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The Admissibility of Data Collected from Wearable Devices

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I. Introduction

1. Wearable devices, also known as “wearables,” are the next generation of portable technology and have quickly become ubiquitous in our society.² With the demand for these new gadgets continuously increasing, society can expect wearables to have a tremendous impact on almost every facet of life. First, consider the potential of wearable devices not only in litigation, but also in the realm of medicine, employment, and everyday living. Produced by companies like Fitbit Inc., Apple Inc., and Google Inc., wearables have already transformed the way users communicate, exercise, and keep organized. Despite some hesitancy within the legal community, these devices have also begun to slowly impact and transform litigation. The first known use of wearable technology data as evidence in litigation is the personal injury case involving a law firm in Calgary, Canada, using their client’s activity data from her Fitbit “to show that her activity level is less and compromised as a result of her injury.”³

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2 Nathan Chandler, *How FitBit Works*, HOW STUFF WORKS.

3 Parmy Olson, *Fitbit Data Now Being Used in the Courtroom*, FORBES (Nov. 16, 2014, 4:10 PM).

2. Some of the most popular wearables on the market are the Fitbit fitness trackers (“Fitbit”), which are designed to measure the wearer’s activity levels by collecting data using sensors that monitor things such as the user’s location, vital signs, sleep patterns, and physical activity.⁴ These devices create detailed descriptions of the user’s everyday activities and habits, which are then compiled and stored in “the cloud.”⁵ While Fitbit technology has revolutionized the way users exercise and monitor their health, the accumulation of personal health and activity data could also have a significant — perhaps even detrimental — impact on the justice system if it is determined to be admissible evidence. Wearable technology will particularly burden the courts in five ways: (1) The sheer volume of data collected by these devices will be indiscernible without employing specialized analytics companies; (2) The owners may be unaware that the data collected by these devices is discoverable; (3) The courts will have difficulty drawing the line between discoverable and privileged data; (4) The parties must prove that the information is reliable, and if it is not, must supplement the information with other evidence and witnesses; and (5) The parties asking for electronic discovery will have to prove that the information is relevant to the litigation and cannot be found anywhere else.⁶ Additionally, the electronic evidence found on wearable technology could be considered quantified self-incrimination because the data is unconsciously produced by simply going about a normal day. There are also privacy concerns involving the use of health and personal data collected on wearable devices being collected as evidence, but for the purposes of this Article, the analysis of the problems involved with using electronically stored information (“ESI”) from wearables will focus on the relevancy, reliability, and probativity of the data.

3. ESI, includes items such as emails, text messages, voicemails, metadata, and pictures, which could all be discovered on wearable devices as valuable supplemental evidence in support of a plaintiff’s or witness’s testimony.⁷ But, ESI “could just as easily be used by insurers to deny disability claims, or by prosecutors seeking a rich source of self-incriminating evidence.”⁸ Using such evidence to supplement, or as an alternative to, witness testimony could potentially eliminate the inherent concerns of witness reliability by making it easier to discredit false or inaccurate testimony. However, the admissibility of ESI from wearable devices introduces several new evidentiary challenges, including the relevance, authenticity, accuracy, and reliability of the data, which results from the fundamentally unreliable nature of the

4 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

5 Parmy Olson, *Fitbit Data Now Being Used in the Courtroom*, FORBES (Nov. 16, 2014, 4:10 PM). See also Jonathan Strickland, *How Cloud Computing Works*, HOW STUFF WORKS.

6 See Neda Shakoori, *Wearables: Your Next Trial Witness?*, DAILY J. (S.F., CAL.) (Dec. 10, 2014).

7 *Electronically Stored Information (ESI)*, PRACTICAL LAW. See also Sharon Nelson & John Simek, *The New Federal Rules of Civil Procedure: An ESI Primer*, LAW PRAC. (Dec. 2006).

8 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

wearable devices.⁹ An additional problem stems from the fact that data from these unreliable devices may not be submitted to the court in its original form, but as analyzed conclusions completed by a third-party analytics company.¹⁰ This presents its own problems based on the unknown and un-testable nature of the algorithms these companies use to interpret the data for use as evidence in litigation.

4. In an attempt to articulate the potential uses and shortcomings of using wearable devices in litigation, this Article will briefly discuss all of the inherent flaws associated with wearable technology, but will primarily focus on the relevancy, reliability, and probativity concerns surrounding both the devices and the third-party analytics companies. This Article will argue that data from wearable devices should only be used as supplemental evidence, rather than as the basis of a claim or as an alternative to expert witness testimony, in accordance with the Federal Rules of Evidence. These devices are known to be inherently unreliable and as such, courts should not treat them as irrefutable evidence that can stand-alone. Until the rules are amended to specifically address the requirements for using this type of ESI, or the industry improves the reliability of the devices and the algorithms used to interpret the data, courts should rigorously scrutinize the data collected from wearable devices for its relevance, accuracy, and reliability before admitting it as supplemental evidence.

5. Part II of this Article will begin by explaining the development and functionality of wearable devices — specifically the Fitbit. It will also explore the growing demand for wearable technology. Part III will briefly examine previous electronic discovery of ESI and determine how wearable data discovery could be more problematic than its earlier counterparts, such as portable devices and computers. It will then further discuss the particular benefits of using data from wearable technology to help resolve the concern over witness credibility and how wearables have the potential to “kill the art of lying.”¹¹ Additionally, it provides examples of the potential uses of Fitbit data in the courtroom, specifically analyzing the only two cases known to have used ESI from a wearable device as evidence.¹²

6. Part IV will analyze the evidentiary hurdles established by the Federal Rules of Evidence and the Federal Rules of Civil Procedure, with a focus on the rele-

9 Elizabeth Sorenson Brothen, *“Every Move You Make, Every Step You Take, I’ll Be Watching You”:* *Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?*, 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) NO. 5 (June 4, 2015). See also *How Accurate are Fitbit Trackers?*, Fitbit.com.

