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March 31, 2022

Office of State Attorney
Attn: Bill Respess, Michael Hunt & Ben Fox
2725 Judge Fran Jamieson Way
Melbourne, FL 32940
BY EMAIL ONLY

Re: State v. Suzanna Norris, 2021-CT-055302-A - Expert's report establishes causation.

Mr. Respess, Mr. Hunt & Mr. Fox,

Please find enclosed a report by accident reconstruction expert Dr. Kelly Palframan. It addresses several of the errors and miscalculations by the experts you received a report from, Sirnivas Kadiyala and Elliot Stern. As you know, I've sent your office two letters asking that Mr. Kadiyala and Mr. Stern correct the errors and oversights in their report. I have yet to receive a response.

Dr. Palframan's report addresses these errors in detail and finds that the impaired driving of Suzanna Norris contributed to the death of Passion Lucas. Simply, Suzanna Norris had more than enough time to avoid the impact that killed Passion Lucas. In sum, Dr. Palframan finds and concludes,

- "… it is conclusive to a reasonable degree of engineering certainty that the collision between Ms. Norris and Ms. Lucas was entirely avoidable by Ms. Norris had she properly attended to the visual information presented to her and properly implemented either braking or steering." *Palframan Report*, p. 12.

- "… Ms. Norris exhibited not only a delay in detection and response to the presence of a pedestrian that was walking directly in her path and illuminated by her headlights, but a complete absence of detection and response prior to the audible and tactile experience of the collision itself. Ms. Norris failed in both the detection phase and in the response phase, failing to apply the appropriate braking and/ or steering maneuvers to avoid a crash." *Palframan Report*, p. 12.

- Ms. Norris "failed to identify a readily visible pedestrian hazard ahead. Ms. Norris's failure to avoid or even initiate a response to the presence of the brightly clad Ms. Lucas was consistent with a significantly delayed response and/ or delayed detection of a hazard, and the magnitude of the delay in detection and response was well outside the normal range of attentive and unimpaired drivers." *Palframan Report*, p. 5-6.

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After correcting the errors in your experts' report, Dr. Palframan concludes that Suzanna Norris should have had time to stop and/ or swerve to avoid Passion Lucas. The fact that Suzanna Norris did neither to avoid a pedestrian who was positioned directly in front of her vehicle and wearing white pants and a red shirt confirms that Ms. Norris was impaired (which we already know, since she had a BAC of 0.19) and that her impairment *caused or contributed to* the death of Passion Lucas. Had Ms. Norris *not* been impaired by alcohol, she could have avoided the accident entirely and/ or taken measures to lessen the impact, thereby reducing the likelihood of death. The fact that Ms. Norris neither stopped nor swerved demonstrates that she was impaired, and her impairment prevented her from reacting to something she should have seen, thereby *causing or contributing to* Passion Lucas' death.

As I have mentioned in my letters and in discussion, the State Attorney's Office has previously filed DUI Manslaughter charges against other individuals where the causation was contested. Often, contested issues—even those that are vigorously contested—have affected plea negotiations, but the fact that a defendant disputes the charges has not stopped your office from filing charges. The fact that her attorney, Alan Landman, may contest causation should not preclude Suzanna Norris from being charged with a higher offense. Dr. Palframan's report provides a strong factual basis for DUI manslaughter charges. She points out that the report by Alan Landman's expert Chip O'Toole is "vague and unsubstantiated" and inconsistent with the specific details of this case. *Palframan Report*, p. 13.

Please know that if your office continues to rely on inaccurate and unsubstantiated reports, the Lucas family will want, and deserve, an explanation.[1] They will want to know why your office has not called on Mr. Kadiyala and Mr. Stern to correct their report in light of their obvious errors. They will want to know why your office did not catch the obvious errors in the report before deciding to only charge Ms. Norris with misdemeanor DUI. They will want to know why your office is giving weight to the unsubstantiated, preliminary report by Alan Landman's expert.

[1] In addition to these questions, the Lucas family continues to ask why your office has not obtained Ms. Norris' phone records.

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Most importantly, the Lucas family will want to know why your office would ignore Dr. Palframan's report when it establishes causation between Norris driving with a BAC of 0.19 and the death of Passion Lucas.

Again, I ask that that your office reconsider the charging decision against Suzanna Norris and charge her with DUI manslaughter.

