and explosion deaths and injuries, and wildfire investigations. Additionally, the chapter on motor vehicle fires was significantly revised.⁸

16. Also in the 2001 edition, the section on basic methodology was modified to reflect the changing consensus of the technical committee on the idea of fire investigation being an art or science. Section 2.1 was rewritten from the original 1992 text of “A fire or explosion investigation is a complex endeavor involving both art and science” to state, “A fire or explosion investigation is a complex endeavor involving skill, technology, knowledge, and science.” This modification within the text of the document removed the last remaining reference to fire investigation as an “art.”

17. The 2004 version of NFPA 921 became effective on February 5, 2004. The fifth edition included a complete revision of the entire document to ensure that the guide complied with NFPA’s *Manual of Style*. A new chapter titled, *Analyzing the Incident for Cause and Responsibility*, was added. Additionally, the chapters on *Basic Fire Science*, *Legal Considerations*, and *Recording the Scene* were substantially revised.⁹

18. One section in particular that stands out was added to the *Basic Fire Science* chapter of the 2004 edition. Section 5.4.1.2 states:

⁷ NFPA 921, *Guide for Fire and Explosion Investigations*, 1998 Edition.

⁸ NFPA 921, *Guide for Fire and Explosion Investigations*, 2001 Edition.

⁹ NFPA 921, *Guide for Fire and Explosion Investigations*, 2004 Edition.

*The rate of fire growth as determined by witness statements is highly subjective. Many times witnesses are reporting the fire growth from the time of discovery, which cannot be directly correlated to ignition time. The rate of fire growth is dependent on many factors besides fuel load, to include fuel configuration, compartment size, compartment properties, ventilation, ignition source, and first fuel ignited. The rate of fire growth as reported by witnesses is not reliable or supported independent evidence of an incendiary fire.*¹⁰

This particular excerpt from the guide cautions an investigator against relying on witness testimony related to fire growth and development. In the absence of physical evidence, laboratory analysis, or scene documentation in support of an incendiary fire, it is inappropriate to use or rely on witness testimony of fire growth as evidence of an incendiary fire.

19. Due to substantial revisions, the sixth edition of NFPA 921 was published as the 2008 version. The effective date of the guide was December 31, 2007. Revisions to Chapter 5, *Basic Fire Science*, Chapter 6, *Fire Patterns*, Chapter 17, *Origin Determination*, Chapter 25, *Motor Vehicle Fires*, and Chapter 27, *Management of Complex Investigations*, were completed.¹¹ A new chapter titled, *Marine Fire Investigations*, was also added to the document.¹²

20. The 2011 edition of NFPA 921 became effective on January 3, 2011. The seventh edition included significant revisions to the chapters on basic methodology, safety, fire deaths and injuries, motor vehicles, and explosions. The chapter on fire cause determination was completely revised to reflect the use of the scientific method, in-line with the chapter on origin determination. In particular, a section was added to caution investigators against basing a

¹⁰ Ibid.

¹¹ NFPA 921, *Guide for Fire and Explosion Investigations*, 2008 Edition.

¹² Ibid.

hypothesis on the absence of supporting evidence. This issue is typically referred to in the field as the improper use of “negative corpus.”¹³

21. The most recent version of NFPA 921 is the 2014 version, effective December 2, 2013. In the eighth edition of the guide, a new chapter titled, *Fire Protection Systems*, was added. The chapter titled, *Analyzing the Incident for Cause and Responsibility*, was also significantly updated.¹⁴ Additionally, due to feedback from users of the guide, Section 19.6.5 on the appropriate use of the process of elimination in fire investigation methodology was reworded to eliminate confusion over the issue of “negative corpus.” The text was revised to state that the process of elimination is a valid aspect of the scientific method, but that the process of eliminating all known accidental hypotheses cannot be used in the absence of supporting evidence as classifying a fire as incendiary. Section 19.6.5.1 on undetermined causes was also revised to stress that if all working hypotheses have been eliminated, a fire must remain classified as undetermined.¹⁵

22. The significance of the number of revisions and changes to NFPA 921 throughout eight editions over 22 years cannot be stressed enough. The eighth version of the document is drastically different and provides a much more scientifically acceptable framework for completing all aspects of a fire investigation. The current 2014 edition of the guide is the standard of care in the fire investigation community and supersedes all previous editions with regard to proper fire investigation.

