

SYLLABUS

This syllabus is not part of the Court’s opinion. It has been prepared by the Office of the Clerk for the convenience of the reader. It has been neither reviewed nor approved by the Court and may not summarize all portions of the opinion.

State v. Tybear Miles (A-41-24) (090275)

Argued March 30, 2025 -- Decided June 24, 2026

JUSTICE FASCIALE, writing for a unanimous Court.

In this interlocutory appeal, the Court considers the scope of discovery to which defendant Tybear Miles is entitled after the State utilized Facial Recognition Technology (FRT) in its criminal investigation.

A grand jury charged defendant with first-degree murder and weapons offenses in connection with a fatal shooting in Jersey City. As part of their investigation, police met with a confidential informant who viewed surveillance footage from a nearby location, identified two individuals by their nicknames, and provided Instagram usernames for each. An FRT search of the Instagram profile photograph for one of the individuals revealed defendant and multiple other possible matches. Police later interviewed defendant’s sister, his ex-girlfriend, and two other people, all of whom identified defendant from videos and still images from other nearby surveillance footage. However, several men were seen in that footage, no footage captured the shooting, and no witness identified defendant as the shooter.

Defense counsel filed a motion to compel discovery related to FRT evidence in accordance with State v. Arteaga, 476 N.J. 36 (App. Div. 2023), seeking the same thirteen items granted on the facts of that case, including proprietary information about the FRT such as the source code. The trial judge applied Arteaga and granted defendant’s motion. The State provided limited discovery and filed a motion for leave to appeal the ruling. The Appellate Division denied the motion. The Court granted leave to appeal. 260 N.J. 197 (2025).

HELD: The Court disagrees with a mechanical application of Arteaga to all cases involving FRT; a defendant’s entitlement varies depending on the specifics of the case. Here, the State must produce: (1) discovery identifying the FRT tools and materials the State used in its investigation; and (2) discovery related to how the State utilized those FRT tools and materials to prosecute defendant. At this stage, however, the trial judge erred in compelling the State to produce proprietary FRT-related information, such as the FRT source code. Determining the discoverability of any proprietary FRT information must await a more developed record.

1. The right to a fair trial is guaranteed under the Federal and State Constitutions, and due process compels the State to disclose evidence favorable to an accused. To further ensure fair and just trials, New Jersey has embraced a broad, open-file approach to discovery in criminal cases. See R. 3:13-3(b). The touchstone for discoverability is whether the requested material is “relevant.” (pp. 17-19)

2. Discovery of proprietary technological information involves unique challenges. In State v. Pickett, the Appellate Division addressed whether a defendant was entitled to trade secrets of DNA analysis software “for the sole purpose of challenging the reliability of the science underlying novel DNA analysis software and expert testimony.” 466 N.J. Super. 270, 276-77 (App. Div. 2021). The court concluded that a defendant is entitled to discovery of proprietary information -- possibly including a software’s source code -- “to the extent necessary to ensure a fair trial.” Id. at 304-06. The Pickett court set forth a burden-shifting framework for such discovery whereby, if the State shows good cause to shield information from discovery, the burden shifts to the defendant to demonstrate “a particularized need” for the evidence. Id. at 304-07. In Arteaga, the Appellate Division considered the scope of discovery to which a defendant was entitled where detectives relied on FRT to investigate a robbery. 476 N.J. Super. at 41-43. Upon review of the defendant’s specific discovery needs, testimony from the defendant’s proposed FRT expert, and the overall record at issue, the Arteaga court held that the defendant had “demonstrated a particularized need” under Pickett for the thirteen items he requested because the list of items sought was adequately tethered in breadth and scope to the defendant’s specific defense needs. Id. at 63. (pp. 20-24)

3. Here, the trial judge did not abuse his discretion in ordering the State to turn over (1) information identifying the non-proprietary FRT tools and materials utilized, which is relevant to the reliability of FRT in this case; and (2) information on how the State used those tools and materials, which is potentially relevant for, at a minimum, impeaching the interviewees’ identification, challenging the investigation, and demonstrating potential third-party guilt. As to proprietary information, such as the FRT source code, the Court reverses in part without prejudice. On the present record, the Court cannot resolve whether defendant has “articulated a particularized need for the proprietary source code and [any] related [proprietary] information.” Pickett, 466 N.J. Super. at 324. The record has not been sufficiently developed to address reliability questions related to the particular FRT used, and defendant does not yet know whether he needs proprietary information. (pp. 24-32)

AFFIRMED in part and REVERSED in part.

CHIEF JUSTICE RABNER and JUSTICES PATTERSON, PIERRE-LOUIS, WAINER APTER, NORIEGA, and HOFFMAN join in JUSTICE FASCIALE’s opinion.

SUPREME COURT OF NEW JERSEY

A-41 September Term 2024

090275

State of New Jersey,

Plaintiff-Appellant,

v.

Tybear Miles,

Defendant-Respondent.

On appeal from the Superior Court,
Appellate Division.