Sincerely,

Attorney for family of Passion Lucas

Enclosure: Report by Dr. Kelly Palframan

c: Sylvia and Makita Lucas, confidential address

c: Alan Landman, attorney for Suzanna Norris

FOCUS
FORENSICS

TRANSPORTATION ENGINEERING SUMMARY OF PRELIMINARY OPINIONS

Regarding:

Lucas v. Norris
Our File Number: 40-12473

Prepared for:

Jessica Travis, Esq.
DefendBrevard.com
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Prepared by:

Focus Forensics LLC
2656 Greenway Drive,
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March 30, 2022

Kelly M. Palframan, P.E., Ph.D.
State of Florida Professional Engineer No. 8334

KELLY M. PALFRAMAN
LICENSE
No. 83340
STATE OF
FLORIDA
PROFESSIONAL ENGINEER

INTRODUCTION

On June 20, 2021, a pedestrian-vehicle collision occurred on northbound East Industry Road in the City of Cocoa, Brevard County, Florida. Ms. Passion Lucas was present within the rightmost travel lane when she was struck by Ms. Susanna Norris who was driving a 2009 Chevrolet Impala.

On March 9, 2022, Kelly M. Palframan, P.E., Ph.D., was retained by DefendBrevard.com, to complete an engineering analysis and crash reconstruction of the collision. This preliminary privileged list of opinions was prepared for the exclusive use of DefendBrevard.com and is not intended for any other purpose. While addressing the general areas of testimony, this preliminary privileged report is not intended to replace a comprehensive engineering report or expert discovery deposition, and is not intended to include a full description of every detail of the engineering methodologies utilized in reaching conclusions. All opinions are expressed within a reasonable degree of engineering certainty based on information available to us at this time. Should additional information become available, we reserve the right to determine the impact, if any, of the new information on our opinions and conclusions, and to revise our opinions and conclusions if necessary and warranted.

OPINIONS AND CONCLUSIONS

1. The subject collision occurred on June 20, 2021, at approximately 2:20 a.m. on northbound East Industry Road, just north of the Martin Andersen Beachline Expressway / 528 overpass, in Cocoa, Brevard County, Florida.
    a. Conditions at the time of the incident were dark, clear and dry, with no inclement weather factors affecting visibility. Astronomical records confirmed the collision occurred after astronomical twilight.
2. The collision involved a white 2009 Chevrolet Impala, driven by Ms. Susanna Norris, which was traveling northbound within the rightmost northbound travel lane of East Industry Road with her headlights on. The right front of the Impala collided with a pedestrian, Ms. Passion Lucas, who was walking or otherwise occupying space within the rightmost northbound travel lane at the time of the crash. Ms. Lucas was wearing white pants and a red shirt.
3. In the area of the crash, East Industry Road is a primarily straight and level four lane divided roadway that runs north/south with a curbed median that has intermittent breaks for pocket left turn lanes. The roadway was under construction at the time of the crash. Orange construction drums, standard advance warning signs, and a flashing arrow board were present along the northbound roadside leading up to the area of the collision. There was a right travel lane closure merge further north, but both travel northbound travel lanes remained open at the area of impact. There were no overhead street lights present along the subject stretch of East Industry Road from State Road 524/501 to Grissom Parkway. The speed limit on East Industry Road was 45 mph.
4. Physical evidence collected by the Cocoa Police Department at the scene on the night of the crash and through the autopsy report indicated that the Impala's front right front bumper, hood, headlight, windshield, and A-pillar made contact with the left side of Ms. Lucas's body.
    a. The windshield was cracked and fully penetrated as a result of the impact. There were body fluid stains and short black hair transfers approximately mid-way up the right-side A-pillar.
    b. Given the contact damage on the Impala, Ms. Lucas experienced a full-wrap trajectory in which her body fully engaged with the Impala, attaining a common velocity as the Impala.

c. Ms. Lucas came to final rest in the right-hand travel lane approximately 8.25 ft west of the white fog line.

d. Ms. Lucas's right shoe was found approximately 78 ft upstream from Ms. Lucas's final rest position, suggesting Ms. Lucas was thrown a total of approximately 78 feet from impact to rest, including airborne and tumbling motions.

e. There was no physical evidence to indicate any pre-impact braking or steering avoidance maneuvers by Ms. Norris.

f. Two independent and well-accepted engineering methodologies were used to calculate the impact speed of the Impala, both resulting in speeds between 31 to 39 mph.

   i. Based on the contact elevation locations on the Impala and empirical test data from real-world pedestrian impacts, the Impala was traveling between 31-34 mph.[1]

   ii. Based on the distance that the pedestrian was thrown from impact to rest, and based on empirical test data from real-world pedestrian impacts, the Impala was traveling between 35 to 39 mph.[2]

g. There was no evidence to suggest that the Impala was traveling above the 45-mph posted speed limit.

h. As reported in the Homicide Report, Ms. Norris continued driving after the impact and later returned to the scene and brought her vehicle to a controlled stop, facing north, approximately 28 ft north of Ms. Lucas's final rest position.