¹³ NFPA 921, *Guide for Fire and Explosion Investigations*, 2011 Edition.

¹⁴ NFPA 921, *Guide for Fire and Explosion Investigations*, 2014 Edition.

¹⁵ Ibid.

Discussion of New Materials Reviewed

23. Subsequent to completing my affidavit of February 18, 2014, I have reviewed the following: Commonwealth's Motion to Dismiss Defendant's Untimely and Previously Litigated PCRA Petition dated April 24, 2014, a blog post on the Truth in Justice website regarding the case of Letitia Smallwood by Dr. Gerald Hurst, additional floor plans of the 1st and 3rd floors that are not hand drawn, and a November 16, 2001 letter from Frank R. Loney regarding witness recollections of the interior of the fire scene building. Nothing in the new information reviewed either modifies or changes the opinions and conclusions reported in my February 18, 2014 affidavit.

24. The origins of both the floor plans and letter from Frank R. Loney appear to be augmented by recollections of witness who had previously visited the site where the fire occurred. Based on the tenants of NFPA 921, documentation produced by witness recollection must be carefully assessed in the context of the physical evidence gathered from the scene. With no physical evidence gathered from the scene of the fire, the validity of these documents cannot be supported.

25. In the Commonwealth's Motion to Dismiss Defendant's Untimely and Previously Litigated PCRA Petition, dated April 24, 2014, the Commonwealth asserts that Ms. Smallwood had two opportunities to file an earlier petition in her defense related to new information regarding fire investigation: the first in 1992 and the second in 1999.

Commonwealth's Assertion Regarding 1992

26. The Commonwealth stated that since NFPA 921 was published in 1992, the tools to perform a proper fire investigation were available at that point and Ms. Smallwood should have

presented it as “new evidence” at that time. This assessment does not take into account aspects of the consensus code process and the unique developmental timeline of the NFPA 921 document.

27. First, as documented above in this affidavit, NFPA 921 has continually been improved since its inception. Years of effort in the fire investigation community resulted in an informative document that specifically describes the appropriate methodology for conducting a fire investigation. As demonstrated, the 2014 edition of NFPA 921 is vastly enhanced from the first edition and supersedes all previous editions as the current standard of care. The 2014 edition contains the most recent revisions on fire investigation methodology, the improper use of “negative corpus” and the process of elimination, and the appropriate guidelines for when to classify a fire as undetermined. None of these topics were immediately recognized or common practice in fire investigation in 1992.

28. Second, a large portion of the fire investigation community was slow to adopt NFPA 921 as the standard of care in fire investigation. The International Association of Arson Investigators (IAAI) is one of two member organizations for fire investigation that offer training and a process to become a Certified Fire Investigator (CFI). Although IAAI was formed in 1951, the fire investigation organization did not formally accept NFPA 921 as the authoritative guide in fire investigation until January 12, 2013.¹⁶

29. Based on the continual revisions and improvements to NFPA 921 and the 21 year timeframe required for one of the main certifying organizations within the fire investigation community to recognize NFPA 921 as the authoritative guide in fire investigation, Ms. Smallwood would have not known about, understood, or been able to take advantage of the full

¹⁶ <http://firearson.com/nfpa-921/1033>

provisions of NFPA 921 in 1992, and, therefore, would not have been able to present this information as “new evidence” at that time.

Commonwealth’s Assertion Regarding 1999

30. The Commonwealth also stated that an opportunity existed in 1999, when Ms. Smallwood wrote to Dr. Gerald Hurst, who subsequently posted a blog post regarding her case on the Truth in Justice website.¹⁷ The Commonwealth claimed that Dr. Hurst produced a “report” and that Ms. Smallwood should have used this “new” information at that time in her defense. This assertion does not take into account several significant aspects of the case assessment Dr. Hurst performed.

31. First, it seems apparent that Dr. Hurst was never formally retained on behalf of Ms. Smallwood. From his blog posting, it appears that he examined the case on his own volition and analyzed whatever available information he was able to obtain. Dr. Hurst did not provide in his blog post what documentation he had access to when conducting his assessment of the case and did not specify whether or not he had sufficient information to even formulate an opinion.