10 See *Technology—Fitbit Data Used As Evidence*, HERMAN HERMAN & KATZ, LLC (Dec. 11, 2014).

11 Andrea Peterson, *How Technology Could Kill the Art of Lying*, THE WASHINGTON POST (July 8, 2015).

12 Valerie Waltz, *Police: Florida Woman Fabricated Rape Report in Lancaster County*, FOX43 (June 19, 2015, 11:59 AM). See also *Technology—Fitbit Data Used As Evidence*, HERMAN HERMAN & KATZ, LLC (Dec. 11, 2014).

vance, reliability, and probativity of wearable device data as evidence in court. It will also provide a similar analysis of the Federal Rules of Evidence and *Daubert*¹³ requirement of reliability applied specifically to the third-party analytics companies interpreting the data to be used as evidence. Part V will recommend that the legal community use data from wearable devices in a strictly limited capacity until the technology industry can improve the reliability and functionality of the devices. Lastly, this Article will suggest that if the technology has not been improved and parties still desire to use this type of evidence in their cases — despite the significant evidentiary challenges — the only permissible way of submitting wearable device data in court would be as supplemental evidence under the Federal Rules of Evidence.

II. The History, Technology, and Popularity of Fitbit

A. *Fitbit's functionality and features*

7. Fitbit is a wearable fitness-tracking device that was created to help encourage people to be more active. Despite the number of other wearable fitness trackers and health monitors available, Fitbit leads the market in sales and hype — “accounting for over 50% of the three million plus sales of wearable fitness devices across a one-year period in 2013 and 2014.”¹⁴

8. The device is designed as a wristband that tracks the user’s activity, while the user is wearing the device, and then syncs that data to the cloud for the use of monitoring their exercise progress, sleep quality, and medical statistics. However, “Fitbit is more than a simple fitness tracker (step counter) these days. The wearable trackers are [now] connected to software that syncs [the user’s data] between the device, mobile app and [the] web.”¹⁵

9. The newest Fitbit, named the Fitbit Charge 2 and known as one of the most innovative fitness watches on the market, tracks even more data than previous models. The technology behind the Charge 2 includes: GPS, three-axis accelerometer, a three-axis gyroscope, a digital compass, an optical heart rate monitor, an altimeter, and a vibration motor. With the addition of these sophisticated features, Fitbits can now track steps, distance, calories burned, active minutes, stairs climbed, hourly

13 *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 585 (1993).

14 Mikel Delgado, *How Fit is That Fitbit?*, BERKELEY SCIENCE REVIEW (Oct. 7, 2014).

15 Robert J. Nelson, *Everything You Need to Know About Fitbit*, I MORE.COM (June 12, 2014, 8:24 AM EDT).

activity, sleep habits, stationary time, continuous heart rate, breathing patterns, location, pace, elevation, and routes, among other calculable figures.¹⁶ The result is an enormous amount of activity and health data that provides an intimate knowledge of the user's every move, as long as the user is wearing the device and using it properly. It is important to remember that reliable data is only collected when the user is wearing the device regularly and properly. When a user fails to wear the device or wears the device in a manner that would prohibit the collection of data — for example, wearing the device on the ankle instead of the wrist or wearing the device while pushing a shopping cart — the data would be inconsistent and therefore, fail to provide such an intimate knowledge of the wearer's life. Additionally, step counts can be false or misleading because the device will record less activity data when the activity requires less arm movement — like pushing a shopping cart or baby stroller.¹⁷

10. To monitor the data being collected by the Fitbit, users are only required to own the device and the accompanying equipment needed to sync with the Fitbit database. “Devices like Fitbits sync automatically to a smartphone throughout the day via Bluetooth” or they can be programmed to sync with other Bluetooth-capable devices.¹⁸ This process is completed using the cloud computing system. All you need is a device and application to connect to the multitude of computers, servers, and data storage systems that create the ‘cloud’ of computing services. After the device syncs the activity data to the cloud, users can view the data in their online Fitbit profiles where they can scrutinize their progress and improvements (or failures), plan and strategize their exercise routines, and examine their health statistics and data. With this user-friendly technology and continued societal concern of staying healthy, Fitbit wearables are only becoming more popular.¹⁹

B. The growing demand for wearable technology

11. From smartwatches and smart glasses to fitness trackers and health monitors, the possibilities are limitless for innovations in the wearable technology industry.²⁰ The most popular wearables thus far are the devices that fall into the category of fitness trackers, but statistics prove that wearable devices as an entire group

16 See *Fitbit Charge 2*, FITBIT.COM.

17 See *How Accurate are Fitbit Trackers?*, FITBIT.COM.

18 *Wearable Tech: The Impact on Cases and ediscovery*, D4DISCOVERY (Dec. 8, 2016).

19 See John Divine, *Fitbit Does It Again; Beats Expectations for Earnings, Revenue*, U.S. NEWS (Aug. 2, 2016, 5:16 PM).

20 See generally Margaret Rhodes, *A Wearable Gadget Implanted in Your Hand Isn't as Freaky as You'd Think*, WIRED (Oct. 20, 2014, 6:30 AM).

are not as popular as many may believe.²¹ This may contribute to why there have been so few cases to discuss the issue of using wearable data in court, but it does not necessarily diminish the need for clarity in the standards and requirements for admitting wearable technology data into evidence.²² This is especially true, as the popularity and sales of all wearables devices is projected to steadily increase over the next several years.²³

12. Although this Article focuses singularly on Fitbit fitness trackers, there are a plethora of other devices available in the industry, most notably the Apple Watch and the Microsoft Band, which could also have a tremendous impact on litigation.²⁴ While the number of wearable devices on the market continues to increase each year, so does the number of devices that could potentially generate data for use as evidence in a courtroom. Moreover, “[d]ata from wearables is poised to become even more insightful for courts as their sensors become ever more sophisticated.”²⁵ With the demand increasing for new devices and technology, courts need to prepare for the onslaught of cases attempting to use wearable device data as evidence and should rigorously scrutinize the data to ensure its accuracy and reliability.

III. The Untapped Potential of Using Fitbit Data As Evidence

13. Recognizing the value of ESI evidence, several courts have begun to allow data from other types of electronic devices to be admitted as evidence during litigation.²⁶ For instance, electronic discovery has been used in numerous cases to obtain anything from text messages stored on mobile devices, to the Internet search history stored on the hard drive of a computer.²⁷ Under the current Federal Rules of Evidence, admitting ESI collected from portable devices and computers as evidence does not require much more than the admission of standard evidence. However, despite the fact that the legal system has seen a continued increase in the use of

21 *The Wear, Why, and How*, THE ECONOMIST (Mar. 14, 2015).

