

**THE STATE OF SOUTH CAROLINA  
In The Supreme Court**

Kareem J. Graves and Tara  
Graves, individually and as  
duly appointed personal  
representatives of the Estate of  
India Iyanna Graves, Appellants,

v.

CAS Medical Systems, Inc., Respondent.

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Appeal from Orangeburg County  
James C. Williams, Jr., Circuit Court Judge

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Opinion No. 27168  
Heard November 30, 2011 – Filed August 29, 2012

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**AFFIRMED AS MODIFIED**

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J. Edward Bell, III, of Georgetown, for Appellants.

Clarke W. DuBose, of Haynsworth Sinkler Boyd, of  
Columbia, and Sarah P. Spruill, of Haynsworth  
Sinkler Boyd, of Greenville, for Respondent.

John S. Nichols, of Bluestein, Nichols, Thompson,  
and Delgado, of Columbia, for Amicus Curiae.

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**JUSTICE HEARN:** India Graves, a six-month-old girl, died while being monitored by one of CAS Medical Systems' products. India's parents, Kareem and Tara Graves, subsequently filed a products liability lawsuit against CAS, contending the monitor was defectively designed and failed to alert them when India's heart rate and breathing slowed. The circuit court granted CAS's motion to exclude all of the Graves' expert witnesses and accordingly granted CAS summary judgment. We affirm as modified.

### **FACTUAL/PROCEDURAL BACKGROUND**

India and her sisters, Asia and Paris, were triplets born prematurely to Kareem and Tara. All three girls spent the first six weeks of their lives in the hospital so they could be monitored, a standard practice for premature babies. When they were finally sent home, their doctor ordered that the Graves use a monitor manufactured by CAS to track their breathing and heart rates as a precaution. The monitor was designed to sound an alarm, which, by all accounts, is quite loud, if the subject were to experience an apneic, bradycardia, or tachycardia event.<sup>1</sup> Once the breathing or heart rate returns to normal, the alarm stops. Each machine also keeps a log of any events, which is the term for when the alarm sounds, and records the pertinent data and vital signs.

As an additional safety measure, CAS installed not only a back-up alarm, but also a feature that records whether the alarm sounded. This system operates primarily through an independent and separate microphone specifically designed to listen for the alarm. If it hears the alarm, it then makes a notation in the monitor's internal log. If it does not hear the alarm, then it records "Front alarm not heard," and the monitor will sound the back-up alarm. A microphone listens for this back-up alarm as well and records whether it was heard. If the back-up alarm fails, all the lights on the front of the monitor flash.

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<sup>1</sup> When one stops breathing, it is called apnea. Bradycardia is when an individual's heart rate slows, while tachycardia is when the heart rate gets too high.

On the night of April 10, 2004, India was hooked up to the monitor and fell asleep next to her father on his bed. At the time, Tara was awake doing chores.<sup>2</sup> Tara eventually moved India to her bassinet, and Tara herself went to sleep around 2:00 in the morning on April 11th. According to Tara, she woke up shortly before 4:00 a.m. from a bad dream and decided to go check on the babies. Paris and Asia responded to her touch, but India did not. When she realized India was not breathing, she immediately began CPR. Kareem woke up during the commotion and called 911. By the time EMS arrived, India was already dead. An autopsy revealed that she died from Sudden Infant Death Syndrome (SIDS), which essentially means that no attributable cause of death exists.

Tara and Kareem claim the monitor's alarm never sounded that night. Additionally, they testified that all the lights on the front of the monitor were on, although they were solid and not flashing. Another family member who was asleep downstairs from India also could not recall hearing the alarm go off. Tara further testified the machine was not turned off until the next day, when the monitor was removed for testing.

India's monitor recorded the following events beginning the morning of April 11th. At 2:39 a.m., the monitor first detected a slow heart beat from India. Over the next thirteen minutes, the monitor recorded twenty-three separate apnea or bradycardia events. By 2:52 a.m., India had passed the point of resuscitation. The monitor recorded six more events before showing it was powered down at 3:50 a.m. The log shows it was then powered back up the next morning. For every event, the monitor recorded hearing the alarm properly sound and accurately traced India's slowing breathing and heart rate. As India's treating physician put it, the machine's performance was tragically perfect: "[A]s sad as it is, the tracing is beautiful. It is a – you watch the baby die on the leads."