Argued
March 30, 2026

Decided
June 24, 2026

Colleen Kristan Signorelli, Special Deputy Attorney General/Acting Assistant Prosecutor, argued the cause for appellant (Wayne Mello, Acting Hudson County Prosecutor, attorney; Colleen Kristan Signorelli, on the briefs).

Joel S. Silberman argued the cause for respondent (Law Offices of Joel S. Silberman, attorneys; Joel S. Silberman, on the briefs).

John J. Santoliquido, Deputy Attorney General, argued the cause for amicus curiae Attorney General of New Jersey (Jennifer Davenport, Attorney General, attorney; Michael L. Zuckerman, Deputy Solicitor General, and John J. Santoliquido, of counsel and on the brief).

Tamar Y. Lerer, Deputy Public Defender, argued the cause for amicus curiae Public Defender of New Jersey (Jennifer N. Sellitti, Public Defender, attorney; Tamar Y. Lerer, of counsel and on the brief).

Dillon Reisman argued the cause for amici curiae American Civil Liberties Union, American Civil Liberties Union of New Jersey, Innocence Project, and Collaborative Research Center for Resilience (American Civil Liberties Union of New Jersey Foundation, American Civil Liberties Union Foundation, and Innocence Project, Inc., attorneys; Dillon Reisman, Ezra D. Rosenberg, Jeanne LoCicero, Nathan Freed Wessler a member of the New York and Massachusetts bars, admitted pro hac vice, and Maithreyi Nandagopalan a member of the New Mexico bar, admitted pro hac vice, on the brief).

Christopher J. Frascella submitted a brief on behalf of amici curiae Electronic Privacy Information Center, Electronic Frontier Foundation, and National Association of Criminal Defense Lawyers (Electronic Privacy Information Center, and McCarter & English, attorneys; Christopher J. Frascella, Daniella Gordon, Abigail Kunkler a member of the District of Columbia bar, admitted pro hac vice, Hannah Zhao (Electronic Frontier Foundation) a member of the New York bar, admitted pro hac vice, and Michael Price and Shreya Tewari (National Association of Criminal Defense Lawyers) members of the New York bar, admitted pro hac vice, on the brief).

Thomas E. Redburn, Jr., submitted a brief on behalf of amicus curiae Dr. Gary L. Wells, Ph.D. (Lowenstein Sandler, attorneys; Thomas E. Redburn, Jr., and Maya Ginsburg, on the brief).

Pashman Stein Walder Hayden, attorneys for amicus curiae Association of Criminal Defense Lawyers of New

Jersey, submitted a letter relying on the brief of amicus curiae Public Defender of New Jersey.

Lawrence S. Lustberg submitted a brief on behalf of amicus curiae Dr. Michael C. King, Ph.D. (Gibbons, attorneys; Lawrence S. Lustberg and Ruth O’Herron, on the brief).

Vito A. Gagliardi, Jr., submitted a brief on behalf of amicus curiae New Jersey State Association of Chiefs of Police (Porzio, Bromberg & Newman, attorneys; Vito A. Gagliardi, Jr., of counsel, and David L. Disler and Thomas J. Reilly, on the brief).

JUSTICE FASCIALE delivered the opinion of the Court.

In this interlocutory appeal, we consider the scope of discovery to which defendant is entitled after the State utilized Facial Recognition Technology (FRT) in its criminal investigation. Relying on State v. Arteaga, 476 N.J. Super. 36 (App. Div. 2023), in which the appellate court directed the trial judge on remand to order the State to produce thirteen items of FRT discovery, the trial judge in this matter compelled the State to produce those exact same thirteen items of FRT-related discovery. The Appellate Division denied leave to appeal, concluding that “Arteaga applies and the [trial] judge did not abuse his discretion in compelling the State to produce the relevant FRT-related discovery.” We granted leave to appeal and, for the reasons that follow, we now affirm in part and reverse in part.

“As technology proliferates, so does its use in criminal prosecutions.” State v. Pickett, 466 N.J. Super. 270, 323 (App. Div. 2021). Yet a defendant’s discovery related to the investigative use of such technology remains a case-specific inquiry, fundamentally premised upon whether the information sought is relevant to a defendant’s case and whether its production is necessary to ensure a fair trial. We thus disagree with a mechanical application of Arteaga to all cases involving FRT. Such discovery cannot be reduced to a rigid thirteen-item checklist; a defendant’s entitlement varies depending on the specifics of the case.

Accordingly, under the facts of this case, we hold that the State must produce: (1) discovery identifying the FRT tools and materials the State used in its investigation; and (2) discovery related to how the State utilized those FRT tools and materials to prosecute defendant. The first category -- identifying the FRT tools -- is relevant to more fully developing a record regarding the reliability of FRT in this case. The second category -- information on how the State utilized those tools -- could be relevant to impeaching the interviewees’ identification, challenging the State’s investigation, and demonstrating potential third-party guilt. The trial judge did not abuse his discretion by ordering the State to turn over discovery that fits into those two categories because, without either category of relevant

information, defendant would be deprived of his right to present a meaningful defense. Although we reject a rigid checklist for FRT discovery, we note that such basic information will, in most cases, constitute the minimum necessary to safeguard a defendant's right to a fair trial.