22 See Steven W. Tepler, *Testable Reliability: A Modernized Approach to ESI Admissibility*, 12 AVE MARIA L. REV. 213, 213 (2014).

23 *Facts and Statistics on Wearable Technology*, STATISTA (Dec. 4, 2015), .

24 See Lynnsey Gardner, *Fitness Tracker Data Used in Court Cases*, NEWS4JAX.COM (Feb. 22, 2016, 11:29 PM).

25 Parmy Olson, *Fitbit Data Now Being Used in the Courtroom*, FORBES (Nov. 16, 2014, 4:10 PM).

26 See *United States v. Safavian*, 435 F. Supp. 2d 36, 36 (D.D.C. 2006) (allowing emails as evidence); *State v. Dunn*, 7 S.W.3d 427, 427 (Mo. Ct. App. 1999).

27 Michael Arnold & Dennis R. Kiker, *Big Data Collection Problem of Little Mobile Devices*, 21 RICH. J.L. & TECH. 10, 10-31 (2015).

digital data in cases, courts have been hesitant to address the admissibility of evidence collected and stored specifically on wearable devices.²⁸

14. Unlike in the past when the discovery tools available to uncover relevant evidence were limited to methods such as plaintiff testimony, expert testimony, medical records, and surveillance, wearable devices, like Fitbits, will be able to provide attorneys with a new source of evidence in the form of hard data.²⁹ These devices store endless amounts of data about the user's location, activity levels, sleep patterns, and more effectively "creating a detailed narrative of [the] user's entire day."³⁰ The result of all of this data hoarding is simple: "[we] are no longer the only source of data about [ourselves]."³¹

A. Glimpses of wearable devices in the justice system

15. The first known case in the United States to use data from a wearable device began when the police in Lancaster County, Pennsylvania, collected information from a Fitbit to help determine that Jeannie Risley fabricated a rape report.³² Risley called 911 and reported to the police that she was sleeping when she woke up to find her attacker sexually assaulting her. However, further investigation revealed evidence directly contradicting her claim.³³ During the investigation, the police found Risley's Fitbit on the floor "and when they downloaded its activity, the device became a witness against her."³⁴ The activity data collected by the device revealed that she was actually awake and moving around the premises at the time she claimed she was attacked.³⁵ In combination with the other evidence poking holes in Risley's story, such as the lack of footprints in the snow outside the home and the missing signs of an intrusion, her Fitbit data led the police to dismiss her assault claim. As a result, "Risley was charged with false reports to law enforcement, false alarms to public safety, and tampering with evidence for allegedly overturning furniture

28 Samuel Gibbs, *Court Sets Legal Precedent With Evidence From Fitbit Health Tracker*, THE GUARDIAN (Nov. 18, 2014, 11:03 EST).

29 Elizabeth Sorenson Brotten, *"Every Move You Make, Every Step You Take, I'll Be Watching You": Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?*, 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) NO. 5 (June 4, 2015).

30 Neda Shakoori, *Wearables: Your Next Trial Witness?*, DAILY J. (S.F., CAL.) (Dec. 10, 2014).

31 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

32 Valerie Waltz, *Police: Florida Woman Fabricated Rape Report in Lancaster County*, FOX43 (June 19, 2015, 11:59 AM).

33 Brett Hambricht, *Police: Fitbit Reveals Fake Report*, LANCASTERONLINE (June 19, 2015).

34 Kashmir Hill, *Fitbit Data Just Undermined a Woman's Rape Claim*, FUSION (June 29, 2015, 2:57 PM).

35 Brett Hambricht, *Police: Fitbit Reveals Fake Report*, LANCASTERONLINE (June 19, 2015).

and placing a knife to make it appear she had been raped [at knifepoint].” Unfortunately, there is limited information on her physical appearance and the medical reports from the time that the event took place.³⁶

16. The Lancaster case may have been the first known use of this type of data in the United States legal system, but the first case to ever use Fitbit data in a courtroom was a personal injury case that took place in Canada.³⁷ In this case, the plaintiff, a former personal trainer, was injured in an accident four years earlier, when Fitbit was not yet available to the public.³⁸ Unfortunately, this meant that the plaintiff would be unable to show her activity data from before the accident occurred, but her attorneys still believed this would be enough.³⁹ The interesting difference in this case was the use of a third-party, health-data analytics company, called Vivametrica, Inc.⁴⁰ The company is “an open source data analytics platform that pulls data from smartphones and wearable fitness devices — with user consent — to get a picture of health trends.”⁴¹ Vivametrica analyzed the plaintiff’s Fitbit data by comparing her activity levels to the activity levels of the general public to determine if she was “healthy” and “normal” for someone in her profession and age range.⁴² If the data analysis produced by Vivametrica could prove that her activity levels had fallen below the baseline for fitness standards of her age group, it would illustrate the negative effects of the accident and support her claim of personal injury.⁴³ Ultimately, her attorneys hoped that using her Fitbit history would help prove that the accident had hindered her ability to be active and exercise, and therefore entitle her to compensation.

17. These two cases are just the beginning of legal authorities and parties tapping into the vast amounts of information gathered by wearable devices to supplement

36 Myles Snyder, [Police: Woman’s Fitness Watch Disproved Rape Report](#), ABC27.com (June 19, 2015, 2:28 PM).

37 Alexander Howard, [How Data From Wearable Tech Can Be Used Against You in a Court of Law](#), THE HUFFINGTON POST (July 3, 2015, 12:59 PM EDT).

38 Parmy Olson, [Fitbit Data Now Being Used in the Courtroom](#), FORBES (Nov. 16, 2014, 4:10 PM).

39 Karla Grossenbacher, [‘Wearables’ In Court: How Your Electronic Data Becomes Evidence](#), LAW360 (July 13, 2015); Elizabeth Sorenson Brotten, [“Every Move You Make, Every Step You Take, I’ll Be Watching You”: Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?](#), 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) NO. 5 (June 4, 2015).

