

IN THE COURT OF APPEALS OF THE STATE OF OREGON	
STATE OF OREGON,	MULTNOMAH Co. Cir. Ct.
Plaintiff-Respondent,	Case Nos. 871035653, 880431573
v.	CA A 154905, 154906
STRESSLA LYNN JOHNSON aka Ira Roscoe Sheppard,	
Defendant-Appellant.	

BRIEF OF *AMICUS CURIAE*
OREGON INNOCENCE PROJECT
IN SUPPORT OF APPELLANT JOHNSON

Appeal from Judgment of the Circuit Court
for MULTNOMAH County

The Honorable Julie E. Frantz, Judge

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I. STATEMENT OF *AMICUS CURIAE*

Oregon Innocence Project (OIP) is a joint project of the Oregon Justice Resource Center (based out of Lewis & Clark Law School) and Metropolitan Public Defender whose mission is to (1) exonerate the innocent, (2) educate and train law students, and (3) promote legal reforms aimed at preventing wrongful convictions.

OIP is the only program in Oregon dedicated to securing the release of wrongfully convicted inmates. Additionally, OIP works with community partners to build support for comprehensive criminal justice reform to improve eyewitness identification, interrogation techniques, discovery practices, and other Oregon policies that do not serve to protect the innocent or punish the guilty.

OIP appears as *amicus curiae* in this matter to urge the court to enhance the truth-seeking functions of the criminal justice system by permitting access to DNA testing. The 316 post-conviction DNA exonerations across the country over the last twenty-five years have proven the value and importance of DNA testing. OIP has a compelling interest in correcting wrongful convictions by promoting broad access and the betterment of our justice system through advances in science.

II. SUMMARY OF ARGUMENT

Since 1989, more than 1,300 people in the United States have been exonerated.¹ Eight percent of those exonerated were inmates sentenced to death.² Last year set a record when 87 wrongful convictions were overturned nationwide, and this year's exonerations are on track to break the record again, with 25 known exonerations in the first quarter alone.³

Many of the exonerations nationwide are the indirect result of advances in forensic DNA analysis and its introduction into the criminal justice system. DNA-driven discoveries have forced our communities to acknowledge that even the most advanced criminal justice systems in the world make frequent and serious mistakes that result in wrongful convictions and incarcerations.

As a "silent biological witness," DNA evidence has helped close thousands of cases, convict guilty suspects, and free innocent ones.⁴ There have been 316

¹ National Registry of Exonerations, <http://www.law.umich.edu/special/exoneration/Pages/about.aspx> (last visited May 1, 2014). *Amicus* has cited to a number of secondary sources, copies of which *Amicus* can provide for the Court's review, if necessary.

² *Report: Exonerations in 2013*, The National Registry of Exonerations (February 4, 2014), <http://www.law.umich.edu/special/exoneration/Pages/learnmore.aspx>.

³ Timothy Williams, *Study Puts Exonerations at Record Level in U.S.*, N.Y. TIMES, Feb. 14, 2014, available at: <http://www.nytimes.com/2014/02/04/us/study-puts-exonerations-at-record-level-in-us.html>.

⁴ JOHN M. BUTLER, FUNDAMENTALS OF FORENSIC DNA TYPING 2 (2010). Dr. John M. Butler, Ph.D., is a NIST Fellow, the creator of STRBase (the widely used Short Tandem Repeat Internet Database), and the Special Assistant to the Director for Forensic Science at the National Institute of Standards and Technology. See

post-conviction DNA exonerations in the United States since the inception of this technology,⁵ the first of which occurred in 1989.⁶ However, of those, 249 have taken place since the year 2000⁷—long after Johnson pled guilty to avoid the death penalty in this case.

This rising tide releasing hundreds of wrongfully convicted prisoners is the result of sustained efforts by lawyers, law students, professors, journalists, scientists, and current and former prisoners—a broad collaboration that has become known as the Innocence Movement.⁸ The Innocence Movement recognizes that “innocent people are convicted in sufficiently large numbers * * * to require efforts to exonerate them, and to advance structural reforms to reduce

Profile of Dr. John M. Butler, Ph.D., National Institute of Standards and Technology, *available at*: <http://www.cstl.nist.gov/strbase/butler.htm>. Dr. Butler has received numerous awards during his career for his work in advancing forensic DNA typing and has more than 100 publications describing aspects of forensic DNA testing, making him “one of the most prolific active authors in the field with articles appearing regularly in every major forensic science journal.” BUTLER, *FUNDAMENTALS OF FORENSIC DNA TYPING* (2005), at xviii.

⁵ The Innocence Project, DNA Exonerations Nationwide, http://www.innocenceproject.org/Content/DNA_Exonerations_Nationwide.php (last visited May 1, 2014).

⁶ BUTLER, *supra* note 4, at 4; The Innocence Project, DNA Exonerations Nationwide, http://www.innocenceproject.org/Content/DNA_Exonerations_Nationwide.php (last visited May 1, 2014).

⁷ *Id.*

⁸ See Marvin Zalman, *An Integrated Model of Wrongful Convictions*, 74 ALBANY L. REV. 1465, 1468 (2011); KEITH A FINDLEY AND LARRY GOLDEN, *THE INNOCENCE MOVEMENT, THE INNOCENCE NETWORK, AND POLICY REFORM, WRONGFUL CONVICTION AND CRIMINAL JUSTICE REFORM: MAKING JUSTICE* 93–100 (Marvin Zalman & Julia Carrano eds., 2014).

such errors in the first place.”⁹

DNA testing statutes, like ORS 138.692, were enacted with the recognition that testing can lead to greater accuracy in our criminal justice system.¹⁰ But the statutes are effective only through enforcement—that is, permitting access to testing. The trial court erred when it found Johnson waived his right to DNA testing under a statute that had yet to be enacted at the time of the waiver. The trial court’s ruling would require a criminal defendant to predict the future of science and technology, and then bet his freedom on that prediction. The backdrop against which Johnson’s plea was made shows the enormity of such an ask.

III. STATEMENT OF FACTS

Amicus adopts Appellant Johnson’s Statement of Facts. Johnson was under the threat of the death penalty in 1993 when he agreed to plead guilty to two murders in exchange for a 22.5 year sentence. (ER 6-10) At the time of the plea, the State had offered forensic test results it argued were conclusive proof of Johnson’s guilt. (ER 21-24) Johnson did not—and could not—know that the testing methods relied upon by the State would later be questioned as unreliable based on advances in forensic sciences.

In 2001, eight years after Johnson’s plea, the Oregon Legislature enacted ORS 138.692, providing criminal defendants with the right to DNA testing.

