UNITED STATES COURT OF APPEALS

FOR THE SECOND CIRCUIT

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August Term, 2019

(Argued: April 2, 2020 Decided: July 13, 2020)

Docket No. 18-3800-cr

UNITED STATES OF AMERICA,

Appellee,

- v. -

DEAN JONES, a/k/a "Korrupt," a/k/a "Blacko," a/k/a "Christopher C. Walker,"

Defendant-Appellant.*

Before: KEARSE, CABRANES, and SACK, *Circuit Judges*.

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* The Clerk of Court is instructed to amend the official caption to conform with the above.

Appeal from a judgment of the United States District Court for the Southern District of New York, Vernon S. Broderick, *Judge*, convicting defendant, after bifurcated trials, of conspiracy to distribute and possess with intent to distribute narcotics, in violation of 21 U.S.C. §§ 846 and 841(b)(1)(A); Hobbs Act robbery and Hobbs Act conspiracy, in violation of 18 U.S.C. § 1951; and possession of a firearm, which had been discharged, in furtherance of the robbery, in violation of 18 U.S.C. §§ 924(c)(1)(A)(iii). Defendant principally challenges the admission, at his trial on the Hobbs Act and firearm counts, of expert testimony based on the Forensic Statistical Tool method of DNA analysis used by New York City's Office of the Chief Medical Examiner. As to the narcotics trial, defendant challenges the court's rejection of his proposed instruction on multiple conspiracies and its denial of his motion for a new trial based on newly discovered evidence as to the credibility of a government witness. Concluding that the district court properly applied *Daubert* principles, and finding no error in the court's instructions or its denial of a new trial, we affirm the judgment.

Affirmed.

THOMAS McKAY, Assistant United States Attorney, New York, New York (Geoffrey S. Berman, United States Attorney for the Southern District of New York, Anna M. Skotko, Assistant United States Attorney, New York, New York, on the brief), *for Appellee*.

IRVING COHEN, New York, New York, *for Defendant-Appellant*.

KEARSE, *Circuit Judge*:

Defendant Dean Jones appeals from a judgment entered in the United States District Court for the Southern District of New York following bifurcated jury trials before Vernon S. Broderick, *Judge*, convicting him on one count of conspiracy to distribute and possess with intent to distribute five kilograms and more of cocaine, 280 grams and more of cocaine base, and one kilogram and more of heroin, in violation of 21 U.S.C. §§ 846 and 841(b)(1)(A); one count of Hobbs Act robbery and one count of Hobbs Act conspiracy, in violation of 18 U.S.C. § 1951; and one count of possession of a firearm, which was discharged, in furtherance of the robbery, in violation of 18 U.S.C. §§ 924(c)(1)(A)(iii); and sentencing him principally to a total of 312 months' imprisonment, to be followed by five years of supervised release. On appeal, Jones contends principally that at his trial on the Hobbs Act and firearm counts, the district court abused its discretion in admitting DNA evidence and expert testimony based on the Forensic Statistical Tool method of DNA analysis used by New York City's Office of the Chief Medical Examiner. As to the narcotics trial, Jones challenges the court's

rejection of his proposed instruction on multiple conspiracies and its denial of his motion for a new trial based on newly discovered evidence as to the credibility of a government witness. Concluding that the district court properly applied the principles established in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), and finding no merit in Jones's other contentions, we affirm the judgment.

I. BACKGROUND

In the operative superseding indictment ("Indictment"), Jones was charged in five counts: one count of conspiring to distribute and possess with intent to distribute heroin, cocaine, and cocaine base from in or about 2011 through in or about August 2016, and one count of possession of a firearm in furtherance of the narcotics conspiracy (collectively the "Narcotics Charges"); and one count each of Hobbs Act conspiracy and Hobbs Act robbery on or about December 21, 2012, along with one count of possession of a firearm, which was discharged, in furtherance of the Hobbs Act crimes (the "Robbery Charges"). Six other persons were named as codefendants with Jones in the Narcotics Charges; Jones was the only named defendant in the

Robbery Charges.

The district court severed the Narcotics Charges from the Robbery Charges. In his trial on the Narcotics Charges (*see* Part III below), Jones was convicted on the conspiracy count but was acquitted on the firearm charge related to that conspiracy. The proceedings relevant to Jones's challenges to the conspiracy conviction are summarized in Part III. The evidence relevant to his trial on the Robbery Charges, taken in the light most favorable to the government, included the following.

A. *The Robbery Charges*

Jones was arrested by New York City Police Department ("NYPD") officers in June 2013, and was indicted on the federal robbery and firearm charges in 2015 and 2016, in connection with a robbery at a restaurant in the Bronx in December 2012. There was security camera video of the robbery, and other evidence, including DNA evidence, to indicate that Jones was one of the robbers. The only issue raised on this appeal to challenge Jones's convictions on the Robbery Charges is whether a portion of that DNA evidence was properly admitted.

