FORENSIC JUSTICE PROJECT
the science of justice

Senate Judiciary Hearing on Senate Bill 1515-1

Written Testimony of Janis C. Puracal, Executive Director, Forensic Justice Project

February 4, 2026

Chair Prozanski, Vice-Chair Thatcher, and members of the Committee,

Thank you for the opportunity to present testimony on Senate Bill 1515-1, which (1) makes critical changes to the wrongful conviction compensation statute (ORS 30.657) and (2) establishes a procedure by which a petitioner can file for post-conviction relief based on changes in scientific understanding related to three forensic disciplines (hair microscopy, bite mark analysis and comparison, and comparative bullet lead analysis). I offer the following testimony in support of the bill based on my work with incarcerated individuals who are fighting wrongful conviction based on faulty and/or misleading forensic evidence.

A. Background of the Forensic Justice Project.

The use of faulty and misleading forensic evidence is one of the leading causes of wrongful conviction. The Forensic Justice Project ("FJP") is a nonprofit organization that was created in Oregon to challenge the use of faulty and misleading forensic evidence. We work at all stages of the criminal process from pre-trial through post-conviction. Our mission is to prevent wrongful convictions before they happen and correct them after they happen. To that end, we focus on getting good science into the courtroom and bad science out of the courtroom.

B. Faulty and misleading forensics are a leading cause of wrongful conviction.

As of February 4, 2026, there have been more than 3,775 exonerations around the country, which accounts for more than 35,171 years lost in our prison system.[1] Approximately twenty nine percent of the exonerees nationwide were wrongly convicted in cases that involved faulty or misleading forensic evidence.[2] Forty percent of the 43 exonerations in Oregon involved faulty or misleading forensic evidence.[3]

Finality in the justice system is a valid goal only if we have the right person. Exonerations across the country teach us that finality cannot override accuracy.
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[1] The National Registry of Exonerations, https://exonerationregistry.org/.
[2] *Id.*
[3] *Id.*

C. The Concepts in SB 1515-1 have been the subject of extensive stakeholder discussion and negotiation.

As mentioned above, SB 1515-1 proposes to (1) fix the wrongful conviction compensation program and (2) create a pathway back into court for individuals who were wrongfully convicted based on one of three forensic disciplines (hair microscopy, bitemark analysis and comparison, and comparative bullet lead analysis) for which there has been a change in the science. The bill is the product of extensive stakeholder engagement and negotiation.

1. Wrongful Conviction Compensation Concept

In 2022, the Oregon legislature passed the Oregon Justice for Exonerees Act, creating the statutory framework for compensation for individuals who had been wrongfully convicted. Unfortunately, there were problems in the implementation of the Act soon after it passed, with the Oregon Department of Justice opposing nearly every compensation petition filed.

In 2025, FJP worked with ODOJ, under its new Attorney General, to negotiate a bill (SB 1007 (2025)) that would fix the compensation program. The Senate Judiciary Committee voted unanimously in support of SB 1007, but the bill did not pass Ways and Means due to a fiscal.

In 2026, FJP and ODOJ worked collaboratively to pare down the provisions from SB 1007 to reduce the fiscal impact. SB 1515-1 is the product of those extensive negotiations.

2. Change in Science Concept

In 2023, the Senate Judiciary Committee voted unanimously in support of SB 554A, a bill that would allow individuals convicted on the basis of now-discredited science to file a claim for post-conviction relief under the existing post-conviction relief framework. The bill, in essence, created a procedural path by waiving the procedural bars to post-conviction relief and created a substantive right to challenge the use of discredited science.

The bill, however, did not pass Ways and Means because of the large fiscal ODOJ placed on the bill. The fiscal was due, in part, to the amount of litigation that would come from having to litigate, in each individual case, whether the science had changed.