40 Tamsin McMahon, [Data From Wearables Could Be Used As Evidence – For or Against You](#), MACLEAN’S (Jan. 5, 2015).

41 Jennifer Brown, [Data Fit for the Courtroom?](#), CANADIAN LAWYER (Feb. 2, 2015).

42 Tamsin McMahon, [Data From Wearables Could Be Used As Evidence – For or Against You](#), MACLEAN’S (Jan. 5, 2015).

43 Parmy Olson, [Fitbit Data Now Being Used in the Courtroom](#), FORBES (Nov. 16, 2014, 4:10 PM); Kate Crawford, [When Fitbit Is the Expert Witness](#), THE ATLANTIC (Nov. 19, 2014).

or defend their cases.⁴⁴

B. Supplementing or replacing witness testimony

18. Wearable data has unlimited potential in the legal context to help resolve some of the weaknesses that plague current forms of evidence. One of the most prevalent weaknesses stems from concerns about the reliability and credibility of witnesses. Using Fitbit data as an additional source of evidence could help eliminate the concerns about the fallibility of human memory, biases, and intentional deceptions that undermine witness testimony reliability.

19. Courts are aware of the flaws that abound in witness testimony and are particularly concerned with the fallibility of the human memory. After studying human memory capabilities, psychologist Elizabeth Loftus stated

Early on . . . the observer must decide to which aspects of the visual stimulus he should attend. Our visual environment typically contains a vast amount of information, and the proportion of information that is actually perceived is very small Once the information associated with an event has been encoded or stored in memory, some of it may remain there unchanged while some may not. Many things can happen to a witness during this crucial retention stage.⁴⁵

20. Loftus was also not the first to recognize the inherent faults in human memories. In fact, the United States Supreme Court has even found the issue so prominent in litigation that it included dicta on the subject within several different opinions.⁴⁶ For instance, Justice Brennan addressed the imperfections of human memories in the context of mistaken eyewitness testimony by explaining that it is most likely attributed to the inherent dangers of eyewitness testimony and the suggestibility intrinsic to the pretrial process.⁴⁷ Unfortunately, there are a large number of cases involving mistaken identifications by witnesses, based on the proverbial untrustworthiness that characterizes eyewitness testimony, to support Justice Brennan's argument.⁴⁸

44 Samuel Gibbs, *Court Sets Legal Precedent With Evidence From Fitbit Health Tracker*, THE GUARDIAN (Nov. 18, 2014, 11:03 EST).

45 ELIZABETH F. LOFTUS, *EYEWITNESS TESTIMONY* 21 (1st ed. 1979).

46 See, e.g., *United States v. Wade*, 388 U.S. 218, 235 (1967); *Manson v. Brathwaite*, 432 U.S. 98, 119 (1977).

47 See, e.g., *United States v. Wade*, 388 U.S. 218, 235 (1967).

48 Fredric D. Woocher, *Did Your Eyes Deceive You? Expert Psychological Testimony on the Unreliability of Eyewitness Identification*, 29 STAN. L. REV. 969, 970 (1977) (citing F. FRANKFURTER, THE CASE OF SACCO AND VANZETTI (1927)).

21. This problem also exists in other areas of witness testimony, including testimony given by experts. “[Courts] understand that doctors and other witnesses have expertise, but they [are not] all-knowing beings.”⁴⁹ As a result, courts use cross-examination as a “safeguard” against inaccuracies and are tasked with determining the reliability of the evidence, in light of the possibility that the witness’s memory is inherently unreliable.⁵⁰ The pervasiveness of such faulty memories has been the subject of both legal and medical studies for decades and the resulting conclusion is that human memory is flawed because: “(1) an observer cannot possibly take in all of the information available in a scene; and (2) an observer’s memory may shift over time, including what may naturally be forgotten and what may be reconstructed from suggestive procedures.”⁵¹

22. Additional concerns about witness credibility involve both biases and intentional deceptions. In studies concerning the affect of biases on witnesses, psychologists have concluded that biases permeate individual’s decision-making so much that they impact everything from distance perception to choosing a seat on a plane.⁵² This is caused by “the personal needs and motives of the observer [distorting their] perception.” For example, victims may unconsciously alter their memories of their attacker’s physical appearance by including physical characteristics “that the victim associates with the personality traits typified by the criminal’s behavior.”⁵³ This is not done in an attempt to lie or to deceive the court, rather it is an unconscious phenomenon caused by the victim’s beliefs and prior experiences. Though it occurs less frequently than the other flaws of witness testimony, there are also instances where witnesses consciously lie in an attempt to deceive the justice system.

23. However, technology is on the verge of making lying much more difficult to get away with. In fact, “the full scope of how our increasingly networked and documented lives can catch deceptions can be hard to fathom.” With the accumulation of data from wearable devices comes a better way to determine the credibility of witness testimony. To utilize technology in this manner, courts would need to employ the use of wearable data as supplemental evidence as a comparison to what some-

49 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

50 *United States v. Wade*, 388 U.S. 218, 235 (1967).

51 Kristin Bergman, *Cyborgs in the Courtroom: The Use of Google Glass Recordings in Litigation*, 20 RICH. J.L. & TECH. 11 (2014) (citing ELIZABETH F. LOFTUS, EYEWITNESS TESTIMONY (1st ed. 1979)).

52 Anjanette H. Raymond & Scott J. Shackelford, JD, PhD, *Jury Glasses: Wearable Technology and Its Role in Crowdsourcing Justice*, 17 CARDOZO J. CONFLICT RESOL. 115, 136 n.95 (2015).

53 Fredric D. Woocher, *Did Your Eyes Deceive You? Expert Psychological Testimony on the Unreliability of Eyewitness Identification*, 29 STAN. L. REV. 969, 981 (1977).

one is actually testifying.⁵⁴ Of course, this is in circumstances limited to the type of data collected by the specific device worn by the witness — for instance, Fitbit data would most likely not be able to disprove inaccurate eyewitness identification. However, Fitbit data could be useful in proving that a witness lied about their location on the day of the crime. A great example of this potential use of wearable data is the Lancaster case involving Risley’s false rape report. The use of the Fitbit data to disprove Risley’s false rape report, eradicated Risley’s chance of getting away with her lies to the police.⁵⁵ Using wearable technology data as evidence in this manner helps eliminate the conscious or unconscious ability to lie as a witness, but fails to completely remove the opportunity to be deceitful due to the possibility of the information being faulty or misleading.