5. Based on Ms. Lucas's engagement with the vehicle at impact and her final rest position, Ms. Lucas was present within the left half of the right-hand travel lane when impact occurred.
6. At impact, Ms. Norris's vehicle was straddling the two northbound travel lanes.
7. Ms. Lucas was wearing white pants and a red shirt, averaging out to be on the lighter end of the color/contrast spectrum for driver detection. Studies indicate that the typical range of drivers would require 1 to 3 Lux of illumination cast onto a pedestrian wearing all white, and approximately 20 Lux of illumination cast onto a pedestrian wearing black in order to

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[1] Happer, A., Araszewski, M., Toor, A., Overgaard, Johal, R. "Comprehensive Analysis Method for Vehicle/Pedestrian Collisions." 2000-01-0846, Society of Automotive Engineers, Inc. Warrendale, PA. 2000.
[2] Toor, A., Araszewski, M., "Theoretical vs. Empirical Solutions for Vehicle/Pedestrian Collisions," 2003-01-0883, Society of Automotive Engineers, Inc. Warrendale, PA. 2003.

sufficiently identify and detect a pedestrian on unlit roads.[3] Because headlights are designed to point down, away from oncoming traffic eye-height, the first object that the headlights would have illuminated was Ms. Lucas's white pants, followed by her red shirt. A conservative detection threshold illumination value range of 3 to 5 Lux was used as the threshold value for the typical range driver detection of Ms. Lucas based on the shade and contrast of her clothing in this particular environment. Given the age of the Chevrolet Impala's headlights and the relative position of Ms. Lucas within the headlight projection, the headlights would have provided 3 to 5 Lux of illumination onto Ms. Lucas beginning when the Chevrolet was 180 to 226 feet prior to impact, with increasing illumination as the vehicle drew closer. Therefore, the typical range unimpaired and attentive driver was capable of identifying the pedestrian presence as an imminent threat 180 to 226 feet away.

8. Once the detection threshold was met at 180 to 226 feet away, the typical range of drivers would take approximately 1.4 to 1.8 seconds to perceive and react to the pedestrian before implementing a physical avoidance response under these circumstances.[4] At 31 to 39 mph, that corresponded with a travel distance of 61 to 100 ft during the perception-response phase before any avoidance response was initiated, resulting in 80 to 165 feet of longitudinal space remaining with which to implement the maneuver needed to avoid a crash.
9. At 31 to 39 mph, it only takes 46 to 64 feet of distance to come to a complete stop on dry roads, or 34 to 53 feet of distance in order to swerve laterally by 2 to 3 feet to the left. Both response options in isolation, or a combination of braking and steering, would have successfully avoided the collision.
10. Therefore, the typical range of attentive and unimpaired drivers traveling on this dark, unlit road, even with older headlights, would have had more than sufficient available visual information, distance, and time, with which to adequately identify and successfully avoid contact with Ms. Lucas.
11. At impact, Ms. Norris was straddling the dashed lane line that separated the two northbound travel lanes. She failed to identify a readily visible pedestrian hazard ahead. Ms. Norris's failure to avoid or even initiate a response to the presence of the brightly clad Ms. Lucas was

[3] Muttart, J. W., Romoser, M., "Evaluating Driver Response and Ability to Avoid a Crash at Night," Proceedings of the 1st Joint ITAI-EVU Conference. Hinckley, Leicestershire, England. 2009.
[4] Seven independent studies were used as a baseline including: Barrett (1968), Broen (1996), Eubanks (2004), Fisher (2009), Phelps (2001), Filio (2017), and Toxopeus (2018).

consistent with a significantly delayed response and/or delayed detection of a hazard, and the magnitude of the delay in detection and response was well outside the normal range of attentive and unimpaired drivers.