In 2026, FJP worked with ODOJ to pare down the concept from SB 554A in a way that would reduce the fiscal. FJP and ODOJ agreed that one way of reducing the fiscal would be to focus on just a few forensic disciplines that had been soundly discredited so the courts would not need to make an individualized determination of whether the science had changed.

FJP and ODOJ agreed to focus on the three disciplines in SB 1515-1 because those disciplines, as defined in the bill, are largely no longer used in Oregon because they have been the subject of extensive and in-depth critique by national agencies such as the FBI, the National Academy of Sciences, and the National Institute of Standards and Technology.

D. Experts agree that certain forensic methods are not scientifically valid.

The National Academy of Sciences has recognized that the advent of DNA testing has led to the exoneration of hundreds of innocent people and continues to uncover a "disturbing number of wrongful convictions—some for capital crimes—and expos[e] serious limitations in some of the forensic science approaches commonly used in the United States."[4]

1. Hair Microscopy

In 2015, the FBI—the agency responsible for developing the method of hair microscopy (*i.e.*, using a high-powered microscope to view hair from a crime scene and compare it to a known hair sample from a suspect)—agreed to review nearly 3,000 past cases involving hair microscopy to determine whether the lab reports or testimony exceeded the limitations of valid science.[5] According to the FBI, "there aren't studies that show how many people have identical-looking hair fibers" and thus, incorrect or inflated testimony on microscopic hair analysis can mislead a judge or a jury.[6] As one commentator put it, microscopic hair analysis "is virtually worthless as a method of identifying someone. It can only safely be used to ***rule out*** a suspect as the source of crime-scene materials or in combination with the vastly more accurate technique of DNA testing."[7]

Independent scientists agree. In 2009, the National Academy of Sciences released a ground-breaking report (the "2009 NAS Report") on the state of forensics in the United States.[8] On hair microscopy, the 2009 NAS Report "found no scientific support for the use of hair comparisons for individualization in the absence of nuclear DNA."[9] In 2016, the President's Council of Advisors on Science and Technology under President Obama

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[4] NAT'L RESEARCH COUNCIL, STRENGTHENING FORENSIC SCIENCE IN THE UNITED STATES: A PATH FORWARD 42 (2009), https://www.ncjrs.gov/pdffiles1/nij/grants/228091.pdf [hereinafter 2009 NAS Report].

[5] FBI Press Release, *FBI Testimony on Microscopic Hair Analysis Contained Errors in At Least 90 Percent of Cases in Ongoing Review* (April 20, 2015), https://www.fbi.gov/news/press-releases/fbi-testimony-on-microscopic-hair-analysis-contained-errors-in-at-least-90-percent-of-cases-in-ongoing-review.

[6] Letter from James Comey to Governors, dated February 26, 2016, https://www.fbi.gov/file-repository/comey-letter-to-governors.pdf/view.

[7] Ed Pilkington, *Thirty years in jail for a single hair: the FBI's 'mass disaster' of false conviction*, THE GUARDIAN (Apr. 21, 2015) (emphasis added), https://www.theguardian.com/us-news/2015/apr/21/fbi-jail-hair-mass-disaster-false-conviction.

[8] 2009 NAS Report, *supra*, note 4.

[9] *Id.* at 161.

issued its own landmark report (the "PCAST Report") in which it reviewed documents on hair microscopy from the United States Department of Justice and concluded that the documents "do not provide a scientific basis for concluding that microscopic hair examination is a valid and reliable process."[10] The PCAST Report recognized that errors in pattern-matching methods, like hair microscopy, arise, in part, because "in certain settings, humans (1) may tend naturally to focus on similarities between samples and discount differences and (2) may also be influenced by extraneous information and external pressures about a case."[11]

Prior to the FBI's review of nearly 3,000 hair cases, which engaged stakeholders from the United States Department of Justice, the Innocence Project (based in New York), and the National Association of Criminal Defense Attorneys, the FBI published a statement of the standards to be used for the review of cases.[12] The FBI defined the erroneous report and testimony language as Type 1, Type 2, and Type 3 errors.[13] SB 1515-1, Section 6, subsection 8(e)(A)(i) through (iii) follows the FBI's Type 1, Type 2, and Type 3 error types to permit a similar review of Oregon cases.