⁹ Zalman, *supra* note 8, at 1468.

¹⁰ Minutes SB 667, Senate Judiciary Committee, April 18, 2001.

Deoxyribonucleic acid (DNA) is a molecule that contains genetic information. It is found in an organism's cells and is the blueprint for that organism's functions.

DNA can be found in many biological materials because it is contained in every organism's cells. In criminal cases, DNA is often found in biological evidence including blood, saliva, sweat, semen, hair, and skin. Each person's genetic code is inherited and unique, so each DNA profile is distinct (except in identical twins). DNA profiles are encrypted sets of letters that reflect an individual's DNA makeup, which can also be used to identify the person.

Johnson moved for, and was denied, access to DNA testing of certain evidence found at the crime scenes of the two murders for which he was convicted. (ER 11-43) It is based on advances in DNA testing since Johnson's plea that *Amicus* OIP offers this brief.

IV. ARGUMENT

The trial court has erroneously ruled that Johnson waived his right to postconviction DNA testing based on the plea agreement entered in 1993. Under Oregon law, "a waiver is an intentional relinquishment or abandonment of a known right or privilege."¹¹ Oregon courts have held that, "in determining whether a defendant has waived a known right, the court should focus on what the defendant

¹¹ *State v. Clark*, 220 Or App 197, 202, 185 P3d 516 (2008).

knows and understands.”¹² The trial court erred when it found Johnson had waived his right to DNA testing under a statute that did not exist at the time of the waiver and based on science that was later found questionable. Such a ruling frustrates the purpose of the DNA statute and defeats the court’s truth-seeking function.

A. A defendant cannot make a “knowing” waiver of a right that does not exist based on advances in science that could not have been predicted.

Faced with the threat of the death penalty and the state’s reliance on what it asserted were conclusive forensic test results, Johnson agreed to the plea and waiver in 1993. (ER 6-10, 21-24) At that time, DNA testing was still in its infancy and the “Innocence Movement” had yet to begin.

1. Johnson could not have known that the Innocence Movement would develop the area of study into wrongful convictions when he agreed to the plea.

(a) History of DNA Exonerations and the Innocence Movement Nationwide

The development of DNA testing has revolutionized criminal investigations and our ability to recognize actual innocence. Before the 1980s, the study of wrongful convictions had been “largely and somewhat curiously ignored” by researchers, with published literature so rare that “it might have seemed bizarre, if not incoherent, to suggest that the study of miscarriages of justice constituted a

¹² *Id.*

field or area of academic study.”¹³ The once-dominant certainty was that the US criminal justice system almost never convicts an innocent person. In 1985, Attorney General Edwin Meese commented, “[T]he thing is, you don’t have many suspects who are innocent of a crime. That’s contradictory. If a person is innocent of a crime, then he is not a suspect.”¹⁴ The “ghost of the innocent man convicted,” according to Judge Learned Hand, was “an unreal dream.”¹⁵ The ghost proved real with the advent of DNA testing.

DNA evidence entered the US criminal courts as a prosecutor’s tool in 1987. Prosecutors secured the first conviction using DNA evidence in a rape case in Orlando, Florida in 1987.¹⁶ Prosecutorial use of DNA evidence immediately took off.¹⁷

Defense attorneys, however, approached forensic DNA antagonistically, and the ensuing courtroom battles came to be known as “the DNA wars.”¹⁸ The

¹³ Richard A. Leo, *Rethinking the Study of Miscarriages of Justice: Developing a Criminology of Wrongful Conviction*, 21 J. CONTEMP. CRIM. JUST. 201, 204 (2005) (tracing the scholarship of wrongful convictions from 1932 to the mid-2000s).

¹⁴ Justice Under Reagan: Reagan Seeks Judges with “Traditional Approach,” U.S. NEWS & WORLD REPORT, October 14, 1985 at p. 67.

¹⁵ *US v Garsson*, 291 F 646, 649 (SD NY 1923).

¹⁶ *Andrews v. State*, 533 So 2d 841, 850–51 (Fla Dist Ct App 1988) (*abrogated on other grounds in Hadden v. State*, 690 So 2d 573, 577 (Fl S Ct 1997)).

¹⁷ JAY D. AARONSON, GENETIC WITNESS: SCIENCE, LAW, AND CONTROVERSY IN THE MAKING OF DNA PROFILING 35, 41 (2007).

¹⁸ William C. Thompson, *Evaluating the Admissibility of New Genetic Identification Tests: Lessons From the “DNA War,”* 84 J. CRIM. L. & CRIMINOLOGY 22, 23 (1993).

founders of the Innocence Project, Barry Scheck and Peter Neufeld, first developed their expertise by attempting to discredit DNA science.¹⁹ Scheck and Neufeld mounted “the three most widely publicized challenges to the validity and reliability of forensic DNA analysis” in *People v. Castro*,²⁰ *United States v. Yee*,²¹ and *People v. Orenthal James Simpson*, commonly known as the “O.J. Simpson case.”²²

It was through the mounting attacks on DNA science that the testing began to advance toward a tool to exonerate. In 1992, Scheck and Neufeld founded the Innocence Project as a clinical course at Cardozo Law School.²³ The pair reached out to the public by appearing on the Phil Donahue Show in 1993 to discuss forensic DNA and its potential to exonerate wrongly convicted prisoners. “We got hundreds of letters because of the Phil Donahue show, which resulted in quite a number of early exonerations,” Scheck reflected in an interview in 2000.²⁴

Still, the power of DNA evidence was not widely known or appreciated. It was not until 1995—two years after Johnson’s plea—that DNA was, for the first time, showcased to the public. That year marked the now infamous “OJ Simpson

¹⁹ See AARONSON, *supra* note 17, at 41–47.

²⁰ 540 NYS2d 143, 144 (NY Crim Ct 1989).

²¹ 134 FRD 161, 165 (ND Ohio 1991).

²² April 1995 Trial Transcripts, CNN, *available at*: <http://www.cnn.com/US/OJ/trial/apr/>.

²³ Findley, *supra* note 8, at 93, 94.

²⁴ The Innocence Project, In Their Own Words, <http://www.innocenceproject.org/docs/ips2012/founders.php> (last visited May 1, 2014).

trial,” where Scheck and Neufeld publicly attacked the reliability of DNA testing used by the prosecution.²⁵ By the end of that trial, the public had become intrigued by the power of forensic DNA to exonerate.²⁶

One year later, in 1996, the National Institute of Justice (“NIJ”) published the first official compilation of DNA exonerations, listing only 28 exonerations nationwide.²⁷ The authors prefaced the study with commentary from eminent law professors, attorneys, and public officials, including Scheck and Neufeld.²⁸ The collected commentary became “the most public, and perhaps the first, clarion call,” urging that, “[p]ostconviction DNA exonerations provide a remarkable opportunity to reexamine, with greater insight than ever before, the strengths and weaknesses of our criminal justice system and how they bear on the all-important question of factual innocence.”²⁹

It would take nearly another decade before similar “innocence projects” were established in 21 states around the country.³⁰ In 2005, the projects joined to form the Innocence Network, which has grown from 21 projects to 65 projects in

²⁵ See *supra* note 22.