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<sup>2</sup> Due to the demands of raising triplets, the Graves received help from relatives. The relatives would generally care for the babies during the day while Tara slept, and Tara was on "night duty."

The Graves subsequently filed a strict liability design defect claim against CAS, contending the monitor's software design caused the alarm to fail.<sup>3</sup> Their claim revolves around what is known as "spaghetti code," which is when computer code is unstructured and becomes "a rather tangled mess." Spaghetti code can result from the overuse of "goto" or "unconditional branch" statements, which causes a signal working its way through the code to jump around instead of following a linear path. Boiled down, the Graves' theory is that certain unknown external inputs occurring during India's apneic and bradycardia events triggered some of these goto statements as the signal was being sent to sound the alarm. This in turn caused the signal to be pushed off course and never reach its destination.

To support this theory, the Graves designated three software experts to testify regarding the alarm's failure: Dr. Walter Daughterity, Dr. William Lively, and Frank Painter. In arriving at their conclusions that a software defect caused the alarm to fail, none of the experts did much actual testing of the software. Instead, they used a "reasoning to the best inference" analysis, which is similar to a differential diagnosis in the medical field where potential causes of the harm are identified and then either excluded or included based on their relative probabilities. In this case, three potential causes were identified: hardware error, complaint error, and software error. Complaint error means that the monitor was misused or the alarm did sound and the Graves failed to hear it.<sup>4</sup> All the experts were able to dismiss

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<sup>3</sup> The Graves also sued CAS for negligence and breach of warranty. CAS moved for summary judgment on all claims, and the Graves understood this to be the scope of the motion. The circuit court granted CAS's motion in full. On appeal, however, the Graves only argue the court erred in granting summary judgment on the design defect claim. Accordingly, the Graves have abandoned these other causes of action. *Transp. Ins. Co. & Flagstar Corp. v. S.C. Second Injury Fund*, 389 S.C. 422, 431, 699 S.E.2d 687, 691 (2010) ("An unappealed ruling is the law of the case and requires affirmance.").

<sup>4</sup> While there is no evidence suggesting that the Graves misused the machine on the night in question, there is evidence that the alarm worked properly and the Graves failed to hear it. In addition to the monitor's recordation of hearing the alarm sound, India's pediatrician testified he believes Kareem and Tara simply slept through it. As the father of triplets himself, the doctor was

hardware error as a cause because the machine was tested and shown to have functioned properly. Thus, the question became whether complaint error or a software error occurred.

Dr. Daugherty excluded complaint error because the machine was hooked up to India properly and he did not believe anyone could sleep through the alarm. In other words, because the Graves claim the alarm did not wake them, that means it did not go off. After being confronted with the fact that the monitor listens for the alarm and separately records whether it was heard, Dr. Daugherty accordingly concluded it "is certain" the internal logs showing the alarm sounded on the morning of April 11th are not reliable "in light of the undisputed testimony that the alarm did not function."<sup>5</sup> Having dismissed hardware and complaint error, Dr. Daugherty ultimately concluded that software error was the most likely cause of the alleged failure based on his independent review of the code and other reported incidents of alarm failure.<sup>6</sup>

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aware of just how exhausted the Graves were. In his opinion, Tara woke up when the alarm was going off, turned it off, and then discovered India had passed away. Although the alarm is piercingly loud, if one is tired enough, he testified that it is possible to sleep through it. His opinion was bolstered by the fact that the machine seems to have worked just as it was supposed to and recorded India's passing perfectly. The log also seems to show the alarm managed to stimulate the baby into breathing normally at times. We recite this evidence only to demonstrate complaint error is a valid consideration in this case.