24. These weaknesses, intrinsic to witness reliability, have significantly impacted numerous cases throughout the entire history of the justice system. In an attempt to solve the issues of fallibility of human memory and potential biases, courts could allow data from Fitbits and other wearable devices to be used as supplemental evidence to witness testimony. A great example of this potential use is shown by the personal injury case from Canada — in which the plaintiff supplemented her own testimony with activity data from her Fitbit, to help prove that her accident had caused her injuries, which limited her ability to exercise, and therefore helped eliminate doubts shrouding her claims that potentially entitled her to compensation.⁵⁶ Using wearable device data to supplement a plaintiff’s testimony and replace the testimony typically provided by an expert witness eliminates the fallacies that plague witness testimony, because the wearable device is a machine that cannot generate biased, unconscious, or intentionally deceitful results. Additionally, wearable device-generated data cannot be considered hearsay for the purpose of admitting it as evidence since hearsay does not include statements made by animals or machine-generated assertions.⁵⁷

25. There are few tested examples of the potential uses for wearable data as evidence, but as the devices grow in popularity, it is likely that Fitbits, and other wearable technology, will be used as evidence for the purposes of self-incrimination, impeaching the witness, or bolstering the plaintiff’s case.

54 Andrea Peterson, *How Technology Could Kill the Art of Lying*, THE WASHINGTON POST (July 8, 2015).

55 See, e.g., Scott Greenfield, *But for Fitbit: A Rape That Never Happened*, MIMESIS LAW (June 30, 2015).

56 See generally Keith Lee, *The Newest Field of E-Discovery: You*, ABOVE THE LAW (Nov. 20, 2014, 3:04 PM).

57 FED. R. EVID. 801.

C. Predicting wearable technology's potential in litigation

26. There has been a tremendous amount of speculation about the myriad of cases in which wearable technology would be useful in supplementing or defending a claim. Not only could this type of data be useful in personal injury cases and criminal cases, as discussed above, but there is also potential for this data to be relevant in several other legal scenarios including: (1) criminal cases in which one would need an alibi; (2) civil cases like traffic violations, car accidents, or even divorces in which heart rate data and location could prove an extramarital affair; (3) claims of self-defense in which heart rate and activity data could suggest they were in a dangerous situation; and (4) workers' compensation claims, particularly when an employee is injured on the job while wearing a device that tracks location and health data.⁵⁸ Though many believe that wearables could be a "gold mine of potentially relevant ESI,"⁵⁹ it is difficult to predict the full potential of the hoarding of digital data in the legal realm.

IV. Evidentiary Challenges and the Chaos of Wearables

27. There are always risks with technology innovations and wearable technology is no exception to that rule. While there are many potential benefits to admitting data from wearable devices as evidence in court, there are several challenges (many evidentiary) that will make that process extremely difficult.

28. Technology is always changing and growing to appeal to mass markets. As a result, courts are struggling to keep the discovery-net wide enough to encompass information stored on wearable smart devices as the technological industry constantly evolves. There are a number of ways in which wearables could encumber the litigation process, but this Article focuses primarily on how to determine the relevance, reliability, and probativity of the data stored on wearable devices for use as evidence in court. Other problems not fully discussed in this Article include the identification of potential ESI becoming more difficult because most users will be unaware that the data stored and collected by wearable tech is discoverable. Preservation is also becoming more difficult because most users will not know to preserve the information, and collection of the data is becoming more complicated because

58 See generally Christina Bonnington, *Data From Our Wearables Is Now Courtroom Fodder*, WIRED (Dec. 12, 2014, 6:30 AM).

59 Neda Shakoori, *Wearable Technology: A Perfect Fit For Litigation*, MCMANISLAW.COM (Aug. 21, 2014).

most wearables send the ESI to the cloud.⁶⁰ Another issue that seems to arise from using wearable device data, as evidence, is that opposing parties will try to compel that the information be “turned over by the device wearer as part of routine discovery in personal injury cases.”⁶¹

29. Through the years, the courts have had to determine the best ways to deal with the immeasurable amount of information found through electronic discovery, the privacy concerns associated with that process, the preservation of such volatile data, and the production of the ESI. In response to the growing need for ESI to be admissible as evidence, changes were made to Rule 34 of the Federal Rules of Civil Procedure.⁶² These changes addressed some of the issues courts were encountering when trying to request electronic discovery of digital data. As a result of these efforts, Rule 34 now states that a party may request, within the scope of Rule 26(b), any other party to produce “any designated documents or electronically stored information — including writings drawings, graphs, charts, photographs, sound recordings, images, and other data or data compilations — stored in any medium from which information can be obtained either directly or, if necessary, after translation by the responding party into a reasonably usable form.”⁶³ This effectively settled the dispute over whether ESI could be considered a “document” under the rules. However, numerous issues still plague the discovery and use of ESI, particularly now that ESI is also being collected from wearables and used as evidence.⁶⁴

30. The biggest challenges facing the use of wearable data as evidence are the reliability flaws of the devices themselves and the evidentiary hurdles that are likely to keep courts from admitting the data as evidence.

A. The chaos of wearables

31. To provide a comprehensive understanding of the concerns and challenges arising from the use of wearable technology data as evidence, it is vital to consider the inherent flaws of the current wearables on the market.⁶⁵

60 Maureen O’Neill, *E-Discovery and the Internet of Things*, DISCOVERREADY (Nov. 14, 2014).

61 Steven M. Sweat, *Could Apple Watch Data Prove Your Personal Injury Case?*, VICTIMSLAWYER.COM (May 4, 2015).

62 See Michael Arnold & Dennis R. Kiker, *Big Data Collection Problem of Little Mobile Devices*, 21 RICH. J.L. & TECH. 10, 10-31 (2015).

63 Fed. R. Civ. P. 34(a)(1)(A).

64 Margaret Littman, *Data From Wearable Devices Is Being Eyed as Evidence in the Courtroom*, A.B.A. J. (Apr. 1, 2015, 4:00 AM CDT).