²⁶ See AARONSON, *supra* note 17, at 177-80; ZALMAN, *supra* note 8, at 1489.

²⁷ E. Connors, et al., *Convicted by Juries, Exonerated by Science: Case Studies in the Use of DNA Evidence to Establish Innocence After Trial*, NAT’L INST. OF JUSTICE, DEPT. OF JUSTICE, Pub. No. NCJ 161258 (1996), at pp. xii-xxxi.

²⁸ ZALMAN, *supra* note 8, at 1489.

²⁹ *Id.*; see also Connors, *supra* note 27, at pp. xii-xxxi.

³⁰ Innocence Network, History of the Innocence Network and Network Support Unit, <http://www.innocencenetwork.org/history> (last visited May 1, 2014).

the last nine years and become the engine of the Innocence Movement.³¹ All of this happened long after Johnson had signed the plea agreement in exchange for his life. (ER 6-10)

(b) Innocence in Oregon

Oregon was the last state to join the Innocence Movement when, in April 2014, the Oregon Innocence Project was founded.³² Twenty-one years earlier, at the time of Johnson's plea in May 1993, the DNA statute (ORS 138.692) had yet to be enacted, and the Oregon appellate courts had never had the opportunity to address the admissibility of DNA evidence.³³ Indeed, the 1996 NIJ report did not include a single exoneration from anywhere in the Pacific Northwest.³⁴ Oregon had, at the time of Johnson's plea, seen only one exoneration—that of Santiago Ventura Morales—but the case arose out of debunked forensic evidence and not DNA testing.³⁵

³¹ *Id.*

³² Oregon Innocence Project, Background, <http://www.oregoninnocence.org/background/> (last visited May 1, 2014). OIP's application with the Innocence Network is pending as of the filing of this brief.

³³ *See State v. Futch*, 123 Or App 176, 186, 860 P2d 264 (1993) (decided on September 15, 1993, and finding DNA evidence admissible in Oregon for the first time).

³⁴ Connors, *supra* note 27, at 4 (“One can state with confidence, however, that as of the study's completion, the 28 cases identified represent most of the situations in the country where convicted felons had been released from prison on the basis of postconviction DNA testing.”).

³⁵ *See* National Registry of Exonerations, Santiago Ventura Morales, <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3492>

The closest innocence project—at the University of Washington School of Law in Seattle, Washington—was not created until 1997, four years after Johnson’s plea.³⁶ Since its creation, the impressive group of students and volunteers in Seattle has secured 12 exonerations, an average of one every eighteen months.³⁷

Oregon has, in fact, seen eight exonerations in the state, even without an innocence project.³⁸ But seven of those exonerations came after 1995.³⁹ Oregon released four wrongfully convicted prisoners that year alone.⁴⁰ Most noteworthy among them was John Sosnovske, who, like Johnson, had maintained his innocence but pled no contest to murder to avoid the death penalty.⁴¹

Sosnovske’s plea, despite his innocence, was highlighted for the Senate Judiciary Committee in support of the bill to expand the reach of Oregon’s DNA

(last visited May 1, 2014).

³⁶ University of Washington School of Law, Clinical Programs, Innocence Project Northwest, <http://www.law.washington.edu/clinics/ipnw/> (last visited May 1, 2014).

³⁷ *Id.*

³⁸ See National Registry of Exonerations, Oregon cases, <http://www.law.umich.edu/special/exoneration/Pages/browse.aspx?View={B8342AE7-6520-4A32-8A06-4B326208BAF8}&FilterField1=State&FilterValue1=Oregon> (last visited May 1, 2014).

³⁹ *Id.*

⁴⁰ *Id.*

⁴¹ See National Registry of Exonerations, John Sosnovske, <http://www.law.umich.edu/special/exoneration/Pages/casedetail.aspx?caseid=3654> (last visited May 1, 2014).

statute, ORS 138.692, in 2005.⁴² Andrea Meyer, on behalf of the ACLU, testified, “Sadly, the premise that innocent people do not plead guilty isn’t true. And it’s not true in Oregon.”⁴³

The DNA statute was first enacted four years earlier, in 2001, when the Oregon Legislature recognized the need to assess prisoners’ claims of innocence.⁴⁴ According to the bill’s author, the purpose of codifying the procedure to request new DNA testing was to ensure that “those convicted of serious crimes have access to post-conviction relief if DNA evidence shows their innocence.”⁴⁵ The author noted that the bill was intended to respond to improvements in DNA technology that allow “samples of evidence that were not adequate for analysis [to] now provide ample DNA for testing.”⁴⁶ Procedurally, the author also intended to ease existing “restrictive post-conviction testing guidelines.”⁴⁷

The law was initially written narrowly as a compromise to allay law enforcement concerns that a flood of applicants would overwhelm the system. Relief under the statute was available only to defendants convicted at trial, and it

⁴² See *DNA Innocence Law*, HB 2312, Hearing Before the House Judiciary Subcommittee on Criminal Law (February 17, 2005) (testimony of Andrea Meyer, ACLU).

⁴³ *Id.*

⁴⁴ See ORS 138.692.

⁴⁵ *Post-Conviction Relief: DNA Testing*, SB 667, Hearing Before the Senate Judiciary (March 13, 2001) (Exhibit C, Position Paper of William E. Winner, Ph.D.).

⁴⁶ *Id.*

⁴⁷ *Id.*

included a restrictive identity clause.⁴⁸ As a result, however, the statute was rarely used.

The tight boundaries on the statute were loosened in 2005 to allow expanded access, over objections from district attorneys and law enforcement.⁴⁹ And, in 2013, the legislature amended the statute to include a right to appeal the denial of a motion for testing.

Still, the post-conviction DNA testing procedure is used only infrequently in Oregon. Chief Deputy Defender of the Office of Public Defense Services, Shawn Wiley, testified before the Senate that his office receives “two or three of these cases, at most” out of 1,200 criminal appeals annually.⁵⁰ Indeed, despite witnessing a movement twenty-two years in the making that has led to hundreds of DNA exonerations across the nation, Oregon has yet to exonerate its first wrongly convicted defendant using the advances in DNA science that are able to conclusively identify the perpetrator of a crime. Moreover, *Amicus* has been unable to find a single case in which a defendant has successfully used the DNA testing statute to access postconviction DNA testing.