1. *The Events*

After midnight on December 21, 2012, Jones and an accomplice, both wearing masks and blue latex gloves, entered a restaurant in the Bronx; Jones was carrying a gun, and his accomplice picked up a pair of kitchen scissors. A security camera video showed the two men brandishing their weapons, collecting cash from the register, and taking money and cell phones from customers. When one customer attempted to remove money from the wallet in his pocket, Jones punched him in the head and shot him in the leg.

When the robbers attempted to flee the scene, they were seen by NYPD officers. Jones fired a shot, hitting a parked car; he then discarded the gun (which was retrieved by another accomplice, who had been outside the restaurant serving as a lookout, and who fled, unnoticed by the officers). The scissors-wielding robber was apprehended quickly. Jones had run in another direction and escaped the scene.

Jones was eventually arrested and charged, as indicated above. The government's evidence that Jones had been the gun-wielding robber on December 21, 2012, included (a) cell site location data showing that the movements of Jones's cellphone tracked the movements of the robbers; (b) Jones's proffer of an alibi, which

the out-of-state relative he claimed to have been visiting at the time of the robbery would not corroborate, and which was inconsistent with the cell site evidence as to the movements of Jones's cellphone; and (c) testimony by cooperating witness Steven Christopher, who testified that he and Jones "hung out together as well as sold drugs together" (Robbery Trial Transcript at 357), and that Christopher had helped Jones to lay low in Vermont after Jones said he had committed the robbery (*see id.* at 365-66). The government's case also included DNA evidence.

2. *The DNA*

On December 21, 2012, as the gun-wielding robber was fleeing, he had discarded not only his gun but also his mask and his hat. A pursuing NYPD officer spotted the hat, which was tangled up with the mask, and a blue latex glove nearby that visually matched the gloves worn by the robbers seen in the security video. The officer guarded the hat, mask, and glove until an NYPD evidence collection team arrived and took custody of it. DNA found on the hat ("Hat DNA") matched Jones's DNA profile.

The glove also contained DNA, but from at least three sources. Both the Hat DNA and that on the glove ("Glove DNA") were analyzed by New York City's

Office of the Chief Medical Examiner ("OCME"). For the Glove DNA, OCME used its internally-developed, then-usual methodology for this type of mixed DNA sample, called the Forensic Statistical Tool ("FST"). The government proposed to offer in evidence FST's analytical conclusion that one of the sources of the Glove DNA was likely Jones. Prior to trial, Jones objected to the introduction of FST's Glove DNA evidence, and the district court ordered a *Daubert* hearing to determine the reliability of FST analysis.

B. *The* Daubert *Hearing*

In support of the FST evidence as to the Glove DNA, the Government called two witnesses: Dr. Craig O'Connor, a Ph.D. in genetics who, at the time of his testimony, was the assistant director at the Department of Forensic Biology at OCME, and had previously served as a criminalist at OCME; and Dr. Adele Mitchell, a Ph.D. in human genetics and molecular biology who had helped develop FST for OCME.

In opposition, Jones called two witnesses, Dr. Eli Shapiro, a Ph.D. in biology who had previously served as a coordinator at OCME, and Nathan Adams, who held a bachelors degree in computer science and was pursuing his masters degree. Jones also submitted testimony that had been given in another criminal case

by Dr. Ranajit Chakraborty, a population geneticist who had served on a New York State committee to evaluate DNA analysis methodologies.

1. *Testimony of Dr. O'Connor*

Dr. O'Connor was recognized, without objection, as an expert in forensic science and the statistical analysis of DNA evidence. (*See Daubert* Hearing Transcript ("*Daubert* Tr.") at 10-11.) His testimony included information on the operations and accreditation of OCME; the fundamentals of DNA analysis; the design, development, and validation of FST; and FST's analysis of the Glove DNA.

OCME, founded a century ago, is the largest public forensic laboratory in the country; it is not affiliated with any law enforcement agency. It is accredited in New York by the State's Commission on Forensic Science ("NYS Forensic Science Commission" or "NYS Commission"), and nationally by the American Society of Crime Laboratory Directors Laboratory Accreditation Board. To maintain its accreditations, and to follow the quality assurance standards and guidelines established by the Scientific Working Group of DNA Analysis Methods ("SWGDAM"), a group run by the Federal Bureau of Investigation ("FBI"), OCME is required to establish and adhere to certain protocols and standard operating procedures for every step of every procedure

an analyst performs in the laboratory. OCME is regularly audited by the National Forensic Science Technology Center ("NFSTC"). (*See id*. at 11-14, 28.)