65 See generally Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

1. *Reliability Concerns Abound*

32. The wearable devices on the market continue to become more sophisticated, with better features and functionality. But until the industry addresses the inherent lack of reliability associated with wearables, it will be difficult to use the data they collect as evidence in court. Even if the industry addresses the lack of reliability, additional issues of relevancy, accessibility, privacy, collecting/processing and costs will prevent a significant number of cases from using this data as evidence.⁶⁶ The data from these devices is unreliable for several reasons including, but not limited to: (1) the ability to be misused (users can remove the device at any time, users can self-manipulate the data, people other than the owner could be using the device, some of the devices could register moving your arms as “steps,” and even animals could wear the devices and log activity data)⁶⁷, (2) the ability for the data to be misinterpreted (due to the potential use of third-party analytics companies instead of the raw data), and (3) the large discrepancies between the different wearables on the market.⁶⁸ This will make it incredibly difficult for courts and analytics companies to standardize the admissibility of wearable data.

33. For example, when Fitbit is monitoring a user’s heart rate, a large variety of factors could affect the data collected on the device. Another example includes the accuracy of the GPS data collected on Fitbits. The GPS in Fitbits requires a direct path to the satellite it is using to receive and transmit radio transmissions. “If the signal is being blocked — either because you’re underground, near many tall buildings, or as a result of atmospheric effects — GPS will not work. Thus, whereas GPS gives you a more accurate measure of distance than step counting alone, the actual accuracy depends on both your environment and the weather.”⁶⁹

2. *Problems that May Arise*

34. An example of why the misuse of the device could be a problem can be seen in the Lancaster case. During the police investigation, the woman said her Fitbit was lost during the altercation, but the device was then found and the data on it used against her.⁷⁰ But what if someone else took the device and wore it or put it on an animal? What if a plaintiff’s wearable device records less activity post-accident?

66 Neda Shakoori, *Wearables: Your Next Trial Witness?*, DAILY J. (S.F., Cal.) (Dec. 10, 2014).

67 Elizabeth Sorenson Brothen, “*Every Move You Make, Every Step You Take, I’ll Be Watching You*”: *Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?*, 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) no. 5 (June 4, 2015).

68 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

69 *How Accurate is GPS?*, FITBIT.COM.

70 Brett Hambricht, *Police: Fitbit Reveals Fake Report*, LANCASTERONLINE (June 19, 2015).

Would that be evidence that the plaintiff sustained injuries during the accident that affect their ability to exercise, or just reflect that they either wore the device less or exercised less post-accident to manipulate the data collected?

35. These questions do not have complete answers because the technology is still advancing to recognize the different circumstances apparent in each of these hypothetical situations. As Neda Shakooi explains, “on some devices you can binge-watch *Orange Is the New Black* while seated and, if you wave your arms, your device may log it as physical activity. Even when the devices work as intended, people forget to charge, sync, or even wear them.”⁷¹ Additionally, another major issue is that the features and functionality of these wearables varies greatly between brands and devices,⁷² and as such, the devices are too inconsistent amongst themselves for analytics companies to attempt and standardize the process of interpreting data stored on them.⁷³

36. Even if you can determine that all of those reliability concerns have been rectified, the collection of ESI on wearable technology will still be an extremely difficult task that will potentially require these third-party analytics companies to interpret the data and present it in a form that courts will be capable of understanding.⁷⁴ This challenge involves operational and evidentiary issues because these types of technology devices use the cloud computing systems to store the data they collect. At a recent symposium one discussion focused on the practical challenges to obtain and use Fitbit data in litigation with one participant commenting, “[b]ut then you [try and] get it out and you just sort of say, ‘What can I even do with it? Because I can’t present it at trial. It’s completely unworkable; there’s some difficulty even making sense of it.’”⁷⁵ Finally, the cost of obtaining the data from the provider and paying the third-party analytics company, that will interpret the data, will inhibit a large number of parties from using this type of evidence that could potentially be very useful in their cases.⁷⁶ All of these examples only scratch the surface of the

71 Margaret Littman, *Data From Data from Wearable Devices Is Being Eyed as Evidence in the Courtroom*, A.B.A. J. (Apr. 1, 2015, 4:00 AM CDT).

72 Elizabeth Sorenson Brotten, “*Every Move You Make, Every Step You Take, I’ll Be Watching You*”: *Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?*, 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) NO. 5 (June 4, 2015). See also *How Accurate are Fitbit Trackers?*, FITBIT.COM; see also Nicole L. Black, *Wearable Tech Data as Evidence in the Courtroom*, LLRX.COM (Sept. 23, 2015).

73 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014).

74 See generally Neda Shakoori, *Wearables: Your Next Trial Witness?*, DAILY J. (S.F., CAL.) (Dec. 10, 2014).

75 James R. Silkenat, *Practicing Law in the Age of Surveillance and Hackers – An Exploration of Privacy and Data Security*, 38 AM. J. TRIAL ADVOC. 575, 576 (2015).

76 Neda Shakoori, *Wearables: Your Next Trial Witness?*, DAILY J. (S.F., CAL.) (Dec. 10, 2014).

potential reliability concerns that will persist when parties rely on Fitbit and other wearable device data as evidence.

B. Problems with ESI involving the Federal Rules of Evidence

37. The current cases using Fitbit data should encourage the legal community to determine the manner and timing in which parties should be expected to disclose their wearable device data, regardless of whether it is a Fitbit or any other brand of wearable technology.⁷⁷

38. To introduce wearable technology data as evidence, the court must consider a number of the Federal Rules of Evidence that have been previously used to admit other forms of ESI. Judge Grimm's opinion in *Lorraine v. Markel American Insurance Co.* for the United States District Court for the District of Maryland discussed the evidentiary rules analysis required for assessing the admissibility of ESI, and set forth a comprehensive guide for admitting ESI as evidence.⁷⁸ The *Lorraine* model begins with determining the relevance of the data and ends with balancing the probativity of the data with the danger of unfair prejudice.