⁴⁸ ORS 138.692 (requiring an applicant make “a prima facie showing the identity of the perpetrator was at issue in the trial that resulted in the conviction * * *”).

⁴⁹ See *DNA Innocence Law*, HB 2312, Hearing Before the House Judiciary SubCommittee on Criminal Law (February 17, 2005) (testimony of Andrea Meyer, ACLU).

⁵⁰ SB 42, Hearing Before the Senate Judiciary Committee (February 26, 2013) (Testimony of Shawn Wiley, Chief Deputy Defender).

2. Johnson could not have known how DNA science would develop when he agreed to the plea.

The rate of exonerations in the United States has steadily increased over time, in part due to advances in DNA science. Individuals wrongly convicted prior to these advances were in the untenable position of having to make life-altering decisions about whether to plead and forego their freedom without any awareness of the potential impact that DNA evidence would have on the criminal justice system. The pressure was insurmountable in cases where the death penalty was on the table.

Individuals convicted in the pre-DNA era represent a significant portion of the exoneree population.⁵¹ The most significant cause of this early “weighting” of exonerees is the reliance on “DNA waivers” by prosecutors, a practice that began in the early 1990s and is at the heart of Johnson’s appeal. As the number of DNA exonerations grew steadily from 1989 to 1996,⁵² more prosecutors began requiring

⁵¹ The Innocence Project, DNA Exoneree Case Profiles, <http://www.innocenceproject.org/know/> (last visited May 1, 2014). The exoneree with the earliest conviction is James Bain, who was convicted in 1974. *See* The Innocence Project, Profile of James Bain, http://www.innocenceproject.org/Content/James_Bain.php (last visited May 1, 2014). In 1989, Gary Dotson became the first person in the United States to have been exonerated with DNA evidence on post-conviction review. *See* The Innocence Project, Profile of Gary Dotson, http://www.innocenceproject.org/Content/Gary_Dotson.php (last visited May 1, 2014).

⁵² *See* The Innocence Project, DNA Exoneree Case Profiles, DNA Exonerations by Year in the U.S. (graph), <http://www.innocenceproject.org/know/> (last visited May

the inclusion of DNA waivers in plea bargains.⁵³ A 2004 Department of Justice memorandum directed federal prosecutors to require incorporation of these waivers into defendants' plea bargains.⁵⁴ It was not until late 2010 that Attorney General Eric Holder began discouraging prosecutors from including DNA waivers in plea bargains.⁵⁵

As the inclusion of DNA waivers in plea bargains increased, the number of defendants exonerated using DNA testing decreased. The difference in the numbers suggests that a larger number of wrongfully convicted individuals now remain in prison due in large part to the use of DNA waivers in plea bargaining.

The sharp increase in exonerations before the use of waivers, and why they occurred when they did, bears a direct relationship to the history of DNA typing technology. Forensic investigators are now able to discover the identity of a perpetrator of a 20-year-old crime by comparing genetic profiles to aged and degraded DNA evidence, comparisons not possible when the evidence at the scene of the crime was fresh twenty years earlier.

The scientific advancements that have occurred in this field have been revolutionary. When Johnson entered his plea twenty-one years ago, the

1, 2014).

⁵³ See Samuel R. Wiseman, *Waiving Innocence*, 96 Minn. L. Rev. 952 (2012).

⁵⁴ *Id.* at 958 (citing Memorandum from Eric H. Holder, Jr., Attorney Gen., to all Fed. Prosecutors 1 (Nov. 18, 2010), available at <http://www.justice.gov/ag/ag-memo-dna-waivers111810.pdf>).

⁵⁵ *Id.*

rudimentary techniques forensic investigators used to compare DNA samples to a known source bore little resemblance to the exacting DNA matching capabilities of today's forensic scientists.

(a) The First Test: RFLP (Restriction Fragment Length Polymorphism)

DNA profiling was first discovered in 1985 by English geneticist Alec Jeffreys.⁵⁶ Dr. Jeffreys determined that certain regions of DNA, known as “VNTRs”⁵⁷ (short for “variable number of tandem repeats”) have sequences that repeat over and over in succession. Each unique physical location of a gene (or specific sequence of DNA) is called a “locus,” or plural “loci.”⁵⁸ VNTR loci are very similar between closely related humans, but so variable that unrelated individuals are extremely unlikely to have the same VNTRs, enabling Dr. Jeffreys to create the first “human identity tests.”⁵⁹ Dr. Jeffreys’ technique was called “restriction fragment length polymorphism” or “RFLP.”⁶⁰

The first use of RFLP in a criminal homicide investigation occurred in 1986, near Leicestershire, England.⁶¹ The technique was used to match DNA evidence left at two separate homicides to individuals suspected of the crimes. The first

⁵⁶ BUTLER, *supra* note 4, at 4.

⁵⁷ *Id.* at 466.

⁵⁸ *Id.* at 453.

⁵⁹ *Id.* at 5.

⁶⁰ *Id.* at 462.

⁶¹ *Id.* at 5.

suspect to confess to the police was declared innocent by the DNA, which also allowed investigators to rule out more than 4,000 other men from nearby villages. Eventually, the dogged investigators found a match in the DNA profile of a man named Colin Pitchfork.⁶²

Soon after the Pitchfork success, commercial laboratories began to employ RFLP.⁶³ The FBI adopted it in 1988, improving the technique's robustness and sensitivity, and the agency began to amass data on the frequency of various VNTRs in differing segments of the population.

Dr. Jeffreys' original method used a single VNTR probe to label multiple VNTR loci, but the patterns generated could be difficult to interpret when the sample contained DNA from multiple contributors.⁶⁴ A new method was developed, using multiple probes, each of which labeled only a single VNTR locus.⁶⁵ In the late 1980s, two private labs (Cellmark Diagnostics and Lifecodes Corporation) were responsible for conducting most of the RFLP tests.⁶⁶ The lab results, however, could not be compared because each lab used different restriction enzymes to cut the cells into DNA fragments for analysis. When the FBI began RFLP testing in late 1988, it used yet another restriction enzyme, making

⁶² *Id.*

⁶³ *Id.*

⁶⁴ *Id.* at 50.