<sup>5</sup> Dr. Daugherty also averred the logs are incorrect because they too are the product of spaghetti code. However, he never addressed how the code's categorization leads to the conclusion that an independent microphone could record hearing the alarm when it did not actually sound. In any event, his final conclusion rested on the "undisputed testimony" from the Graves.

<sup>6</sup> The record contains approximately fifty reports from the Food and Drug Administration of incidents where the alarm on a CAS monitor purportedly failed to sound during an event. None of the reports identifies a software error as the cause, and except where a hardware problem was involved, CAS was never able to repeat the alleged failure. Furthermore, none of the reports contains a detailed factual background describing the failure.

As to Dr. Lively, the record does not show he engaged in any analysis regarding complaint error. He did agree with Dr. Daugherty that the most likely cause was software error. In arriving at this conclusion, however, Dr. Lively relied only on Dr. Daugherty's review of the code and did nothing to search for a defect himself. In fact, he testified it was not his job to look through the code for errors, and that responsibility fell on Dr. Daugherty. He also relied on the same reports of other failures as Dr. Daugherty, but he admitted that he did not know whether these other reports had been substantiated.

Painter as well concluded a software error most probably caused the alarm to fail. He, like Dr. Daugherty, excluded complaint error because of the Graves' own statements that the alarm failed. Thus, during his deposition when he learned the monitor recorded hearing the alarm sound, Painter summarily concluded this had "no effect" on his opinion. Specifically, even though he conceded that this ordinarily would show the alarm sounded, he maintained this was not the case here "because the Graves say they didn't hear the alarm." When explaining software error was the cause, Painter also admitted that he never examined the code in any detail and only "spent a half an hour just thumbing through it and looking at it." In an affidavit he filed early in the case, Painter instead stated his conclusion rested on the opinions of Dr. Daugherty and Dr. Lively. In his deposition, on the other hand, Painter testified that his opinion actually was not based on the work of Dr. Daugherty and Dr. Lively, but on the reports of other alarm failures submitted to the FDA.

Finally, the Graves designated Dr. Donna Wilkins as an expert to testify whether India could have been revived had Tara or Kareem been woken up by the alarm. Although Dr. Wilkins stated she was not an expert in SIDS, it was her belief, based on her many years of experience and training as a neonatologist, that it was more likely than not Tara and Kareem would have been able to revive India had they heard an alarm. She did acknowledge no proof existed that a monitor can prevent SIDS, but from her tenure in the neonatal intensive care unit babies experiencing apneic events can be resuscitated.

CAS moved to have all the Graves' experts excluded, arguing none of them met the reliability factors for scientific testimony set forth in *State v. Council*, 335 S.C. 1, 515 S.E.2d 508 (1999). CAS also moved for summary judgment, contending that without expert testimony the Graves have no evidence of a design defect. The court agreed that the Graves' computer experts all sought to introduce scientific testimony, but it went on to hold their opinions were unreliable both as scientific evidence and as nonscientific evidence and thus were inadmissible. It also excluded Dr. Wilkins' testimony because she was not an expert on SIDS and did not satisfy *Council*. Having excluded the opinions of all the Graves' experts, the court granted CAS's motion for summary judgment.

The Graves filed a Rule 59(e), SCRCPP, motion, arguing in particular that even without expert testimony, they still presented enough circumstantial evidence to survive summary judgment. The court disagreed, holding that a product defect case cannot be proven by circumstantial evidence. This appeal followed.

## **ISSUES PRESENTED**

- I. Did the circuit court err in excluding the opinions of the Graves' experts?
- II. Did the circuit court err in granting CAS's motion for summary judgment?