39. The *Lorraine* model suggests:

Whenever ESI is offered as evidence, either at trial or in summary judgment, the following evidence rules must be considered: (1) is the ESI relevant as determined by Rule 401 (does it have any tendency to make some fact that is of consequence to the litigation more or less probable than it otherwise would be); (2) if relevant under 401, is it authentic as required by Rule 901(a) (can the proponent show that the ESI is what it purports to be); (3) if the ESI is offered for its substantive truth, is it hearsay as defined by Rule 801, and if so, is it covered by an applicable exception (Rules 803, 804 and 807); (4) is the form of the ESI that is being offered as evidence an original or duplicate under the original writing rule, of [sic] if not, is there admissible secondary evidence to prove the content of the ESI (Rules 1001-1008); and (5) is the probative value of the ESI substantially outweighed by the danger of unfair prejudice or one of the other factors identified by Rule 403, such that it should be excluded despite its relevance. Preliminarily, the process by which the admissibility of ESI is determined is governed by Rule 104, which addresses the relationship between the judge and the jury with regard to preliminary fact finding associated with the admissibility of

⁷⁷ Alexander Howard, [How Data From Wearable Tech Can Be Used Against You in a Court of Law](#), THE HUFFINGTON POST (July 3, 2015, 12:59 PM EDT).

⁷⁸ See generally *Lorraine v. Markel Am. Ins. Co.*, 241 F.R.D. 534, 538 (D. Md. 2007).

evidence. Because Rule 104 governs the very process of determining admissibility of ESI, it must be considered first.⁷⁹

40. Within *Lorraine's* guide to determine if the data is admissible, the proponent of the ESI evidence must first determine the relevance of the data under Rule 401. Under this rule, information is determined to be relevant for the court's purposes if: (a) it has any tendency to make a fact more or less probable than it would be without the evidence; and (b) the fact is of consequence in determining the action.⁸⁰ The vast amount of data collected on wearable devices could make it difficult for the parties and the courts to limit the scope of the e-discovery to just the information that makes a fact more probable or is important in determining the action. As an example, "an arson investigator could not care less that you ran 5 miles on the date of the fire, but would be very interested that your running app[lication] mapped out your entire route, which happened to go right by the site of the blaze."⁸¹ Both pieces of information are intertwined within the wearable device, and therefore it would be difficult to limit the collection of evidence to just the one bit of information being sought as evidence, in this example the user's location, without including other data that is not relevant and not admissible evidence.

41. Though determining the relevancy is an important step in the evidentiary process, it is more important to determine the authenticity of the information and the probative value of the data. The authentication process for evidence focuses on three key elements required to prove the information is relevant to the case; these elements include legitimacy, accuracy, and the relation to the parties.⁸² This is required under Rule 901(a), which states that the proponent of the evidence must satisfy the requirement of authenticating the evidence by producing evidence that could support a determination that the evidence is in fact what the proponent claims it to be. This requirement can be satisfied with a witness testifying that the item is what the proponent claims it is, as long as they have knowledge of the item, or with other evidence that describes the process and shows that the item generates reliable conclusions. Authentication can also be done with a comparison to other authenticated items under Rule 901(b)(3).⁸³ For example, emails can be authenticated by other emails already admitted into evidence, even when there is no identifying information included on the email because the email in evidence has the same screen

79 See generally *Lorraine v. Markel Am. Ins. Co.*, 241 F.R.D. 534, 538 (D. Md. 2007).

80 FED. R. EVID. 401.

81 Sharon D. Nelson, John W. Simek & Thomas L. Mighell, *What the Internet of Everything Means for Lawyers: Evidence, Privacy and Data Security Implications*, AMERICAN LAW INSTITUTE (Feb. 9, 2015).

82 Christina Bonnington, *Data From Out Wearables Is Now Courtroom Fodder*, WIRED (Dec. 12, 2014, 6:30 AM).

83 FED. R. EVID. 901(a), (b)(1), (b)(3), (b)(9).

name or characteristics.⁸⁴

42. As in the case of wearable devices, it will most likely be necessary to have the wearer of the device testify for purposes of authentication.⁸⁵ And although there is a risk of manipulation of the data, the possibility of alteration does not directly eliminate the potential use of the data as evidence. Rather, the proponent simply has to present a reason for the jury to believe that the evidence is what they say it is. A potential downfall for plaintiffs bringing in such evidence is that they are later subject to review on cross-examination and this opens up the door for the opposing party to prove to the jury that the evidence is in fact not what the plaintiff would like you to think it is, or to impeach the witness.⁸⁶ When using wearable data that has been analyzed by a company like Vivametrica, the proponent would also need to authenticate the process used to produce the data and prove that the process leads to accurate findings.⁸⁷ This too could be accomplished by having an expert witness from the company take the stand and testify to the authenticity of the analytical process. However, this expert testimony will be subject to the admissibility standards established by *Daubert* and Rule 702.

43. In addition to authenticating the data, it is vital to determine the probative value of the data under Rule 403 before admitting the information as evidence. Rule 403 states that “the court may exclude relevant evidence if its probative value is substantially outweighed by a danger of one or more of the following: unfair prejudice, confusing the issues, misleading the jury, undue delay, wasting time, or needlessly presenting cumulative evidence.”⁸⁸ Courts will be particularly concerned with the potential for unfair prejudice “in circumstances when the court is concerned as to the reliability or accuracy of the information that is contained within the electronic evidence.”⁸⁹

44. Due to the unreliable nature of the wearable technology, it seems most likely that courts would decide that the data could prejudice the jury and therefore, should be deemed not admissible in evidence. For example, lie detector tests have been proven to be inherently unreliable technology and have been continuously banned from being used as evidence in the courtroom for fear that it could result in unfair prejudice and bias. For years, courts were also hesitant to admit emails and x-ray

84 Sheldon M. Finkelstein & Evelyn R. Storch, *Admissibility of Electronically Stored Information: It's Still the Same Old Story*, 23 J. AM. ACAD. MATRIM. LAW. 45, 48 (2010).

85 FED. R. EVID. 901(b)(1).

86 Jill Schachner Chanen, *What Everyone Is Wearing*, A.B.A. J. 12, (Apr. 2015).

87 FED. R. EVID. 901(b)(9).

88 FED. R. EVID. 403.

89 *Lorraine v. Markel Am. Ins. Co.*, 241 F.R.D. 534, 538 (D. Md. 2007) (citing *St. Clair v. Johnny's Oyster and Shrimp Inc.*, 76 F. Supp. 2d 773, 773 (S.D. Tex. 1999)).

machine scans into evidence, but as the technology became more popular and better understood throughout society, parties were required to meet lesser standards to authenticate these items for use as evidence.⁹⁰

45. However, the use of wearable technology is not as prevalent in society as email and x-ray machines, and as such, the general population does not yet fully comprehend how they function. This presents a problem for the jury, because if they do not understand how the technology works, and they fail to understand the potential for unreliable data produced by these devices, it could result in an unfair bias. Though an argument exists that the use of wearable data could be used to bolster the party's case, it is more likely that courts will find it to result in a major bias and will find it inadmissible based on its unreliable nature.