At this stage, however, the trial judge erred in compelling the State to produce proprietary FRT-related information, such as the FRT source code. Determining the discoverability of any proprietary FRT information must await a more developed record. Indeed, defendant acknowledged that he does not yet know whether such information is necessary for his defense.

We therefore affirm as modified in part, reverse without prejudice in part, and remand for further proceedings consistent with this opinion.

I.

A grand jury indicted defendant and charged him with first-degree murder, second-degree possession of a weapon for an unlawful purpose, and second-degree unlawful possession of a weapon without a permit. Thereafter, relying on Arteaga, defendant filed his motion to compel discovery related to the FRT the State utilized in its investigation. We derive the facts from the limited record presented to the trial judge.

A.

On June 5, 2021, at 10:03 p.m., police responded to a report of shots fired on Stegman Parkway in Jersey City. Upon arrival, the police found the victim, Ahmad McPherson, lying on the sidewalk in front of 239 Stegman Parkway. They performed chest compressions and CPR until the victim was transported to Jersey City Medical Center, where he was pronounced dead at 10:40 p.m. Following an autopsy, the medical examiner determined that the cause of death was multiple gunshot wounds and classified the death as a homicide.

At the scene of the shooting, a concerned citizen handed an officer two handwritten notes. One note stated, “The guy who did the sho[o]ting last name is Collins he has dr[e]ads.” The other note simply stated, “Maude.”¹ Investigators then recovered from the victim two resealable plastic bags containing suspected marijuana and \$180. They also recovered blue Nike shorts and a white T-shirt at the murder scene, which belonged to the victim.

The next day, Officer Teddy Roque from the Jersey City Police Department (JCPD) met with a confidential informant (CI). The CI did not witness the shooting. The officer showed the CI video obtained from Jersey

¹ The trial judge indicated that the name “Maude” is “an apparent reference to the [victim].”

City Closed Circuit Television (CCTV),² which recorded activity on Dwight Street and Martin Luther King (MLK) Drive, approximately two blocks from the shooting, at 9:59 p.m. According to Officer Roque's police report, the footage shows a male wearing "gray sweatpants, a white T-shirt, [with] long black dreads and white sneakers" walk over to and speak with a second male wearing "black shorts, a white T-shirt, . . . [with] long dreads, [and] a fanny pack strung across his chest." The report reflects that the two males then walked northbound on MLK Drive with other men.

After reviewing the CCTV video, the CI identified the two males by their street names. The CI called the first male "Fat Daddy" and referred to the second male as "Parkz." The CI also provided the Instagram usernames of the two men, along with the name, address, and car make of Fat Daddy's ex-girlfriend.

Following the CI's identification and information, the police retrieved Fat Daddy's photograph from his Instagram profile and saved it as a JPEG file.³ Officer Roque then imported the photograph into the NJ/NY High Intensity Drug Trafficking Areas (HIDTA) Facial Recognition Module, and,

² The CCTV video was not provided on appeal.

³ The record is silent as to whether the police obtained Parkz's photograph from Parkz's Instagram username that the CI had provided.

according to the report, “a search was conducted for a match which revealed a positive match for [defendant].” The search also revealed multiple other possible “matches.” Officer Roque’s report states, without providing a specific timeline, that “[l]ater on, the CI was shown a mug shot photograph of [defendant]” and positively identified the depicted individual as “Fat Daddy.”

Police also obtained three other videos from nearby locations from the day of the shooting: surveillance video footage from Kaelyn Grocery store, located at 156 MLK Drive, taken approximately ninety minutes before the shooting; footage from 158 MLK Drive, taken approximately seven minutes before the shooting; and Ring doorbell video footage from 235 Stegman Street, taken at the time of the shooting. The video from Kaelyn Grocery depicts a group of Black males, including the victim, who was wearing blue Nike shorts and a white T-shirt, and a male with the same dreads and clothing as the man whom the CI had identified from the CCTV footage as “Fat Daddy.” The footage from 158 MLK Drive depicts the same group of males and shows the victim and the male with dreads walk away from the group. The Ring doorbell video captured the sound of two gunshots but does not visually depict the shooting. At the time of the gunshots, six members of the group of Black males are depicted but neither the male with dreads nor the victim are visible in the frame. Immediately following the gunshots, that group of males is seen

running east, followed by the departure of the male with dreads, who walked west.

Two days after the shooting, and after law enforcement used FRT as part of their investigation, the police interviewed four individuals: a resident who lived near the shooting; defendant's sister; defendant's ex-girlfriend; and an individual familiar with the neighborhood (the local man). None of those interviewees witnessed the shooting. In their police interviews, the resident, sister, ex-girlfriend, and local man were each shown surveillance videos and photographs which were different than the ones shown to the CI. The interviewees shared the following information:

The resident explained that he saw the group of men depicted in the Kaelyn Grocery store, 158 MLK Drive, and doorbell videos walking down the street. The resident further stated that he heard an argument and gunshots but could not identify who fired the shots.