⁶⁵ *Id.*

⁶⁶ *Id.* at 53.

comparison unrealistic.⁶⁷

RFLP proved to have serious limitations for forensic use. The process was extremely slow, often taking several weeks to complete,⁶⁸ and required a large sample (at least 50 nanograms) containing intact high-molecular-weight DNA molecules.⁶⁹ Samples that were degraded or present only in trace amounts could not be analyzed using RFLP.⁷⁰

Related concerns arose in the late 1980s about the professional quality of the work being performed, the lack of standardized interpretation guidelines, and, most problematic, inaccurate statistical methods used to estimate the probability of a match between two samples.⁷¹

These criticisms of the RFLP method led to judicial decisions limiting the admissibility of DNA evidence. For example, in *People v. Castro*, mentioned above, the Supreme Court in New York excluded DNA evidence due to concerns over data quality and laboratory standards.⁷² In *U.S. v. Yee*, also mentioned above, the federal district court in Ohio heard from twelve expert witnesses, all “heavyweights” in the field of population genetics, who testified to concerns about

⁶⁷ *Id.*

⁶⁸ *Id.* at 49.

⁶⁹ *Id.* at 53.

⁷⁰ *Id.* at 54.

⁷¹ *Id.*

⁷² 540 NYS2d at 144.

the reliability of RFLP testing.⁷³ The *Yee* court ultimately admitted the RFLP test results because, according to the court, “the key to admissibility was the opinion of the scientific community as to the acceptability of the explanatory theory, not the opinion of the court as to the theory's reliability.”⁷⁴

(b) Testing Advances with PCR (Polymerase Chain Reaction) Method

Amidst the sparring over the statistical accuracy of RFLP in the late 1980s and early 1990s, another technique was emerging to replace RFLP. A polymerase chain reaction (“PCR”) mimics the biological process of DNA replication, but confines it to specific DNA sequences of interest.⁷⁵ Scientists can use PCR-based procedures to create an exact copy of a targeted sequence of DNA by adding “primers” to mark the sequence to be replicated, “nucleotides,” which are the building blocks of DNA, and an enzyme called “DNA polymerase,”⁷⁶ which assembles the nucleotides to copy the sequence.⁷⁷ After each cycle of the process, the quantity of the sequence doubles.⁷⁸ By the 32nd cycle, over one billion copies have been created.⁷⁹

The ability to “copy” specific DNA sequences revolutionized the field of

⁷³ 134 FRD at 164.

⁷⁴ *Id.* at 167.

⁷⁵ BUTLER, *supra* note 4, at 458.

⁷⁶ *Id.* at 458.

⁷⁷ *Id.* at 129.

⁷⁸ *Id.*

⁷⁹ *Id.*

DNA study. The earliest PCR-based test, often referred to simply as “DQ alpha,”⁸⁰ eliminated the need for a large starting sample and shortened the process from several weeks to several hours. The immediate result was that investigators could test single hairs and traces of saliva on cigarette butts.⁸¹ PCR-based methods can also test older samples containing degraded DNA.⁸² They became widespread through the end of the 1990s, and were held admissible in Oregon in *State v. Lyons*,⁸³ which was decided in 1996—three years *after* Johnson agreed to the waiver in this case.

Procedures based on PCR technology, however, proved to have shortcomings. The tests were susceptible to contamination because, if the test sample was contaminated with DNA from another source, both sources of DNA could be accidentally copied and lead to an erroneous result.⁸⁴ Also, because early PCR-based tests, like the DQ alpha test, used relatively few sections of DNA, or “alleles,”⁸⁵ more loci had to be compared to obtain the same level of discrimination as RFLP.⁸⁶ About seven percent of the population, on average, has the same DQ

⁸⁰ *Id.* at 446.

⁸¹ National Research Council, *The Evaluation of Forensic DNA Evidence* 70 (1996) (hereinafter “NRC II”).

⁸² *Id.*

⁸³ 324 Or 256, 280, 924 P2d 804 (1996) (holding that the DQ alpha test met the standard for admissibility in Oregon state courts).

⁸⁴ BUTLER, *supra* note 4, at 71.

⁸⁵ *Id.* at 440.

⁸⁶ *Id.*

alpha genotype.⁸⁷ Genotype testing at this low level of discrimination is similar to blood group testing in that it could exclude an individual from the group of possible suspects, but could not positively identify the source of a sample within the group.⁸⁸ Indeed, the prosecution in Johnson's case relied upon DQ alpha testing even though the lab reported that the result (DQ α type 4,4), in fact, "occurs in 8.9% of the African American, 6.8% of the Caucasian, and 14.2% of the Hispanic population." (ER 24)

In response to the need for greater discrimination, a test commonly referred to as the PolyMarker was developed, which tested five additional loci.⁸⁹ But, even with that increased sensitivity, the risk of a coincidental match between unrelated individuals was 1 in 10,000.⁹⁰ The DQ alpha test and the PolyMarker test had fallen out of favor by the early 2000s.

(c) Today's Test is the STR ("Short Tandem Repeats") Method

Today, the universally used method of DNA testing employs a process known as "short tandem repeats," or "STR," typing.⁹¹ This method uses highly polymorphic regions that have short repeated sequences of DNA called

⁸⁷ NRC II, *supra* note 81, at 72.

⁸⁸ BUTLER, *supra* note 4, at 44.

⁸⁹ *Id.* at 57.

⁹⁰ *Id.*

⁹¹ *Id.* at 69.

“microsatellites.”⁹² These “microsatellites” are significantly smaller than the sequences used in older methods of testing, making STR typing more amenable to PCR amplification by allowing for even smaller samples to be tested.⁹³

Arguably the most important advancement made possible by STR typing is the ability to acquire and test DNA from incredibly minute samples of biological material, such as trace amounts of skin cells, saliva, and sweat, which was not possible under previous methods of testing.⁹⁴ Today, practically any item handled or used by the perpetrator of a crime can be subjected to DNA analysis, including weapons, hats, bandanas, masks, eyeglasses, facial tissues, toothpicks, cigarettes, tape, ligatures, bottles, cans, glasses, swabs of bite marks, fingernail clippings or scrapings, and even half-eaten food.⁹⁵ The advances in DNA testing means that a DNA profile can now be obtained by testing sweat and skin cells invisible to the naked eye that are left behind on clothes worn by the assailant, weapons the assailant held, or clothes worn by the victim when touched by the assailant.⁹⁶

In Johnson’s case, the State’s investigators apparently only used the DQ alpha test, and only tested four swabs taken from the victim. (ER 21-24) The

⁹² *Id.* at 60.

⁹³ National Institute of Justice, *The Future of Forensic DNA Testing: Predictions of the Research and Development Working Group* 18 (2000).

⁹⁴ National Institute of Justice, *DNA for the Defense* Bar 145 (2012).

⁹⁵ *Id.* (citing National Institute of Justice, U.S. Department of Justice, *Using DNA to Solve Cold Cases: Special Report*, Pub. NCJ 194197 (July 2002)).