32. Second, based on his blog posting, Dr. Hurst did not conduct a fire origin and cause investigation and did not produce a report containing opinions and conclusions for Ms. Smallwood. Dr. Hurst only produced a short blog post for the Truth in Justice website.¹⁸ While Dr. Hurst’s blog post reports a basic story line of Ms. Smallwood’s case, presents some factual information on fire dynamics, and raises many questions, it does not state that an origin and cause investigation was performed, and it does not provide substantiated opinions or conclusions

¹⁷ <http://truthinjustice.org/smallwood.1.htm>

¹⁸ <http://truthinjustice.org/smallwood.htm>

following the scientific method. Additionally, Dr. Hurst's blog post does not recognize or mention the use of NFPA 921 and its sanctioned methodology in his assessment.

33. Third, in 1999, the most up-to-date version of NFPA 921 would have been the 1998 version. The 1998 version did not contain many of the most recent and updated revisions to the document, such as revisions on fire investigation methodology, the improper use of "negative corpus" and the process of elimination, and the appropriate guidelines for when to classify a fire as undetermined. None of these topics were immediately recognized or common practice in fire investigation in 1999. Without these updates and revisions to the NFPA 921 document, any fire investigation conducted in 1999 would have not have been able to take advantage of the most recent investigative techniques and methodologies.

34. Based on the fact that Dr. Hurst was apparently never retained by Ms. Smallwood, that he did not conduct an origin and cause investigation or write a report in 1999, that he failed to recognize or mention the use of NFPA 921 in his blog post, and that any fire investigation conducted in 1999 would have not have been able to take advantage of the most recent investigative techniques and methodologies sanctioned within NFPA 921, the information provided by Dr. Hurst would not have been acceptable for Ms. Smallwood to present as "new evidence" at that time.

Summary of Additional Opinions

35. I have reviewed the Commonwealth's Motion to Dismiss Defendant's Untimely and Previously Litigated PCRA Petition dated April 24, 2014, a blog post on the Truth in Justice website regarding the case of Letitia Smallwood by Dr. Gerald Hurst, additional floor plans of the 1st and 3rd floors that are not hand drawn, and a November 16, 2001 letter from Frank R. Loney regarding witness recollections of the interior of the fire scene building. Nothing in the

new information reviewed either modifies or changes the opinions and conclusions reported in my February 18, 2014 affidavit.

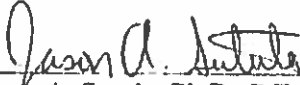
36. Based on the continual revisions and improvements to NFPA 921 and the 21 year timeframe required for one of the main certifying organizations within the fire investigation community to recognize NFPA 921 as the authoritative guide in fire investigation, Ms. Smallwood would have not known about, understood, or been able to take advantage of the full provisions of NFPA 921 in 1992, and, therefore, would not have been able to present this information as “new evidence” at that time.


37. Based on the fact that Dr. Hurst was apparently never retained by Ms. Smallwood, that he did not conduct an origin and cause investigation or write a report in 1999, that he failed to recognize or mention the use of NFPA 921 in his blog post, and that any fire investigation conducted in 1999 would have not have been able to take advantage of the most recent investigative techniques and methodologies sanctioned within NFPA 921, the information provided by Dr. Hurst would not have been acceptable for Ms. Smallwood to present as “new evidence” at that time.

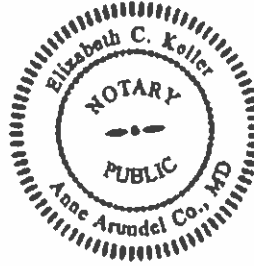
Limitations

38. The findings presented in this affidavit are made to a reasonable degree of engineering and scientific certainty. I have made every effort to perform an accurate and thorough investigation. If new data becomes available or there are perceived omissions or misstatements in this affidavit regarding any aspect of those conditions, I ask that they be brought to my attention as soon as possible so that I have the opportunity to fully address them.

FURTHER AFFIANT SAYETH NOT.


Jason A. Sutula, Ph.D., P.E., CFEI, CFII, CFI


SWORN TO AND SUBSCRIBED before me
this 7th day of July, 2014



My Commission Expires 5/26/2018