Officer Ricardo Rodrigues showed defendant's sister three still photographs from the Kaelyn Grocery store video. She identified her brother as one of the people in those photographs.

Officer Rodrigues showed defendant's ex-girlfriend "screenshot images" also recovered from the Kaelyn Grocery store video. The ex-girlfriend identified one person in those images as defendant. She told Officer

Rodrigues that she had dated defendant for about six months and that her relationship with defendant had ended two weeks before the murder. She also told the officer that she did not know whether defendant went by “Fat Daddy” or any other nickname.

The police showed the local man the Kaelyn Grocery store video footage. From that footage, the local man identified the individual with dreads as “Fats/Fat Daddy.” He went on to identify several of the other men depicted in the video, also only by nickname.

Altogether, what we can discern from this limited record is that no witness identified defendant as the shooter; there were several people near the victim while he was shot twice; and all of the police interviewees were shown video footage and still photographs from approximately ninety minutes before the murder and seven minutes before the murder.

B.

Shortly after arraignment, defense counsel filed a motion to compel discovery “related to Facial Recognition evidence in accord with [Arteaga].” Defense counsel’s supporting brief listed -- verbatim -- the same thirteen FRT-related items that the Arteaga defendant had requested, a request that the Appellate Division had granted on the facts of that case.⁴

⁴ See Section III.B.3 below for the full list of requested Arteaga items.

Applying Arteaga, the trial judge granted defendant's motion and compelled the State to produce those thirteen items. On reconsideration, the same judge rejected the State's contention that Arteaga was inapplicable and added that he had "already factored the differences between Arteaga and this case."

The State's discovery response was limited. First, the State provided defendant with four pages of what appear to be two different FRT searches that were run as part of the investigation. One search returned a list of ten possible "matches" to the probe image of defendant, with defendant ranked as the eighth "match" on the list of ten. The other search also returned a list of ten possible "matches," with five different images of defendant ranked in the first five positions.

Second, the State provided a letter from an individual associated with the New Jersey State Police (NJSP) who reported the following: "I have searched our system[,] and [the NJSP has] no record of a request related to this case. . . . [The NJSP has] no record of that defendant's name or the case number you provided."⁵

⁵ Given the NJSP representative's report, as the OPD stated, "it is very unclear where the search results [here] have come from."

In addition to providing those two discovery items, the State filed a motion for leave to appeal the trial judge's discovery ruling. The Appellate Division denied the State's motion, noting that trial judges are afforded substantial deference on discovery matters and that Arteaga applies to defendant's request. Accordingly, the appellate court concluded that the trial judge did not abuse his discretion by entering the discovery order.

We granted the State's motion for leave to appeal. 260 N.J. 197 (2025). We also granted motions to appear as amici curiae filed by the Office of the Public Defender (OPD); the American Civil Liberties Union of New Jersey (ACLU); the Innocence Project; the Collaborative Research Center for Resilience (CRCR); the New Jersey State Association of Chiefs of Police (NJSACOP); the Attorney General; the Electronic Privacy Information Center (EPIC); the Electronic Frontier Foundation (EFF); the National Association of Criminal Defense Lawyers (NACDL); the Association of Criminal Defense Lawyers of New Jersey (ACDL); Dr. Michael C. King, Ph.D.; and Dr. Gary L. Wells, Ph.D.

II.

The State argues that, although it utilized FRT during its investigation, the FRT is irrelevant in prosecuting defendant. It asserts that the information provided by the CI alone would have led officers to investigate defendant. The

State explains the FRT was merely an “investigatory tool,” which it will not use at trial. Requiring production of all categories of discovery granted in Arteaga would be “problematic,” according to the State, because such an application of Arteaga would “not account for how quickly technology evolves and develops.” If it is required to produce FRT-related discovery and is unable to produce “all or some of the requested FRT-related discovery materials,” then the State contends that any potential remedy was not fully developed in the trial court.

Defendant argues that a meaningful defense requires FRT discovery. He asserts that he has the right to challenge the State’s FRT investigation and identification process, even if the State elects not to rely on FRT at trial. Defendant relies on Rule 3:13-3(b)(1), Brady v. Maryland, 373 U.S. 83 (1963), and the inherent ability of a court to order discovery when justice requires.

Specifically, defendant disputes whether the investigation would have led to him regardless of the State’s utilization of FRT. He emphasizes that no one identified him as the shooter, and law enforcement never showed the CI, his sister, his ex-girlfriend, or the local man the surveillance or still photographs of the actual shooting. He further argues that, independent of the information provided by the interviewees, FRT discovery is relevant to the possibility of third-party guilt because the FRT test produced other “matches”

for the FRT probe image. Additionally, defendant argues that there are significant issues as to the way in which the State utilized FRT. He contends that FRT discovery is relevant to “the sloppiness of the police investigation, fueled by tunnel vision.”