REBUTTAL TO KADIYALA AND STERN REPORT

The report prepared for Assistant State Attorney, Michael Hunt, by Dr. Srinivas Kadiyala and Dr. Elliot Stern contains several inaccuracies with various degrees of implications. Small errors, such as an incomplete VIN listed under the vehicle inspection data and incorrect weight of pedestrian used in momentum calculations, show an inattention to detail, however, these inaccuracies have little substantive value on the overall opinions. The major errors in their report, which significantly affect the calculations surrounding this crash, are four-fold:

1) Failure to properly quantify the light provided by the Impala's headlight beam onto the pedestrian on approach to the collision;
2) Failure to properly account for the visible contrast provided by Ms. Lucas's light-colored clothing when evaluating the detection threshold for a typical range of drivers;
3) Failure to consistently account for Ms. Lucas's path of travel relative to the vehicle's headlight projection profile;
4) Failure to apply consistent values throughout their crash reconstruction calculations

These major errors, as discussed below, result in grossly incorrect opinions regarding the expected response for the typical range of drivers presented with the same or similar stimulus, and the avoidance capability expected for the typical range of drivers presented with the same or similar stimulus. Each individual error resulted in smaller or larger influence on the final opinion expressed by D. Kadilyala and Dr. Stern, but when compounded these four errors drastically altered the final outcome of the engineering process. The analysis provided in the following sections incrementally steps through the individual errors that were made, adjusts each error to the correct parameters, and provides increasingly more correct values to use in each of the following sections.

The tables presented in the following sections compare the values presented by Mr. Kadiyala and Mr. Stern to the appropriate values considering the full range of evidence surrounding this crash.

Failure to Properly Quantify Light Provided by the Impala's Headlight Beam

Calculations surrounding nighttime collisions between vehicles and pedestrians on unlit roads are heavily contingent on the visibility and detectability of the pedestrian in the seconds leading up to the collision. When there are not any physical obstructions to visibility, the ability for drivers to detect and recognize the presence of a pedestrian depends largely on the quantity of light projected onto the object from light sources. In dark environments without overhead lighting from the sun or roadway luminaires, vehicle headlights are the primary source to illuminate the roadway ahead including hazards that may be within, or may soon enter, the vehicle's path of travel. When determining the distance at which a hazard is recognizable at night, one must account for how much light was generated by the vehicle's headlight beam. There are various factors that play into the amount of illumination a headlight can provide such as type of light bulb (Halogen vs. Incandescent) and age of headlight. The report authored by Dr. Kadiyala and Dr. Stern utilized a module of the IDRR software ("Recognition Distance") that provides a generic recognition distance value for stationary objects in a generic environment. This module considers generic objects and generic positions of the objects, without accounting for specifics relevant to this case, such as the specific headlight beam pattern distribution, the specific shape and motion of a walking pedestrian, headlight type and the age of Ms. Norris's 2009 Chevrolet Impala. They failed to utilize the module of the IDRR software ("Headlight Analysis") that is specifically designed and intended to address headlight illumination beam patterns on an otherwise unlit roadway, which takes into account the lateral and longitudinal beam pattern distribution, the age and type of headlamp, and the specific target object of a walking pedestrian.

Training courses in the use of the IDRR system, taught by the authors of the software, recommend that the Headlight Analysis module should be used when analyzing the detection threshold for a driver of a vehicle when presented with a walking pedestrian in their environment.

Failure to Account for the Visibility of Light-colored Clothing and Movement

One of the most significant factors that affects the expected detection threshold for drivers to identify the presence of a pedestrian in a nighttime environment is the color of the clothing that the pedestrian was wearing. Qualitatively, more light must fall upon a pedestrian wearing dark clothing in order for a driver to detect their presence, while a typical range of drivers will detect a pedestrian with less light falling on them when the pedestrian is wearing lighter colored clothing. When quantified through peer-reviewed literature and widely adopted engineering calculation methods, a non-stationary pedestrian in light colored clothing provides more visual contrast and requires less illumination (1 to 3 lux of light falling on the object) to recognize compared to a pedestrian in very dark colored clothing (15 to 20 lux of light falling on the object).[5] Between the extremes of all-white clothing and all-black clothing, this quantification of light needed for driver detection of a moving pedestrian is a gradient, with increased lux needed as the average color of

[5] Muttart, J. W., Romoser, M., "Evaluating Driver Response and Ability to Avoid a Crash at Night," Proceedings of the 1st Joint ITAI-EVU Conference. Hinckley, Leicestershire, England. 2009.