The FBI found erroneous report and testimony language was used in more than 90 percent of the cases reviewed,[14] and the U.S. Department of Justice agreed not to raise procedural objections, such as statutes of limitations and procedural default claims, in response to motions for a new, fair trial in light of faulty evidence.[15] SB 1515-1 creates a similar framework to allow individuals back into court, despite the procedural bars that currently exist under Oregon's post-conviction framework.

The FBI also retained an independent company to conduct a full root cause analysis.[16] The FBI root cause report provides an in-depth review of the problematic testimony that

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[10] *See also* PRESIDENT'S COUNCIL OF ADVISORS ON SCI. AND TECH., FORENSIC SCIENCE IN CRIMINAL COURTS: ENSURING SCIENTIFIC VALIDITY OF FEATURE-COMPARISON METHODS 120 (2016), https://obamawhitehouse.archives.gov/sites/default/files/microsites/ostp/PCAST/pcast_forensic_science_report_final.pdf [hereinafter PCAST Report].

[11] *Id.* at 49.

[12] FBI Standard for Hair Review (Exhibit 1). The FBI wrote that the only possible probative value of hair microscopy is that it may indicate, at the broad class level, that a contributor of a known sample ***could*** be included in a pool of people of unknown size, as a ***possible*** source of the hair evidence at the scene or that the contributor of a known sample could be excluded as a possible source of the hair evidence based on the known sample provided.

[13] *Id.*

[14] FBI Press Release, *FBI Testimony on Microscopic Hair Analysis Contained Errors in At Least 90 Percent of Cases in Ongoing Review* (April 20, 2015), https://www.fbi.gov/news/press-releases/fbi-testimony-on-microscopic-hair-analysis-contained-errors-in-at-least-90-percent-of-cases-in-ongoing-review.

[15] *Id.*

[16] ABS Group, *Root and Cultural Cause Analysis of Report and Testimony Errors by FBI MHCA Examiners* (August 2018), https://vault.fbi.gov/root-cause-analysis-of-microscopic-hair-comparison-

led to injustice. The root cause report also discusses in detail how the FBI conducted its hair review, how it interpreted the Type 1, Type 2, and Type 3 error categories, and what types of problematic report language and testimony fell into each error category.

2. Bitemark Analysis and Comparison

Bitemark analysis and comparison has been the subject of several reports by federal agencies such as the National Academy of Sciences, the National Institute of Standards and Technology (NIST), and PCAST.[17] Most recently, in 2023, NIST published a comprehensive report describing the lack of scientific foundation for bitemark analysis and comparison.[18]

The first "Key Takeaway" from the NIST Report is that, "Forensic bitemark analysis lacks a sufficient scientific foundation because the three key premises of the field are not supported" by scientific data.[19] First, "human anterior dental patterns have not been shown to be unique at the individual level."[20] Second, "those patterns are not accurately transferred to human skin consistently."[21] And "[t]hird, it has not been shown that defining characteristics of that pattern can be accurately analyzed to exclude or not exclude individuals as the source of a bitemark."[22] In other words, the Report finds there is no scientific foundation for identifying a set of marks as a human bitemark and no scientific foundation for matching a suspect's teeth to a bitemark in human skin.

3. Comparative Bullet Lead Analysis

Comparative bullet lead analysis (CBLA) was used, prior to 2005, to compare lead bullets from a crime scene to lead bullets found in the possession of a suspect to attempt to associate the bullets as having come from the same manufactured batch. Experts would testify to the association in court, leading jurors to believe that the bullet from the crime scene could be associated with the defendant.