The Attorney General asserts that discovery into FRT’s “inner workings” is not warranted because the State utilized FRT as an investigatory tool rather than as a “source of trial evidence.” The Attorney General concedes that “basic information” about “how the FRT was used” (i.e., “what image was shown to [FRT], what matches were found, and the general context of [FRT’s] use”) is prudent to disclose when FRT is used in an investigation because it is “more likely to be probative in a particular defendant’s case [and] much less burdensome to produce.” But the Attorney General contends that more extensive discovery should not be granted without a defendant first establishing a “strong need.”

The NJSACOP similarly contends that this Court should establish a “framework that permits FRT software and source code [to be discoverable] only where a criminal defendant demonstrates a particularized need for it.” It argues that discovery of “FRT software, source code, and other such proprietary information should be rare.” In addition to its position as to the discoverability of proprietary FRT information, the NJSACOP asserts that “a

defendant would remain free to obtain discovery and to adduce testimony at trial regarding how the FRT was used.”

The OPD, ACDL, ACLU, and other remaining amici all argue that without any FRT discovery, there can be no fair trial. The OPD, EPIC, EFF, and NACDL provide important and helpful information about how most FRT systems work. The OPD’s amicus brief contains a detailed analysis, which asserts that FRT systems “vary in their reliability, many produce unacceptably high levels of false positives, and all of them perform significantly worse under real-world conditions.” The OPD contends that it is “critical for the defense to know exactly which tools were employed and how they were used.” All those amici assert that FRT is inherently subjective and error-prone, has led to misidentifications, has been unreliable, and that defendant is entitled to FRT discovery. They contend that the State here utilized FRT to target defendant as a suspect, which they argue is relevant to the quality and thoroughness of the criminal investigation, as well as to potential third-party guilt.

Dr. King, an expert in biometrics, states the term FRT “does not refer to a single system or software,” but to diverse systems, “each developed and trained with [their] own standards . . . yielding results that vary widely in their reliability.” Dr. King notes that “many of the controls and configuration

settings” that support the accuracy of FRT results are “relaxed or removed . . . for investigative . . . uses.” For example, he explains that law enforcement may set a low threshold for inclusion in a list of potential “matches” to ensure the list is fully populated. He states FRT systems “do not find a match” but rather find “similarities” given that “no two photos even of the same face are identical.” Dr. King explains that the similarities are “not tied to a statistical degree of confidence in the usual sense” but “depend on the algorithm unique to each . . . system.”

Dr. Wells, a psychologist who studies eyewitness identification, contends that the FRT searches here are problematic. For example, if a photo of defendant “was not in the HIDTA database because he had never been arrested in New York or New Jersey, then the FRT was guaranteed to return a false negative.” He explains that the FRT system also “may have been insufficiently trained or contained biases or bugs.” Those potential issues have a bearing on the State’s investigation because the “FRT produced . . . a possible match” between Fat Daddy’s Instagram photo and defendant’s mugshot, thus implying that “[d]efendant might be Fat Daddy.”

III.

A.

We review discovery motions under an abuse of discretion standard and therefore “accord substantial deference to a trial court’s issuance of a discovery order.” State v. Hernandez, 225 N.J. 451, 461 (2016). “A trial court can abuse its discretion ‘by failing to consider all relevant factors,’” and we “will set aside or modify such decisions if they do not comport with the applicable law or do not give sufficient regard to pertinent considerations.” State v. Ramirez, 252 N.J. 277, 298 (2022) (quoting State v. S.N., 231 N.J. 497, 500 (2018)).

B.

1.

The right to a fair trial is fundamental and guaranteed under the Fifth and Sixth Amendments to the United States Constitution, as well as the New Jersey Constitution. U.S. Const. amend. V, VI; N.J. Const. art. I, ¶ 10. Our Constitutions thus ensure that criminal defendants are afforded “a meaningful opportunity to present a complete defense.” State v. Garron, 177 N.J. 147, 168 (2003) (quoting Crane v. Kentucky, 476 U.S. 683, 690 (1986)). Those “fundamental legal rights are the hallmark of our judicial process, a process which technology” continues to impact. Pickett, 466 N.J. Super. at 302.

Among a defendant's fundamental rights is the right to due process. Id. at 279. As the Supreme Court of the United States held in Brady v. Maryland, due process compels the State to disclose "evidence favorable to an accused . . . where the evidence is material either to guilt or to punishment, irrespective of the good faith or bad faith of the prosecution." 373 U.S. at 87. The suppression of such evidence thus "violates due process." Ibid.; State v. Brown, 236 N.J. 497, 518 (2019). The Brady rule applies to "[i]mpeachment evidence . . . as well as exculpatory evidence." United States v. Bagley, 473 U.S. 667, 676 (1985); Brown, 236 N.J. at 518.

2.

To further "ensure fair and just trials," New Jersey has embraced a broad, open-file approach to discovery in criminal cases. Hernandez, 225 N.J. at 453; State v. Scoles, 214 N.J. 236, 252 (2013) ("[A] defendant has a right to automatic and broad discovery of the evidence the State has gathered in support of its charges."). Indeed, discovery has long been found a "sound tool for truth." State v. Cook, 43 N.J. 560, 564 (1965). Pretrial discovery in particular "encourage[s] the presentation of all relevant material to the jury as an aid in the establishment of truth through the judicial process." State in Int. of W.C., 85 N.J. 218, 221 (1981).