the clothing gets darker. Dr. Kadiyala and Dr. Stern erroneously assigned Ms. Lucas's clothing as dark-colored, which would mean that 15 lux of illumination was needed upon the pedestrian in order for a driver to detect the pedestrian when, in fact, Ms. Lucas was wearing white pants and a red shirt (average of 3 to 5 lux for detection). Additionally, Dr. Kadiyala and Dr. Stern modeled the pedestrian as a stationary hazard rather than a moving hazard. Human vision is highly sensitive to motion in the environment, including human biomotion of walking toward, away, or across the path of the vehicle. Movement such as walking and running for a pedestrian with light-colored clothing provides additional context that improves driver detection and recognition of the hazard. In combination, the input errors by Dr. Kadiyala and Dr. Stern (15-lux threshold and stationary pedestrian) resulted in a grossly shorter recognition distance than what was actually available to Ms. Norris given the light-colored clothing on the walking pedestrian. Dr. Kadiyala and Dr. Stern assigned a required recognition illumination level that was *3 to 5 times* more light than the actual illumination level necessary for driver detection given the pedestrian's actual clothing color.

Parameter	Dark-colored Clothing (15 lux)	Light-colored clothing (3-5 lux)
Recognition Distance of Stationary Object (Wide range of headlight conditions)	155 ft	298 ft
Headlight Analysis of Moving Pedestrian (Halogen Headlights > 7 yrs. old)	114 ft	200 ft*

**This value accounts for the specific type and age of the 2009 Impala's headlights as well as adjusting for the amount of illumination needed to detect a pedestrian in light-colored clothing. It is the most appropriate value to use within this table.*

Now accounting for the headlight analysis and the light-colored clothing, the most appropriate detection distance to use in a crash reconstruction analysis was 200 ft prior to impact.

Failure to Consistently Account for the Pedestrian's Position

A pedestrian's lateral position relative to the vehicle headlight beam pattern and the driver's line of sight is an important factor for determining a typical range of drivers' expected perception-response time and hazard recognition distance. The physical evidence documented from this crash indicated that Ms. Lucas was walking northbound within the right-hand travel lane just prior to impact. When determining a typical range of driver's perception response time with respect to the facts of this crash, Dr. Kadiyala and Dr. Stern appropriately assigned a slight eccentricity value (3-

degrees right of center) representing the visual angle at which the pedestrian was able to be detected prior to the point of impact. However, when analyzing recognition distance, the experts inappropriately calculated the recognition distance as though the pedestrian was on the passenger's side of the road to the right of the vehicle. While the IDRR module related to nighttime recognition of stationary objects only allows users to assign hazard positions to the driver's "left", "right", and "straight ahead", the position of the subject pedestrian more accurately falls into the straight-ahead position rather than the right-hand position, as impact occurred directly in front of the right-side headlamp. The Headlight Analysis module for moving pedestrians actually incorporates the shape of headlight beam patterns required for vehicles in the United States, which varies from right to left relative to the vehicle. The illumination is qualitatively biased to the right with greater light falling to the center and right and less light falling to the left, but the actual shape of the beam can again be quantified specifically if utilizing the proper IDRR module.

Parameter	Dark-colored Clothing (15 lux)		Light-colored clothing (3-5 lux)	
	Right	Center	Right	Center
Recognition Distance of Stationary Object (Wide range of headlight conditions)	155 ft	119 ft	298 ft	262 ft
Headlight Analysis of Moving Pedestrian (Halogen Headlights > 7 yrs. old)	114 ft	113 ft	200 ft	199 ft*

**This value is the most appropriate value to use within this table.*

When accounting for the correct object type (moving pedestrian rather than stationary generic object), the correct pedestrian clothing threshold (3 to 5 lux for white pants and red shirt combination), and the correct pedestrian position (in motion and in the peak illumination portion of the headlight beam pattern), the driver had all the information needed to detect and recognize the presence and action of the pedestrian from approximately 199 feet, which is 30% greater detection distance than suggested by Dr. Kadiyala and Dr. Stern.