As the FBI explained, "[b]ullet lead examinations use analytical chemistry to determine the amounts of trace elements (such as copper, arsenic, antimony, tin, etc.) found within bullets. The result of that analysis allows crime-scene bullets to be compared to bullets associated with a suspect. Since the early 1980's the FBI Laboratory has conducted bullet lead examinations in approximately 2,500 cases submitted by federal, state, local, and

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analysis/Root%20Cause%20Analysis%20of%20Microscopic%20Hair%20Comparison%20Analysis%20Part%2001%20%28Final%29/view.

[17] NAT'L INSTITUTE OF STANDARDS AND TECHNOLOGY, BITEMARK ANALYSIS: A NIST SCIENTIFIC FOUNDATION REVIEW (2023), https://nvlpubs.nist.gov/nistpubs/ir/2023/NIST.IR.8352.pdf [hereinafter "NIST Bitemark Report"]; 2009 NAS Report at 173–76; PCAST Report at 83–87.

[18] NIST Bitemark Report, *supra* note 17.

[19] *Id.* at 11.

[20] *Id.*

[21] *Id.*

[22] *Id.*

foreign law enforcement agencies. In less than 20% of those cases was the result introduced into evidence at trial."[23]

In 2005, the FBI announced that "after extensive study and consideration, it will no longer conduct the examination of bullet lead."[24] The FBI's announcement was based on a detailed report by the National Academy of Sciences, published in 2004, as well as the FBI's own exhaustive 14-month review process.[25] The NAS report found that, although the method is appropriate to analyze the elemental composition of bullets, the interpretation of those results (suggesting an association between bullets from the same manufactured batch) is not scientifically reliable.

I understand that the Oregon State Police lab did not conduct CBLA examinations. Nonetheless, prosecutors in Oregon may have relied on the technique using outside experts to do so. For example, Exoneree Scott Cannon was wrongfully convicted in 2000 in Polk County based on CBLA opinions from an expert at Oregon State University.[26] Mr. Cannon was exonerated in 2009, and, in January 2026, Mr. Cannon became the second exoneree in Oregon to receive a certificate of innocence. He also received full compensation for his wrongful conviction under ORS 30.657.

E. SB 1515-1 is critical to give courts the ability to review cases in which the science has changed.

We at FJP are reviewing multiple cases that involve these now-discredited forensic methods, such as hair microscopy and bite mark comparison, among others. Some of our clients have been incarcerated in Oregon's prisons since the 1980s.

These are the very types of cases where SB 1515-1 is critical. As it stands, a person convicted in Oregon on the basis of unreliable forensic evidence may have few opportunities to get back into court to obtain relief. In many of these cases, procedural rules establish strict time bars that may have expired before state actors recognized flaws in the forensic methodology.

In addition, although Oregon has a post-conviction DNA testing statute that may open the door to a new trial,[27] evidence in some cases may no longer be available for testing. Indeed, many of the hair microscopy and bitemark cases originated before 2009 when Oregon first enacted a law to preserve biological evidence for DNA testing.[28]

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[23] FBI Press Release, *FBI Laboratory Announces Discontinuation of Bullet Lead Examinations* (September 1, 2005), https://archives.fbi.gov/archives/news/pressrel/press-releases/fbi-laboratory-announces-discontinuation-of-bullet-lead-examinations.
[24] *Id.*
[25] *See* NAT'L RESEARCH COUNCIL, FORENSIC ANALYSIS: WEIGHING BULLET LEAD ANALYSIS (2004), https://www.nationalacademies.org/read/10924/chapter/1
[26] National Registry of Exonerations, Scott Cannon, https://exonerationregistry.org/cases/10319.
[27] ORS 138.688, *et seq.*
[28] ORS 133.707.

Under SB 1515-1, a petitioner can file a claim as part of the existing post-conviction process to prove (1) that the petitioner was convicted on the basis of one of the discredited forensic disciplines as defined in the bill and (2) had the currently available science been presented at the criminal trial, there is a reasonable probability that the outcome of the trial would have been different.