Rule 3:13-3(b) codifies and delineates the scope of such discovery. It mandates that, “[e]xcept for good cause shown, the [State’s] discovery for each defendant . . . shall include exculpatory information or material.” R. 3:13-3(b)(1). The touchstone for discoverability is whether the requested material is “relevant.” See ibid.; Ramirez, 252 N.J. at 296. “Relevant material” is that which has “a tendency in reason to prove or disprove [a] fact of consequence to the determination of the action.” State v. Desir, 245 N.J. 179, 193 (2021) (alteration in original) (quoting State v. Richardson, 452 N.J. Super. 124, 132 (App. Div. 2017)).

Although Rule 3:13-3 establishes the baseline for discovery, it must be noted that discovery is not unlimited. We have held that discovery is not so broad as to indulge, for example, a defendant’s “unfocused, haphazard search for evidence.” Hernandez, 225 N.J. at 463 (quoting State v. D.R.H., 127 N.J. 249, 256 (1992)). Nevertheless, trial judges retain the authority to order discovery even “beyond that mandated by our court rules when doing so will further the truth-seeking function or ensure the fairness of a trial.” Ibid. (quoting State in Int. of A.B., 219 N.J. 542, 560 (2014)); see also W.C., 85 N.J. at 221 (“[W]e have no doubt that a Court has the inherent power to order discovery when justice so requires.”).

3.

Discovery of proprietary technological information involves unique challenges compared to standard discovery requests. In State v. Pickett, the Appellate Division addressed, as an issue of first impression, whether a defendant was entitled to trade secrets of DNA analysis software used to identify and charge him “for the sole purpose of challenging at a Frye hearing the reliability of the science underlying novel DNA analysis software and expert testimony.” 466 N.J. Super. at 276-77, 281 (referring to Frye v. United States, 293 F. 1013 (D.C. Cir. 1923)). The appellate court concluded that a defendant is entitled to discovery of proprietary information -- which, in the case of digital tools and materials, might include a “software’s source code and supporting software development and related documentation” -- “to the extent necessary to ensure a fair trial.” Id. at 304-06.

The Pickett court set forth a burden-shifting framework for such discovery. Initially, “[the] party seeking to shield information from discovery” on grounds that the information is “confidential or proprietary” “bears the burden of showing good cause” to do so. Id. at 304; see also R. 4:10-3(g) (providing that a protective order may be sought to restrict the scope of such disclosure).

If the State makes the requisite good cause showing, the burden then “shift[s] to [the] defendant to demonstrate a sufficient need for the evidence.” Pickett, 466 N.J. Super. at 304-05. The court provided four fact-intensive considerations to guide trial judges in analyzing whether a defendant has established a “particularized need”:

(1) whether there is a rational basis for ordering a party to attempt to produce the information sought, including the extent to which proffered expert testimony supports the claim for disclosure; (2) the specificity of the information sought; (3) the available means of safeguarding the company’s intellectual property, such as issuance of a protective order; and (4) any other relevant factors unique to the facts of the case.

[Id. at 307.]

In State v. Arteaga, the Appellate Division considered the scope of discovery to which a defendant was entitled where detectives relied on FRT to investigate a robbery. 476 N.J. Super. at 41-43. The detectives used FRT to identify the defendant as a suspect, which led the State to charge him with robbery, assault, and related offenses. Ibid. Upon learning that FRT played a role in identifying him, defendant sought, pursuant to Rule 3:13-3 and Brady, discovery of the following thirteen specific items:

1. The name and manufacturer of the facial recognition software used to conduct the search in this case, and the algorithm(s) version number(s) and year(s) developed;

2. The source code for the face recognition algorithm(s);
3. A list of what measurements, nodal points, or other unique identifying marks are used by the system in creating facial feature vectors including, if those marks are weighted differently, the scores given to each respective mark;
4. The error rates for the facial recognition system used, including false accept and false reject rates (also called false match and false non-match rates -- FMR and FNMR), as well as documentation as to how the error rates were calculated, including whether they reflect test or operational conditions;
5. The performance of the algorithm(s) used on applicable NIST Face Recognition Vendor Tests, if available;
6. The original copy of the query or “probe” photo submitted to the Real Time Crime Center [--] Facial Identification Section;
7. All edited copies of the query or “probe” photo submitted to the facial recognition system, noting if applicable, which edited copy produced the candidate list that the defendant was in, and a list of edits, filters, or any other modifications made to that photo;
8. A copy of the database photo matched to the query or “probe” photo and the percentage of the match, rank number, or confidence score assigned to the photo by the facial recognition system in the candidate list;
9. A list or description of the rank number or confidence scores produced by the system, including the scale on which the system is based (e.g. percentage, logarithmic, other);

10. A copy of the complete candidate list returned by the face recognition or the first [twenty] candidates in the candidate list if longer than [twenty], in rank order and including the percentage of the match or confidence score assigned to each photo by the facial recognition system;

11. A list of the parameters of the database used, including:

1. How many photos are in the database;
2. How are the photos obtained;
3. How long the photos are stored;
4. How often the database is purged;
5. What the process is for getting removed from the database;
6. Who has access to the database;
7. How the database is maintained;
8. The Privacy Policy for the database;

12. The report produced by the analyst or technician who ran the facial recognition software, including any notes made about the possible match relative to any other individuals on the candidate list; and

13. The name and training, certifications, or qualifications of the analyst who ran [the] facial recognition search query.