## **LAW/ANALYSIS**

### **I. EXPERT WITNESSES**

The Graves first argue that the circuit court erred in excluding the testimony of their four experts. While we agree the court erred in finding Dr. Wilkins unqualified and in excluding her testimony, we find no abuse of

discretion in excluding the opinions of Dr. Daugherty, Dr. Lively, and Painter that a software defect caused the alarm to fail as unreliable.<sup>7</sup>

"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." Rule 702, SCRE. All expert testimony must meet the requirements of Rule 702, regardless of whether it is scientific, technical, or otherwise. *State v. White*, 382 S.C. 265, 270, 676 S.E.2d 684, 686 (2009). The qualification of a witness as an expert is within the discretion of the circuit court, and we will not reverse absent an abuse of that discretion. *Watson v. Ford Motor Co.*, 389 S.C. 434, 447, 699 S.E.2d 169, 176 (2010). An abuse of discretion occurs when the circuit court's rulings "either lack evidentiary support or are controlled by an error of law." *State v. Pagan*, 369 S.C. 201, 208, 631 S.E.2d 262, 265 (2006).

In determining whether to admit expert testimony, the court must make three inquiries. First, the court must determine whether "the subject matter is beyond the ordinary knowledge of the jury, thus requiring an expert to explain the matter to the jury." *Watson*, 389 S.C. at 446, 699 S.E.2d at 175. Second, the expert must have "acquired the requisite knowledge and skill to qualify as an expert in the particular subject matter," although he "need not be a specialist in the particular branch of the field." *Id.* Finally, the substance of the testimony must be reliable. *Id.* It is this final requirement of reliability which is the central feature of the inquiry. *White*, 382 S.C. at 270, 676 S.E.2d at 686.

If the proffered testimony is scientific in nature, then the circuit court must determine its reliability per the factors set forth in *Council*. *Id.* at 449–50, 699 S.E.2d at 177. Under *Council*, the court must consider the following:

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<sup>7</sup> In considering the reliability of Dr. Daugherty's and Dr. Lively's opinions, we have reviewed all of their depositions and affidavits. We therefore do not need to reach the Graves' additional argument that the circuit court erred in excluding some of their affidavits under *Cothran v. Brown*, 357 S.C. 210, 592 S.E.2d 629 (2004), because they are inadmissible regardless.

"(1) the publications and peer review of the technique; (2) prior application of the method to the type of evidence involved in the case; (3) the quality control procedures used to ensure reliability; and (4) the consistency of the method with recognized scientific laws and procedures." 335 S.C. at 19, 515 S.E.2d at 517. However, these factors "serve no useful analytical purpose" for nonscientific evidence. *White*, 382 S.C. at 274, 676 S.E.2d at 688. In those cases, we have declined to offer any specific factors for the circuit court to consider due to "the myriad of Rule 702 qualification and reliability challenges that could arise with respect to nonscientific expert evidence." *Id.* Nevertheless, the court must still exercise its role as gatekeeper and determine whether the proffered evidence is reliable. *Id.* Thus, while a challenge to an opinion's reliability generally goes to weight and not admissibility, this "familiar evidentiary mantra" may not be invoked until the circuit court has vetted its reliability in the first instance and deemed the testimony admissible. *Id.* at 274, 676 S.E.2d at 689.

### A. Computer Experts

CAS concedes that the first two elements under Rule 702 have been met with respect to Dr. Daugherty, Dr. Lively, and Painter, i.e., their testimony would aid the jury and they are qualified. Thus, the only question on appeal is whether their opinions that a software defect caused the alarm to fail are reliable. The bulk of the arguments advanced by the Graves concern whether the court erred in categorizing the testimony as scientific and thus subject to *Council*.<sup>8</sup> They posit that when viewed instead under the proper lens, it is admissible. However, we need not determine whether the court erred in classifying the opinions as scientific because we hold they are unreliable under either standard.<sup>9</sup>

As previously mentioned, we have declined to set a general test for nonscientific testimony due to the multitude of challenges which may arise. Thus, this evidence must be evaluated on an ad hoc basis. Although this is our first opportunity to assess the reliability of an opinion rendered using the

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<sup>8</sup> It is unclear whether the court found Painter's testimony scientific. We will therefore analyze it as both scientific and nonscientific.