⁹⁶ *Id.*

State also collected a wealth of other evidence from the scene of the crime, but did not conduct any DNA tests on this other evidence. As discussed in more detail below, if the evidence did not have enough potential DNA-containing material to make a DQ alpha test possible, there is still a very high likelihood that the evidence would be enough to generate results from an STR test.

(d) Other Helpful Advances

Although STR testing is the current standard for forensic DNA testing, mitochondrial DNA testing and Y-STR DNA testing have also been used more frequently in recent years.

(i) Mitochondrial DNA Sequencing

At the same time that STR typing was gaining traction, a different technology known as mitochondrial DNA (mtDNA) sequencing was being developed to enable testing of a wider variety of biological materials, such as bones, hair, and teeth.⁹⁷ Often the only biological sources left from a long-deceased individual, these hard materials may contain very small amounts of nuclear DNA (for STR testing), but hundreds or even thousands of copies of mtDNA.⁹⁸ Mitochondrial DNA sequencing allows for a higher probability of obtaining a DNA typing result in cases where the evidence is very old or badly

⁹⁷ BUTLER, *supra* note 4, at 64–65.

⁹⁸ *Id.* at 375.

degraded.⁹⁹

Mitochondrial DNA is a test of exclusion, rather than one of identification.¹⁰⁰ Human mtDNA is inherited only from one's mother because sperm cells contribute only nuclear DNA during fertilization.¹⁰¹ Thus, barring mutation, a mother, her children, and all their maternal relatives will have identical mtDNA sequences.¹⁰² The advantage of mtDNA testing is that a single maternal relative, even distantly related, can be compared with a forensic sample to confirm if the donor of the sample is related.¹⁰³ The disadvantage is that mtDNA is not a unique identifier because the donor, his siblings, and all his maternal relatives will share the same mtDNA type.¹⁰⁴

(ii) Y-chromosome DNA testing

Y-chromosome DNA testing is valuable in forensic investigations because it can distinguish between male and female donors. The non-recombining portion of

⁹⁹ *Id.*

¹⁰⁰ See, e.g., *Vaughn v. State*, 646 SE2d 212, 214 (Ga 2007) (observing that "mtDNA analysis is more applicable for exclusionary, rather than identification, purposes"); *Wagner v. State*, 864 A2d 1037, 1045 (Md App 2005) ("mtDNA analysis provides significantly less ability to discriminate among possible donors than does nuclear DNA analysis and has been said to be a test more of exclusion than of identification."); *State v. Scott*, 33 SW3d 746, 756 (Tenn 2000) ("Because it is not possible to achieve the extremely high level of exclusion provided by nuclear DNA, mtDNA has been said to be a test more of exclusion than one of identification.").

¹⁰¹ BUTLER, *supra* note 4, at 378.

¹⁰² *Id.*

¹⁰³ *Id.*

¹⁰⁴ *Id.*

the Y chromosome, or NRY, is passed down from father to son with each successive generation remaining the same unless a mutation occurs.¹⁰⁵ Y-STR DNA typing allows a crime lab to isolate male DNA that might have been overwhelmed by the presence of female DNA or might have gone undetected altogether.¹⁰⁶ In cases where male and female bodily fluids are mixed, and the concentration of the female donor's DNA is very high compared with the male donor's DNA, standard STR analysis may fail to detect the DNA profile of the male donor.¹⁰⁷ If Y-STR analysis is used instead, the DNA from the female contributor will be ignored and a genetic profile of the male DNA can be obtained.¹⁰⁸ This technique can be useful for analyzing fingernail scrapings from a female victim who has scratched her male assailant, sexual assaults involving saliva/saliva and saliva/vaginal secretion mixtures, and cases in which the interval between the incident and the collection of intimate samples from the victim is greater than two days.¹⁰⁹

- B. The right to DNA testing under the statute should be broadly construed to enhance the truth seeking function of the criminal justice system.**
- 1. History has shown the importance of testing * * * and then re-testing.**

¹⁰⁵ *Id.* at 364.

¹⁰⁶ National Institute of Justice, *DNA for the Defense Bar* 14 (2012).

¹⁰⁷ BUTLER, *supra* note 4, at 364.

¹⁰⁸ National Institute of Justice, *DNA for the Defense Bar* 14 (2012).

¹⁰⁹ *Id.*

As discussed above, testing prior to the STR-era was questionable.

Exonerations in other states illustrate why new DNA tests are essential to prisoners who were convicted in the pre-STR era. For example, in *Commonwealth v. Cowans*, Stephan Cowans was exonerated after evidence was re-tested using new DNA technology.¹¹⁰ Cowans was convicted in Massachusetts in 1997 of shooting a police officer on the basis of eyewitness identification by the surviving officer and fingerprint evidence found on a mug from which the assailant drank after hiding in a nearby house after the shooting. At that time, clothing and weapons were typically not tested for sweat or skin cells, but only for blood. Seven years later, in 2004, STR typing was performed on saliva from the mug and on sweat and skin cells found on the perpetrator's sweatshirt and baseball cap left at the scene of the crime.¹¹¹ On all three items, the testing revealed the same STR DNA profile, which did not match Cowans' profile.¹¹² The re-testing conclusively excluded Cowans as the source and led officials to review the earlier fingerprint analyses, which were discovered to be erroneous.¹¹³ Cowans was released from prison that same year upon a joint motion by the prosecution and defense.¹¹⁴

As Cowans' case proves, until STR typing is attempted, there is no way to

¹¹⁰ *Com. v. Cowans*, 756 NE2d 622 (Mass App Ct 2001); National Institute of Justice, *DNA for the Defense Bar* at 149.

¹¹¹ *Id.*

¹¹² *Id.*

¹¹³ *Id.*

¹¹⁴ *Id.*

know if old evidence contains sweat or skin cells left behind by the perpetrator. As early as 1999, the NIJ endorsed the re-evaluation of evidence, noting the importance of re-analyzing “samples that were unsuitable for testing with previous techniques but may give conclusive results with currently available DNA tests (e.g., very small blood or semen stains, hair shafts).”¹¹⁵

Those conclusive results not only have the potential to increase the accuracy of convictions, they can also lead to the arrest of the true perpetrator of the crime. In 1998, the FBI officially launched the U.S. National DNA Index System (NDIS) database of the Combined DNA Index System (CODIS).¹¹⁶ Containing millions of STR profiles, NDIS links all 50 states in the U.S. with the capability to search criminal DNA profiles. Unimaginable under earlier methods of testing, this new database gives law enforcement the potential to test crime scene evidence and match the profile to an alternate suspect in the database or evidence from another unsolved crime. The value of testing in this new era of increasing accuracy should not be underestimated.