[Id. at 43-44 (alterations in original) (footnotes omitted).]

Upon review of the defendant’s specific discovery needs, testimony from the defendant’s proposed FRT expert, and the overall record at issue, the Arteaga court held that the defendant had “demonstrated a ‘particularized need

for [the] discovery” under Pickett because his “list of specific items sought, aided by an expert,” was adequately tethered in breadth and scope to the defendant’s specific defense needs. Id. at 63 (alteration in original) (quoting Pickett, 466 N.J. Super. at 279). Accordingly, the Appellate Division held that, on “the facts of this case,” the defendant was entitled to discovery of those thirteen items. Id. at 57.

IV.

Applying those principles to this record, we first hold that the trial judge did not abuse his discretion in ordering the State to turn over information in the following two categories of discovery: (1) information identifying the non-proprietary FRT tools and materials that the State utilized; and (2) discovery on how the State used those FRT tools and materials. The trial judge correctly relied on guidance and principles articulated in Arteaga, Rule 3:13-3(b), and Brady, as well as the inherent authority of trial judges to order discovery when doing so ensures the fairness of a trial.

Second, to the extent the order compelled the State to produce proprietary information, including the FRT source code, we hold that the trial judge abused his discretion, and we reverse without prejudice. As the Appellate Division explained in Pickett, proprietary investigative software information is only discoverable upon a fact-specific determination that a

defendant possesses a particularized need for the information. The trial judge never made such a determination here, and it would be premature for us to do so at this stage, first because the record has not been sufficiently developed, and second because the defense does not yet know whether it needs the proprietary FRT source code.

A.

Under the facts of this case, we hold that the State must produce:

(1) discovery identifying the FRT tools and materials the State used in its investigation; and (2) discovery related to how the State utilized those FRT tools and materials. We address the scope of each category in turn.

1.

As to the first category of discovery, the State must turn over information identifying the FRT tools and materials it utilized so that the parties can further address issues regarding the FRT's reliability. By "identifying information," we refer generally to basic information such as the name and manufacturer of the software used to conduct the search or searches; the version numbers; the years of development; key metrics of performance, including publicly available documentation related to error rates; and information as to the database and operator of the FRT that the State used in this case. Such information is relevant to defendant's defense because it

serves to identify the investigative tools utilized by the State. We do not limit the list of FRT tools or materials to those examples. In this case, it is difficult to imagine that the discoverable information would not include such straightforward items as items one, twelve, and thirteen of defendant's request.

2.

The State must also turn over discovery related to how it used FRT in its investigation. By that, we refer to such items as the original photograph utilized as the "probe photograph"; any edited copies of that probe photograph; and the photographs that "matched" the probe photograph. In general terms, the discoverable information should include such straightforward items as items five, seven, and nine of defendant's request. We note the State has already partially turned over items eight and ten to defense counsel. But discovery of additional items relating to how the State used FRT in this case is potentially relevant for, at a minimum, the following three reasons: impeaching the interviewees' identification, challenging the State's investigation, and demonstrating potential third-party guilt.

First, as to impeaching the interviewees' identification of defendant, no one has identified defendant as the person who shot and killed the victim. The CI was not shown video footage or still photos of the shooting. Instead, the police showed the CI images of individuals in the vicinity of the shooting a

few minutes prior to the accident. From those images, the CI identified two people (Fat Daddy and Parkz), without using their real names, and provided law enforcement with Instagram usernames of both men. The CI also provided law enforcement with the name, address, car make, and Instagram username of Fat Daddy's ex-girlfriend. Subject to what discovery will show, police obtained a mugshot of only defendant (not Parkz or anyone else) utilizing FRT. Law enforcement chose to use FRT in its investigation. Defendant's meaningful defense includes the State's use of FRT.

Second, the FRT discovery is relevant to defendant's ability to challenge the investigation. For example, defendant may utilize the FRT discovery to impeach the State's investigating officers, challenge how those officers employed the technology, and contest their knowledge of the efficacy and reliability of the specific FRT used. In addition, FRT discovery will enable defendant to understand how law enforcement utilized FRT to tie him to the crime. Defendant disagrees with the State's assertion that even without the use of FRT, the police would have interviewed defendant's sister, ex-girlfriend, the resident, or the local man. Here, the sister and ex-girlfriend identified defendant in still photographs where he is allegedly depicted along with other people ninety minutes before the shooting. They did not identify him as the shooter. And the local man independently identified one of the individuals

depicted on the Ring doorbell video as “Fats” or “Fat Daddy.” Defendant’s meaningful defense includes probing the way in which the State investigated him.