Without the post-conviction relief avenue created by this bill, Oregon courts will not be able to review a case for the use of faulty forensic methods outlined above and determine whether the forensic opinion was material to the conviction. Innocent individuals will continue to be incarcerated in our state prisons, at the taxpayers' expense. We support SB 1515-1, and we remain available to assist the Committee. Thank you.

Sincerely,

Janis C. Puracal
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U.S. Department of Justice

Federal Bureau of Investigation

Office of the General Counsel

Washington, D.C. 20535-0001

October 3, 2013

Peter Neufeld
Co-Director
Innocence Project
40 Worth Street
New York, NY 10013

Dear Mr. Neufeld:

Please find enclosed a statement of the standards to be used for the review of testimony and laboratory reports in the FBI's review of cases involving Microscopic Hair Comparison Review. Upon signature, please return to me at 935 Pennsylvania Ave., NW, Room 7427, Washington, DC 20535.

Thank you.

Best Regards,

Sherry E. Sabol
Section Chief
Science and Technology Law Office
FBI Office of the General Counsel

EXHIBIT 1

MICROSCOPIC HAIR COMPARISON ANALYSIS
Standards for Review of Testimony and Laboratory Reports

The following reflects the November 9, 2012 agreement between the FBI, the Innocence Project, and the National Association of Criminal Defense Lawyers of what the science of microscopic hair examinations supports. This agreement was developed in the course of the FBI's review of laboratory reports and testimony provided in cases involving microscopic hair comparison analysis prior to December 31, 1999.

The scientific analysis of hair evidence permits a well-trained examiner to offer an opinion that a known individual can either be included or excluded as a possible source of a questioned hair collected at a crime scene. Microscopic hair analysis is limited, however, in that the size of the pool of people who could be included as a possible source of a specific hair is unknown. An examiner report or testimony that applies probabilities to a particular inclusion of someone as a source of a hair of unknown origin cannot be scientifically supported. This includes testimony that offers numbers or frequencies as explicit statements of probability, or opinions regarding frequency, likelihood, or rareness implicitly suggesting probability. Such testimony exceeds the limits of science and is therefore inappropriate.

Error Type 1: The examiner stated or implied that the evidentiary hair could be associated with a specific individual to the exclusion of all others. This type of testimony exceeds the limits of the science.

Error Type 2: The examiner assigned to the positive association a statistical weight or probability or provided a likelihood that the questioned hair originated from a particular source, or an opinion as to the likelihood or rareness of the positive association that could lead the jury to believe that valid statistical weight can be assigned to a microscopic hair association. This type of testimony exceeds the limits of the science.

Error Type 3: The examiner cites the number of cases or hair analyses worked in the lab and the number of samples from different individuals that could not be distinguished from one another as a predictive value to bolster the conclusion that a hair belongs to a specific individual. This type of testimony exceeds the limits of the science.

Appropriate: The examiner's testimony appropriately reflected the fact that hair comparison could not be used to make a positive identification, but that it could indicate, at the broad class level, that a contributor of a known sample could be included in a pool of people of unknown size, as a possible source of the hair evidence (without in any way giving probabilities, an opinion as to the likelihood or rareness of the positive association, or the size of the class) or that the contributor of a known sample could be excluded as a possible source of the hair evidence based on the known sample provided. An opinion as to the likelihood or rareness of a positive association may be appropriate in certain cases in which the examined hair samples display unusual or distinct characteristics, *e.g.*, repeated artificial treatments resulting in color variations along the length of the hair, hairs that have been crushed, broken, burned or damaged in some distinctive manner, or hairs that display specific characteristics associated with certain diseases such as pili annulati, monilethrix, or trichorrhexis nodosa.

Andrew Weissmann
General Counsel
Federal Bureau of Investigation
Date:

Peter Neufeld
Co-Director
Innocence Project
Date:

Norman Reimer
Executive Director
National Association of Criminal Defense Lawyers
Date: 10/11/13