2. The original testing done in Johnson’s case was based on questionable methods.

¹¹⁵ National Institute of Justice, *Postconviction DNA Testing: Recommendations for Handling Requests, Report From the National Commission on the Future of DNA Evidence*, Pub. NCJ 177626 (September 1999), at 23.

¹¹⁶ BUTLER, *supra* note 4, at 259.

Johnson waived his rights under the plea agreement based on testing done using unreliable and unsound methods. Johnson could not have foreseen the advances in testing that could one day challenge those prior test results, asserted by the State to be conclusive. Such a waiver cannot be deemed “knowing.”

(a) The Cigarette Butts

In response to Johnson’s motion for DNA testing, the State relied upon test results from 1993 indicating that “DNA from one of the cigarette butts from the ashtrays was ‘consistent with having come from Stressla Johnson.’” (ER 24) The DNA testing results from 1993 came from the now-rebuked DQ alpha test. (ER 24) The genotype detected in the DNA evidence, which Johnson shares, is also shared by 8.9% of all African Americans. (ER 24) As explained in above, DQ alpha tests are no longer used and have been replaced by STR tests. The fact that a DQ alpha test was performed on the DNA from the cigarette butt in the first place confirms that the lab was able to amplify the DNA sample using PCR. It is possible, therefore, that PCR could be performed again on the same cigarette butt, but this time using STR analysis to obtain far more discriminatory results.

As the NIJ guidelines for handling postconviction DNA testing requests point out, “It is important to understand what the previous test results really mean and whether those results could have been obtained if another individual other than

the alleged donor was the source of the sample.”¹¹⁷ For instance, the NIJ guidelines continue, “ABO blood testing and/or *DQα* PCR test results alone are not sufficiently discriminating such that a falsely accused individual would necessarily be excluded with these tests.”¹¹⁸

The failures of DQ alpha testing were illustrated in the cases of Josiah Sutton from Texas and Jerry Watkins from Indiana. In Sutton’s 1998 trial for rape, a crime lab employee testified that “the DNA found on the victim was an exact match with Sutton, meaning that only about 1 person in 694,000 could have deposited the material.”¹¹⁹ After examining the original DNA test strips, University of California criminology professor William Thompson concluded that the lab’s original report was wrong. The evidence was retested and the results produced conclusive, exculpatory evidence.

In Watkins’ case, his trial for murder took place in 1986 during the pre-DNA era.¹²⁰ In 1992, Watkins filed a petition for post-conviction relief seeking DNA testing. DQ alpha testing was performed in 1993, and the results indicated that he

¹¹⁷ National Institute of Justice, *Postconviction DNA Testing: Recommendations for Handling Requests* 14 (1999), available at <http://www.dna.gov/postconviction>.

¹¹⁸ *Id.* (emphasis added).

¹¹⁹ The Innocence Project, Case Profile of Josiah Sutton, http://www.innocenceproject.org/Content/Josiah_Sutton.php (last visited May 1, 2014).

¹²⁰ The Innocence Project, Case Profile of Jerry Watkins, http://www.innocenceproject.org/Content/Jerry_Watkins.php (last visited May 1, 2014).

could not have been the sole donor of the genetic material found on the vaginal swabs. The judge, however, ruled that the test results were not sufficient evidence for a new trial. Yet in 2000, after Watkins was granted a writ of habeas corpus, STR testing was performed at the request of the prosecution. The STR test results conclusively excluded Watkins. Furthermore, the results were entered into the Indiana State Police database and subsequently implicated another man. These are merely two examples that demonstrate the importance of retesting evidence using new methods, especially if the original method used was a DQ alpha test.

The DQ alpha test performed on the cigarette butts in this case can—and should—be retested using the advanced DNA typing methods that can identify, rather than simply exclude, the perpetrator.

(b) “No Semen” Fallacy

The State argued in response to Johnson’s motion for testing that “no semen was identified on the vaginal or oral swabs.” This “no semen fallacy” has been discovered in other cases when testing has revealed no presence of semen and prosecutors conclude that the perpetrator either did not ejaculate or wore a condom when, in fact, ejaculation did occur.

It is not uncommon for the re-testing of evidence to detect semen or sperm that was undetectable or overlooked during the original investigation. Both the scientific literature and DNA exoneration cases have confirmed the importance of

reconsidering original crime scene evidence and not relying on previous negative findings that suggested there was no biological evidence to test.¹²¹ It is now known that early technologies used to detect the presence of semen, such as the “presumptive acid phosphatase” test, frequently produced false negatives.¹²² Modern tests, such as the “prostate-specific antigen” test, are far more discerning. The prostate-specific antigen (PSA) is “a glycoprotein produced by the prostate gland that has been well characterized and validated in the forensic science community as a marker for the presence of seminal fluid.”¹²³

In a research study published in 2004, scientists claimed to have developed a new test for detecting positive PSA levels that was at least 10 times more sensitive than the previously-used presumptive acid phosphatase test.¹²⁴ Almost 17% of the samples tested gave positive results for PSA levels where previous testing of those same samples had given negative results and had shown no visible spermatozoa.

Even if it is true that the perpetrator of the sexual assault did not ejaculate, male DNA could still be present in skin cells or from pre-ejaculate during sexual

¹²¹ National Institute of Justice, *DNA for the Defense Bar* at 150.

¹²² *Id.*

¹²³ Bill O. Gartside, et al., *Estimation of Prostate-Specific Antigen (PSA) Extraction Efficiency from Forensic Samples Using the Seratec® PSA Semiquantitative Membrane Test*, 5 FORENSIC SCI. COMMS. 2 (2003), available at <http://www.fbi.gov/about-us/lab/forensic-science-communications/fsc/april2003/gartside.htm/>.

¹²⁴ See S.J. Denison, et al., *Positive Prostate-Specific Antigen (PSA) Results in Semen-Free Samples*, 37 CAN. SOC. FORENSIC SCI. J. 197, 200 (2004).

contact, which can contain low levels of semen or sperm cells.¹²⁵ Additional tests for the presence of male DNA are available today, such as “quantitation kits” that specifically target human male DNA, which can provide definitive answers in cases where swabs were originally used to check for male DNA and returned negative results.