46. To determine if wearable data can be used as evidence, it is also important to establish that the device is good science and reliable under Rule 702.⁹¹ This is the most detrimental evidentiary hurdle that will need to be overcome and involves a combination of requirements set out by Rule 702 and *Daubert*.⁹² Under *Daubert*, expert testimony is admissible under Rule 702 when it (1) helps the trier of fact better comprehend the evidence or determine facts at issue, (2) is “based on sufficient facts or data,” (3) is based on methods and standards considered reliable, and (4) reliably applies those methods and standards to the facts involved in the case.⁹³ No case exists that discusses this potential flaw in wearable data, but it seems most likely that this will make it incredibly difficult for parties to submit wearable data as evidence in support of, or defending against, claims. To determine if wearable data were reliable under these standards, the proponent of the evidence would have to prove that the expert witness and the information the expert relied upon for their testimony were based on sound scientific methodology.⁹⁴ Based on the characteristics of wearable technology, including the fact that many are incapable of distinguishing arm movement from actual steps, courts will likely determine that the science behind Fitbit and other wearables is not good science, and therefore expert witnesses will not be able to rely on or testify about such data.

47. The same problem occurs when attempting to hear expert witness testimony about the analytics process used to generate the data.⁹⁵ To determine if the expert

90 *Lorraine v. Markel Am. Ins. Co.*, 241 F.R.D. 534, 538 (D. Md. 2007).

91 Fed. R. Evid. 702.

92 *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 590-95 (1993).

93 Elizabeth Sorenson Brotten, “Every Move You Make, Every Step You Take, I’ll Be Watching You”: Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?, 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) No. 5 (June 4, 2015).

94 *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 593-94 (1993).

95 Kate Crawford, *When Fitbit Is the Expert Witness*, THE ATLANTIC (Nov. 19, 2014); Parmy Olson, *Fitbit Data Now Being Used in the Courtroom*, FORBES (Nov. 16, 2014, 4:10 PM).

witness is relying on good science, the court must look at non-dispositive factors such as the general acceptance of the science in the scientific community, whether it can be tested, the error rate of the process, etc.⁹⁶ However, these factors will be nearly impossible to examine based on the ever-increasing variety of wearable technology on the market. Many of the devices are unique in some way, and therefore, there is no standardization of the technology or the processes the analytics companies use to produce the summarized data from wearable devices.

48. With a lack of standardization in the science or scientific knowledge of the methodology, wearable devices cannot be determined to be good science and will not be admissible under the *Daubert* test and Rule 702.⁹⁷ This determination also correlates with the requirements previously discussed under Rule 403, because if the data fails *Daubert*, it fails 403. If the data and technology of wearables were reliable science, then it would not fail the probativity test under Rule 403. However, because wearable devices have been determined to be unreliable — as shown by the devices failing to track activity data accurately, having users forget to wear the device at all, and users can manipulate the device to show the data they want — they cannot meet the standards required under the *Daubert* test and therefore also fail the probativity test under Rule 403. Due to the incredible chance for bias and prejudice that outweigh the benefits of using data from wearable devices, it is vital that the courts impose strict reliability and probativity standards when determining if the parties are allowed to use such evidence in their cases.

V. Conclusion

49. The historical context of the electronic discovery of wearable technology is limited, primarily because the technology is still incredibly new and still developing. Using data collected from Fitbits and other wearable devices has just begun. Legal professionals still need to learn how and when to use the data properly, and how to maximize the advantages of this new technological source of evidence for their clients.

50. As a result of this continued development and educational process, the uses and limitations of ESI stored on wearable devices may continue to change in the next several years. The accuracy and reliability of these devices is continuing to improve and this will help diminish concerns over the use of wearable device data as evidence, particularly as they become more connected to other devices, such as

⁹⁶ *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 593-94 (1993).

⁹⁷ *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 593-94 (1993).

portable phones and computers, already used as evidence in court.⁹⁸ However, as the technology currently stands, wearable devices lack the reliability necessary to be considered on their own, and therefore should be used as evidence in an extremely limited capacity.

51. It is possible for courts to continue allowing ESI from portable devices under the current Federal Rules of Evidence, if they slightly expand the discovery-net and recognize a few standards specific to wearable devices.⁹⁹ Nevertheless, it is more likely that courts will not rely entirely on this data due to the unreliable technology behind the wearable devices.

52. The discovery of wearable technology will impose several burdens on courts and the parties, based on the very nature of the data. Although the data will be difficult to introduce as evidence because of the relevancy and reliability of the information, this data has the potential to be valuable to the parties involved in the litigation of personal injury and workers' compensation cases. However, the potential value of the data does not replace the reliability concerns that plague the data and technology behind the wearable devices. Therefore, to ensure reliability, parties should be encouraged to supplement the ESI obtained from wearable technology with other forms of traditional evidence, such as doctor's testimony, expert witness testimony, plaintiff testimony, medical records, surveillance, etc. Though this too has its flaws based on the evidentiary hurdles involving Rule 702 and the *Daubert* test.

53. The time has come to recognize and utilize the fact that our daily lives are monitored by a highly networked and personal set of wearable devices that generate very specific data, pertaining to our physical and mental well-being. However, it will need to become more reliable before an evidentiary onslaught of wearable data can begin to take over the justice system.

98 Elizabeth Sorenson Brothen, "[Every Move You Make, Every Step You Take, I'll Be Watching You](#)": [Is Wearable Data Your Next Discovery Tool in Personal Injury Litigation?](#), 11 NEWSL. YOUNG LAW. COMMITTEE (DRI YOUNG LAWYERS COMMITTEE) NO. 5 (June 4, 2015).

99 See Erik Harris, [Discovery of Portable Electronic Devices](#), 61 ALA. L. REV. 193, 193-222 (2009); Serge Jorgensen, [Convergence of Forensics, Ediscovery, Secure, & Law](#), 12 AVE MARIA L. REV. 291, 291-311 (2014).