<sup>9</sup> In reaching this conclusion, we assume *arguendo* only that reasoning to the best interference is a valid scientific method.

reasoning to the best inference methodology, the United States Court of Appeals for the Tenth Circuit has already done so. In *Bitler v. A.O. Smith Corp.*, 400 F.3d 1227 (10th Cir. 2004), the court held that "[e]xperts must provide objective reasons for eliminating alternative causes" when engaging in this analysis. *Id.* at 1237. Furthermore, "an inference to the best explanation for the cause of an accident must eliminate other possible sources as highly improbable, and must demonstrate that the cause identified is highly probable." *Id.* at 1238. Although the expert need not categorically exclude alternate causes, that does not relieve the expert of his burden to prove the alternate cause is at least highly improbable based on an objective analysis. *See id.* at 1237–38 & n.6. We believe this objectivity requirement is consistent with the quality control element of *Council*.

In this case, both the monitor's log reflecting that the alarm sounded and the testimony of India's pediatrician implicate complaint error as a potential issue. We therefore focus our attention on whether these experts sufficiently discounted it as highly improbable based on objective criteria.

Turning first to Dr. Daugherty, his exclusion of complaint error as a cause was premised on the Graves' own testimony that the alarm did not sound. He even went so far as to conclude that there is *no* "evidence that can support a finding that the alarm actually functioned the night of the incident." When presented with the evidence from the machine's internal log that the alarm did go off, Dr. Daugherty therefore dismissed it as unreliable based on the "undisputed testimony that the alarm did not function," i.e., the Graves contention that the alarm failed.<sup>10</sup> Dr. Daugherty simply assumed the alarm did not sound and provided no reason for discounting the evidence to the contrary other than the assertion of the person alleging a failure. Thus, Dr. Daugherty did not objectively discount the evidence of complaint error as required by *Bitler*. *See Clark v. Takata Corp.*, 192 F.3d 750, 757 (7th Cir. 1999) ("Simply put, an expert does not assist the trier of fact in determining

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<sup>10</sup> Dr. Daugherty references the testimony of Anita Kelly, the EMT who tended to India, as supporting his conclusion that the alarm did not go off. However, Kelly could not state whether she looked at the machine and saw it was even turned on when she was in the house. Her testimony therefore does not support either side of the debate.

whether a product failed if he starts his analysis based upon the assumption that the product failed (the very question that he was called upon to resolve), and thus, the court's refusal to accept and give credence to [the expert's] opinion was proper.").

Dr. Lively's testimony is even more problematic. The record reveals no attempt on his part to eliminate complaint error as a contributing cause. At best, he simply forgot to consider it; at worst, he blithely dismissed it without comment despite evidence demonstrating it is a distinct possibility. In either case, not only has he failed to provide objective criteria for why this could not have occurred, but no evidence shows he endeavored to eliminate it as highly improbable to begin with.

Painter's testimony presents the same problem. When he learned for the first time during his deposition that the monitor has an independent system to listen for the alarm, he was able to conclude without hesitation or further review of the system that this evidence simply has no effect on his opinion. While he conceded this ordinarily would mean the alarm sounded, he baldly marginalized the evidence in this case simply because the Graves said the alarm did not go off. We therefore believe there is evidence that Painter too did not provide objective criteria for eliminating complaint error as a cause. Underscoring our concerns about the reliability of his opinion, Painter ultimately stated that the monitor "failed in a way that we don't really understand."

We also agree with the circuit court that these experts improperly relied on reports of other failures to bolster their conclusions that software error was to blame. Evidence of similar incidents is admissible "where there is some special relation between the accidents tending to prove or disprove some fact in dispute." *Watson*, 389 S.C. at 453, 699 S.E.2d at 179. A plaintiff bears the burden of demonstrating the other accidents are "substantially similar to the accident at issue" by demonstrating that the products are similar, the alleged defect is similar, the defect caused the other accidents, and there are no other reasonable secondary explanations. *Id.* While the products in the FDA report are similar to the one here, the record contains no evidence suggesting any further connection to or whether a software error was even involved in these other cases. In order to deem these other incidents substantially similar, we

would have to automatically equate an alleged failure with a software defect of the kind claimed by the Graves without any evidentiary basis for doing so. This we will not do.