Michael Mercer was exonerated of rape based on such retesting.¹²⁶ Mercer was convicted of rape in 1992 and during trial, testimony was admitted that vaginal swabs taken from the victim had tested negative for sperm. Mercer’s motion for postconviction DNA testing was denied because, according to the court, there was no semen from the perpetrator so additional testing would be pointless.¹²⁷

Unbeknownst to Mercer, however, the government sent the rape kit swabs to a private DNA laboratory for testing in 2003 as part of a “backlog project” to solve open cases through the DNA databank. Despite the original “negative” test for sperm in 1992, the lab was able to obtain a full STR DNA profile from spermatozoa detected on the vaginal swabs. When the government entered this profile into the databank, it returned a “hit” matching a convicted serial rapist. Mercer was exonerated and released the same year.¹²⁸

¹²⁵ National Institute of Justice, *DNA for the Defense Bar* at 150.

¹²⁶ See *People v. Mercer*, 624 NYS2d 804 (App Div 1995); National Institute of Justice, *DNA for the Defense Bar* at 150.

¹²⁷ National Institute of Justice, *DNA for the Defense Bar* at 150.

¹²⁸ *Id.*; see also Robert D. McFadden, *DNA Clears Rape Convict After 12 Years*,

Similarly, in 2005, Larry Peterson was exonerated of his 1989 rape and murder conviction in New Jersey after a postconviction DNA test showed that sperm found on the vaginal and oral swabs from the victim could not have come from Peterson and in fact matched the DNA profile of another man.¹²⁹ The state's forensic expert, Gail Tighe, had examined these same vaginal and oral swabs before Peterson's original trial in 1989, but had failed to detect any semen or spermatozoa.¹³⁰ Police found semen on the outside of the victim's pants, blood under her fingernails, and various hair samples on her body, but ultimately the state did not present any evidence at trial concerning the source of the semen or blood, DNA testing or otherwise. Tighe's testimony had instead focused on seven hairs found at the crime scene, expressing the opinion that they had the same characteristics as the Peterson's hair. Since this testimony was one of the primary components of the state's self-described "overwhelming evidence" of the Peterson's guilt, the court (on review of the initial denial of Peterson's motion for DNA testing) reasoned that if a potential DNA test showed that he was not the

N.Y. TIMES (May 20, 2003), *available at* <http://www.nytimes.com/2003/05/20/nyregion/dna-clears-rape-convict-after-12-years.html>.

¹²⁹ See *State v. Peterson*, 836 A2d 821 (NJ Super Ct App Div 2003) (reversing the order denying Peterson's motion for DNA testing and remanding for entry of an order for DNA testing in accordance with N.J.S.A. 2A:84A-32a(e)); see also Laura Mansnerus, *Citing DNA, Court Annuls Murder Conviction from 1989*, N.Y. Times (July 30, 2005), *available at* <http://www.nytimes.com/2005/07/30/nyregion/30dna.html>.

¹³⁰ *Peterson*, 836 A2d at 824.

source of the hair samples, “the evidence of defendant’s guilt could appear a lot less overwhelming than it did at the time of trial.” In its closing remarks after deciding to reverse the trial court’s denial of Peterson’s motion for testing, the court further pointed out that if DNA test results were determined to be not only exculpatory of a defendant, but also inculpatory of another person, that would be “evidence of the sort that would probably change the jury’s verdict if a new trial were granted.”

The vaginal and oral swabs in Johnson’s case should be retested for the presence of fluids and skin cells, which may have been missed using the older, unreliable methods of testing.

(c) Hair and Fingernail Scrapings

The State points to the presence of hairs found in the victim’s hands and fingernail scrapings, which, according to the State, could not be tested at the time to identify the assailant. As discussed above, with STR testing, experts are now able to test hair and fingernail scrapings for the presence of DNA. In the Peterson case, postconviction DNA tests proved that hairs that were microscopically matched to Peterson actually belonged to the victim. The DNA tests also found the presence of DNA from an unknown male (not Peterson) under the victim’s fingernails.

The hair and nail scrapings should be tested based on the advances in

science not available at the time of the crime.

* * *

The most remarkable difference between the 1987-era investigation into the Wilder and Johnson strangulations in this case and the capability of forensic investigators today is that today, twenty-seven years later, even trace amounts of DNA left in passing by the killer on something as smooth and impermeable as the telephone cords can pinpoint the identity of the man whose hands so long ago wrapped those cords around the necks of his victims. Touch DNA can produce a full profile out of a few dead skin cells or drop of fluid exuded from the killer's body.¹³¹ A cord yielding that minute sample may have been in a warehouse, unrefrigerated and unprotected, subject to seasonal variances in heat and moisture, yet it may point directly to a killer previously unknown.

If there is a lingering presence of the killer's DNA, today's forensic methods will provide actual certainty. Quick and inexpensive, the methods now available provide a window to events that investigators and scientists of that day could not have foreseen.

¹³¹ See David H. Kaye, *Disagreement on What to Call DNA Profiling with Really Small Samples Confuses Courts*, Double Helix Law Legal Blog (July 16, 2010, 10:09 AM), <http://www.personal.psu.edu/dhk3/blogs/DoubleHelixLaw/2010/07/scientists-inability-to-agree-on-what-to-call-dna-profiling-with-really-small-samples-confuses-court.html> (adapted from the discussion in David H. Kaye, David E. Bernstein & Jennifer L. Mnookin, *THE NEW WIGMORE, A TREATISE ON EVIDENCE: EXPERT EVIDENCE* (2d ed. 2011)).

Johnson, like so many other defendants of his era, signed a waiver so broad the State now asserts it extinguishes the light of science. The State is wrong.

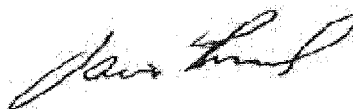
V. CONCLUSION

The Oregon Legislature has, by statute, recognized the value that DNA testing adds to the accuracy of our criminal justice system. Permitting broad access to DNA testing fulfills the purpose of the statute and furthers the truth seeking role of Oregon courts. *Amicus* respectfully requests the court rule that waivers made before the statute was enacted and based on questionable science are not “knowing” and, therefore, not enforceable.

DATED this 1st day of May, 2014.

Respectfully submitted,

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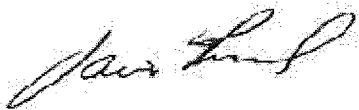
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I further certify that the size of the type in this brief is not smaller than 14 point for both the text of the brief and footnotes as required by ORAP 5.05(4)(f).

By 
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PROOF OF SERVICE

I certify that on May 1, 2014, I directed the original BRIEF OF *AMICUS CURIAE* OREGON INNOCENCE PROJECT IN SUPPORT OF APPELLANT JOHNSON to be electronically filed with the Appellate Court Administrator, Appellate Records Section and the following people by using the electronic filing system:

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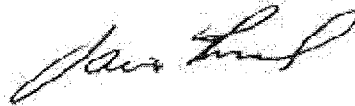
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