Failure to Accurately Account for Avoidance Capabilities

When evaluating avoidance capabilities, after determining the detection threshold, which is independent of vehicle speed, there are two additional dynamic steps to consider. After reaching the detection threshold, drivers still experience a time period (perception-reaction time) as they decide what to do while the vehicle continues to move down the road, and then the physical response occurs for braking, steering, or a combination of braking and steering. The perception-reaction distance and the braking/steering distances are all directly affected by vehicle speed. When evaluating the total distance needed for perception, reaction, and braking to a stop, Dr. Kadiyala and Dr. Stern made further errors when calculating the driver's avoidance capabilities. In their calculations, they used a vehicle speed of 45 mph to calculate the required vehicle dynamics to avoid the collision, when they had previously calculated an impact speed of only 36 to 41 mph. Our calculated impact speed range for the Chevrolet of 31 to 39 mph does not materially differ, as it overlaps the range reported by Dr. Kadiyala and Dr. Stern of 36 to 41 mph. Accounting for the actual calculated travel speed of the subject Impala reported by Dr. Kadiyala and Dr. Stern of 36 to 41 mph, but keeping all other values the same from Dr. Kadiyala and Dr. Stern's analysis, a typical range of attentive drivers would have been able to detect the pedestrian, recognize the hazard, and brake fully to stop the car in approximately 178 ft. Given an appropriate headlight-based detection distance threshold for pedestrian wearing light-colored clothing and walking relatively in line with the vehicle's path (199 ft), a typical range of attentive drivers would have been able come to a complete stop with 20 feet to spare prior to the point of impact from the speed range of 36 to 41 mph presented by Dr. Kadiyala and Dr. Stern.

Furthermore, at the impact speeds calculated by Dr. Kadiyala and Dr. Stern, a typical range of attentive drivers would have been able to detect the pedestrian, recognize the hazard, and swerve 3 feet laterally to the left, while applying the brakes, in 157 feet of longitudinal distance, which would have successfully avoided contact with Ms. Lucas. Given an appropriate headlight-based pedestrian detection distance for pedestrian wearing light-colored clothing and walking relatively in line with the vehicle's path (199 ft), a typical range of attentive drivers would have been able to swerve to the left prior to the point of impact with 40 feet to spare.

Parameter	Distance
Hazard recognition distance based on headlight detection of a pedestrian wearing light-colored clothing within the direct path of a vehicle	199 ft*
Distance needed to apply emergency braking and come to a complete stop	178 ft
Distance needed to swerve away from the point of impact	157 ft

**This value falls within the hazard recognition range of 180 to 226 feet as described in our opinions above.*

Even with the errors made by Dr. Kadiyala and Dr. Stern, their analysis did not address the complete absence of any braking or steering response by the vehicle driver. With the artificially low detection threshold of 155 feet incorporated into the Kadiyala and Stern report, there still should have been significant slowing or lateral motion by the Chevrolet, which was not evidenced in the actual collision event. When the errors made by Dr. Kadiyala and Dr. Stern were corrected to accurately reflect peer-reviewed human factors and crash reconstruction calculations, it is conclusive to a reasonable degree of engineering certainty that the collision between Ms. Norris and Ms. Lucas was entirely avoidable by Ms. Norris had she properly attended to the visual information presented to her and properly implemented either braking or steering. Ms. Lucas was wearing light-colored clothing, was in motion, and was there to be seen within the headlight beam of Ms. Norris's 2009 Chevrolet Impala from a sufficient distance for detection, recognition, and response by a typical range of drivers. Given the specific factors regarding the operating environment, the pedestrian, and the vehicle, the typical range of attentive and unimpaired drivers would have been able to detect and recognize the potential conflict hazard of a moving pedestrian, with sufficient remaining time and distance to successfully brake or steer the vehicle away from the pedestrian in a manner that would have avoided the crash entirely. When compared against the typical range of attentive and unimpaired drivers, Ms. Norris exhibited not only a delay in detection and response to the presence of a pedestrian that was walking directly in her path and illuminated by her headlights, but a complete absence of detection and response prior to the audible and tactile experience of the collision itself. Ms. Norris failed in both the detection phase and in the response phase, failing to apply the appropriate braking and/or steering maneuvers to avoid a crash.

REBUTTAL O'TOOLE REPORT

The report prepared for attorney Alan Landman by Mr. Chip O'Toole was vague and provided merely a conclusory but unsubstantiated claim regarding a "normally attentive" driver's inability to avoid the subject collision. Specifically, Mr. O'Toole's report provides no quantitative assessment of the vehicle's speed at impact, the illumination detection threshold necessary for driver detection of this walking pedestrian and clothing, the typical range for driver perception-response time, the times and distances needed for either braking or steering response completion, and the actual pre-impact response or lack thereof evidenced in the subject collision sequence. Without these calculations, his statements regarding a typical, attentive driver's ability to avoid the subject crash are unsubstantiated.

The vague and unsubstantiated statement reported by Mr. O'Toole was inconsistent with the incident-specific combination of the vehicle, roadway, and pedestrian factors for this collision event. After performing a thorough engineering and crash reconstruction analysis utilizing well-accepted engineering methodologies, the conclusions that we provided in our report rebut the vague, unsubstantiated claim of the O'Toole report.