Accordingly, we find evidence to support the circuit court's conclusion that the testimony of these experts is unreliable regardless of whether it is deemed scientific or nonscientific. Complaint error is a real possibility in this case, and there is evidence that none of the experts objectively found it to be highly improbable. Of great concern to us is that each of them began with the assumption that the monitor failed and then discounted evidence to the contrary based on the *ipse dixit* of the plaintiff who hired them, an analysis we find lacking in the indicia of reliability required for reasoning to the best inference. While the Graves may be correct that it is rare to exclude the testimony of three experts in a single case, we find no abuse of discretion based on the record before us.

### **B. Dr. Wilkins**

The circuit court excluded Dr. Wilkins' testimony first on the ground that she was not qualified to render an opinion as to SIDS. This was due in large part to her statement that she would not consider herself a SIDS expert. However, an "expert need not be a specialist in the particular branch of the field." *Watson*, 389 S.C. at 446, 699 S.E.2d at 175. The record before us reveals a doctor with over thirty years' experience as a neonatologist who stays current on SIDS literature. It is also clear from her testimony that she routinely encounters SIDS in her practice. We therefore find the circuit court abused its discretion in finding Dr. Wilkins was not qualified to render an opinion in this case.

The court further excluded her testimony on the ground that it was not reliable under the *Council* factors. We recognized in *Whaley*, though, that most doctors do *not* give scientific testimony. 305 S.C. at 142, 406 S.E.2d at 371. Thus, a doctor who merely applies his knowledge to every day experiences does not need to satisfy the additional foundation required by *Council*. *See id.* at 142, 406 S.E.2d at 371–72. All Dr. Wilkins did was apply the knowledge she has gained from her training and experience as a neonatologist to determine whether India would have survived had her

parents been alerted to her condition. Accordingly, the circuit court committed an error of law in holding Dr. Wilkins to the *Council* standard for reliability. However, for the reasons discussed below, CAS is still entitled to summary judgment even if Dr. Wilkins' testimony is taken into account.

## II. SUMMARY JUDGMENT

We turn now to whether the Graves have adduced sufficient evidence to withstand summary judgment without the opinions of their computer experts. We hold they have not.

In any products liability action, a plaintiff must establish three things: (1) he was injured by the product; (2) the product was in essentially the same condition at the time of the accident as it was when it left the hands of the defendant, and (3) the injury occurred because the product "was in a defective condition unreasonably dangerous to the user." *Madden v. Cox*, 284 S.C. 574, 579, 328 S.E.2d 108, 112 (Ct. App. 1985). If the plaintiff is pursuing a design defect claim, the only way to meet the third element is by "point[ing] to a design flaw in the product and show[ing] how his alternative design would have prevented the product from being unreasonably dangerous." *Branham v. Ford Motor Co.*, 390 S.C. 203, 225, 701 S.E.2d 5, 16 (2010). Summary judgment is appropriate when there are no genuine issues of material fact and the moving party is entitled to judgment as a matter of law. Rule 56(c), SCRPC.

Here, there is no argument that the monitor was not in essentially the same condition as it was when it left CAS's factory. Furthermore, Dr. Wilkins testified it is more likely than not that India could have been revived had the parents been woken up by an alarm. Without the testimony of their experts, however, the Graves have no direct evidence of whether the monitor was unreasonably dangerous because there is no identification of a specific design flaw.<sup>11</sup> Thus, the question is whether the record contains sufficient circumstantial evidence of a defect required to survive summary judgment.

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<sup>11</sup> There was evidence introduced as to feasible alternative designs.