Finally, as to third-party guilt, the results of the State’s FRT searches seemingly reflect multiple “matches” to the probe image of defendant. The results provided by the State suggest it ran two different FRT searches. The first run identified other people as closer “matches” to the probe image than defendant. In that run, defendant was ranked eighth on a list of ten. The other run showed that five other people “matched” defendant’s purported probe image. Accordingly, regardless of how many searches were performed, discovery from the State about how it utilized FRT is relevant to third-party guilt.

B.

To the extent the trial judge’s order compelled the State to produce proprietary information, such as the FRT source code, we reverse in part without prejudice. As the Appellate Division explained in Pickett, discovery of proprietary technological information involves a two-step inquiry: first, a party seeking to protect the information must show good cause that such information is proprietary or confidential; and second, upon doing so, the

“burden must shift” to a defendant to show that they possess “a particularized need for such discovery.” 466 N.J. Super. at 304-05, 307.

Here, the trial judge erred in granting defendant discovery of proprietary information without considering either step. Specifically, the trial judge’s interpretation of Arteaga -- as automatically compelling disclosure of proprietary information for all defendants any time FRT was used in their investigation -- was unduly broad. In Arteaga, the Appellate Division properly considered Pickett’s “particularized need” inquiry in light of the defendant’s specific defense needs and -- upon “independent review” of the record at issue -- found that the defendant had made such a showing. Arteaga, 476 N.J. Super. at 57, 63. The Arteaga court’s finding of a “particularized need” for the defendant at issue did not universally render proprietary FRT information disclosable in all future FRT cases, without regard to whether a future defendant has shown a particularized need. Ultimately, as with any discovery matter, disclosure of proprietary information remains fact-intensive and case-specific.

Indeed, on this record, we cannot resolve whether defendant “articulated a particularized need for the proprietary source code and [any] related [proprietary] information.” Pickett, 466 N.J. Super. at 324. Adjudicating legal questions pertinent to the discoverability of the FRT’s proprietary source code

and any other proprietary FRT information that the State utilized in this case would be premature for the following two reasons.

First, the record has not been sufficiently developed to address reliability questions related to the particular FRT used. In Arteaga, for example, the defendant had produced “a detailed declaration from the defense’s proposed FRT expert, opining about the accuracy issues associated with FRT and why the defense needed the discovery.”⁶ 476 N.J. Super. at 49. The expert explained that “[u]nderstanding the [NYPD RTCC’s facial recognition] model, the data that was used to train the model, and the class-specific performance for the image(s) in this case are critical to understand the reliability of the output,” and reasoned that, “without this additional information, the current results of the image recognition software in this case cannot be considered scientifically replicable or relevant.” Ibid. (second alteration in original) (emphases added). Based on the existing record here, however, questions related to the discoverability of the proprietary FRT information are premature.⁷

⁶ The OPD supplied the Court with a copy of the expert report the Arteaga defendant had used in that case.

⁷ As to the State’s arguments regarding the proper remedy for non-compliance with the trial judge’s discovery order, in Arteaga, the State never argued that it would be unable to obtain the discovery related to proprietary information. 476 N.J. Super. at 57. And after the appellate court directed the trial judge on

Second, defendant does not yet know whether he needs proprietary information to address the FRT at issue. His defense counsel clarified during oral argument before us that “I don’t know that the source code is totally relevant to me,” and that “I don’t know how helpful it will be in my case.” The OPD agrees that the record can be developed on remand. Accordingly, to that end, we reverse without prejudice the part of the order compelling the State to produce proprietary FRT information, including “[t]he source code for the face recognition algorithm(s).” On remand, if warranted, defendant may pursue a discovery request for any proprietary FRT-related information upon a showing of particularized need. See Pickett, 466 N.J. Super. at 279, 306-07. If, after the parties make their respective showings, they reach an impasse, then the trial judge can premise his findings and legal conclusions on a record that is more focused on the particular FRT at issue.

remand to order the State to produce discovery in Arteaga, the State did not file notice of leave to appeal to this Court. Here, the trial judge never reached the question of the appropriate remedy. Defendant was provided with only four pages of discovery, but after the trial judge entered the discovery order, the State attempted to comply. On remand, if the State fails to produce the categories of FRT information that we deem discoverable in this opinion, we leave it to the sound discretion of the trial judge to craft an appropriate remedy.

V.

We affirm the order compelling discovery as modified. The State is required to produce (1) discovery identifying the FRT tools and materials it utilized, and (2) discovery related to how the State used FRT here. We reverse without prejudice that part of the order compelling the State to produce the source code of the FRT algorithm and any similar proprietary information applicable to the FRT utilized by the State. On a more developed record, defendant may pursue a discovery request for the FRT's proprietary information if warranted. We remand for further proceedings consistent with this opinion.

CHIEF JUSTICE RABNER and JUSTICES PATTERSON, PIERRE-LOUIS, WAINER APTER, NORIEGA, and HOFFMAN join in JUSTICE FASCIALE's opinion.