We take this opportunity to correct the circuit court's erroneous holding that a plaintiff cannot use circumstantial evidence to prove a design defect claim. "Any fact in issue may be proved by circumstantial evidence as well as direct evidence, and circumstantial evidence is just as good as direct evidence if it is equally as convincing to the trier of the facts." *St. Paul Fire & Marine Ins. Co. v. Am. Ins. Co.*, 251 S.C. 56, 59–60, 159 S.E.2d 921, 923 (1968). Thus, the general rule is any fact can be shown through circumstantial evidence, and it is up to the trier of fact to determine whether it alone is worth as much merit as direct evidence. Although CAS argues we foreclosed the use of circumstantial evidence for design defects in *Branham*, we recognized in that very case that other similar incidents can be used to show a design defect, which is classic circumstantial proof. *See* 390 S.C. at 230, 701 S.E.2d at 20. In this case, however, we need not determine what quantum of circumstantial evidence of a design defect is necessary to withstand summary judgment because the lack of expert testimony is nevertheless dispositive of the Graves' claim.

It is well-established that one cannot draw an inference of a defect from the mere fact a product failed. *Sunvillas Homeowners Ass'n v. Square D. Co.*, 301 S.C. 330, 333, 391 S.E.2d 868, 870 (Ct. App. 1990). Accordingly, the plaintiff must offer some evidence beyond the product's failure itself to prove that it is unreasonably dangerous. Thus, while the Graves do have witnesses who testified that the alarm did not sound, that alone is not sufficient. In some design defect cases, expert testimony is required to make this showing because the claims are too complex to be within the ken of the ordinary lay juror. *Watson*, 389 S.C. at 445, 699 S.E.2d at 175 ("[E]xpert testimony is required where a factual issue must be resolved with scientific, technical, or any other specialized knowledge."); *cf. Esturban v. Mass. Bay Transp. Auth.*, 865 N.E.2d 834, 835 (Mass. App. Ct. 2007) ("By its nature, an escalator is a complex, technical piece of machinery, whose design and operational requirements are not straightforward. Accordingly, any determination of the dimensions essential to its safe operation is generally beyond the scope of an average person's knowledge."); *Olshansky v. Rehrig Int'l*, 872 A.2d 282, 287 (R.I. 2005) (affirming grant of summary judgment in defect case involving a shopping cart in the absence of expert testimony because "[a]lthough average lay persons use shopping carts every day, we conclude that only an expert who understands the mechanics of constructing such a cart could understand

and explain the mechanics of the cart and whether a defect proximately caused an injury such as Mr. Olshanky's"); *Burley v. Kyttec Innovative Sports Equip., Inc.*, 737 N.W.2d 397, 407 (S.D. 2007) ("[U]nless it is patently obvious that the accident would not have happened in the absence of a defect, a plaintiff cannot rely merely on the fact that an accident occurred. It is not within the common expertise of a jury to deduce merely from an accident and injury that a product was defectively designed."); *Mack Trucks, Inc. v. Tamez*, 206 S.W.3d 572, 583 (Tex. 2006) ("A lay juror's general experience and common knowledge do not extend to whether design defects such as those alleged in this case caused releases of diesel fuel during a rollover accident. Nor would a lay juror's general experience and common knowledge extend to determining which of the fire triangle's fuel sources, diesel from the tractor or crude from the tanker, would have first ignited, or the source for the first ignition."). Whether expert testimony is required is a question of law. *Mack Trucks, Inc.*, 206 S.W.3d at 583.

We have little trouble concluding as a matter of law that the Graves' claim is one such case because it involves complex issues of computer science. Although we use computers in some form or fashion almost every day of our lives, the design and structure of the software they run is beyond the ordinary understanding and experience of laymen. Hence, the Graves must support their allegations with expert testimony, and without it, their claims are subject to dismissal. Because we find the circuit court did not abuse its discretion in excluding the Graves' computer experts, CAS is entitled to summary judgment.

## CONCLUSION

In conclusion, we hold the circuit court did not abuse its discretion in excluding the testimony of the Graves' computer experts. While the court did err in excluding Dr. Wilkins' testimony, the Graves are still left with no expert opinions regarding any defects in the monitor. In the absence of this evidence, CAS is entitled to summary judgment. We accordingly affirm the circuit court as modified.

**TOAL, C.J., BEATTY and KITTREDGE, JJ., concur. PLEICONES, J., concurring in result only.**