OCME began doing DNA testing around 1993. Dr. O'Connor explained key terms and concepts of DNA analysis such as "allele," which refers to the occurrence of a different form of DNA at a specific "locus"--or location--on a DNA strand. The alleles at comparable loci vary from person to person and are the basis of individual DNA profiles. All DNA analysis begins with several common steps, including (1) extraction of a DNA sample from a source; (2) "quantitation," *i.e.*, estimating the amount of DNA--or "quant"--in the sample, by means of polymerase chain reaction ("PCR"); and (3) amplification, which entails making millions of copies of multiple loci from the DNA sample being analyzed, in order to provide enough material to study. (*See id*. at 23-24.) Dr. O'Connor testified that the estimation of quant had about a 30 percent rate of error--the best that could be expected, even using OCME's quantitation method, which is considered the "gold standard of what's used in the industry" (*id*. at 24).

DNA samples may be single-source, *i.e.*, contain just one individual's DNA, or may be "mixtures." A mixture may be simple, in that an individual DNA

profile can be discerned, and thus separated out for analysis, or it may be "complex," in that a single DNA profile cannot be discerned and the entire mixture must be analyzed. (*See*, *e.g.*, *id*. at 21.) FST is a program that was developed by OCME in 2008 to analyze complex DNA mixtures.

FST calculates a "likelihood ratio" (or "LR"), *i.e.*, a statistic reflecting a "ratio of two different probabilities" that has been commonly used in other scientific disciplines "for decades." (*Id*. at 30, 32.) Dr. O'Connor testified that "most laboratories [were] moving to some sort of likelihood ratio calculation" for analyzing DNA mixtures, on the recommendation of the International Society of Forensic Genetics. (*Id*. at 40; *see id*. at 37-38.) Likelihood ratios reflect the comparison of (1) the "prosecution hypothesis" that the person of interest contributed to the mixture, using that number as a numerator, against (2) the "defense hypothesis" that other individuals make up the mixture, using that number as the denominator. (*See id*. at 30, 33.) If the result of dividing the numerator by the denominator is less than 10, it is considered to provide "limited support" for the prosecution's hypothesis; results of 10-100 show "moderate support," 100-1,000 show "strong support," and more than 1,000 show "very strong support" for the prosecution's hypothesis. (*See id*. at 33.)

Dr. O'Connor testified that in the course of validating FST's methodology, OCME did more than 500,000 comparisons against a database of persons known *not* to be DNA contributors, to determine how often the program would generate a false positive. The results showed that a false positive was generated only .03 percent of the time. (*See id*. at 82; *see also id*. at 151 (testimony of Dr. Mitchell.) Dr. O'Connor stated that FST had been validated both in-house and by the NYS Forensic Science Commission and its DNA subcommittee ("NYS DNA Subcommittee") (*see id*. at 81; *see also* Part I.B.2. below (testimony of Dr. Mitchell)). A summary of FST's validation was published in a peer-reviewed journal, and FST had been discussed at many presentations and workshops for forensic professionals.

Although OCME was the only laboratory that used FST, Dr. O'Connor testified that FST was generally accepted in the scientific community. It shared a common approach with likelihood-ratio programs used by other laboratories (with one key difference, *see* Part I.B.2. below), and these programs generally reach the same conclusion, although the exact figures generated would vary. An NFSTC audit performed in mid-2012 concluded that FST was not a novel tool. (*See id*. at 82, 45-46, 14-15.)

In 2017, OCME stopped using FST for new cases. At that time, the Combined DNA Index System ("CODIS")--the FBI's national database, to which OCME contributes its data--raised the minimum number of loci that must be amplified during the preliminary stage of analysis. FST, which had conformed to CODIS's prior standards, became incompatible. Rather than altering the FST codes to comply with these new standards, and be forced to go through another rigorous validation process, OCME opted to switch to a DNA testing program that was commercially available. Dr. O'Connor testified that the change had nothing to do with the validity or reliability of FST.

With respect to the FST analysis of the glove found near the scene of the robbery, Dr. O'Connor testified that OCME had followed its established protocols, including having a supervisor review the initial report to verify that its conclusions were supported by data. Dr. O'Connor agreed with the report's findings that the sample was a complex mixture of DNA from at least three individuals. The Glove DNA's likelihood ratio was 1,340, showing very strong support for the prosecution hypothesis that the mixture was composed of DNA from "Jones and two unknown unrelated individuals," instead of "three unknown unrelated individuals." (*Id.* at 55-56.)

2. *Testimony of Dr. Mitchell*

The testimony of Dr. Mitchell, who without objection was qualified as an expert in human genetics, molecular biology, and forensic science research (*see Daubert* Hrg. Tr. 96), included explanations of FST's creation and implementation, its extensive mock case work in connection with validation, and its manner of dealing with common phenomena known as drop-out and drop-in. "Drop-out" describes the situation in which an allele that is known to exist at a particular locus in the sample is not found in the analysis; drop-in is the situation in which an allele that is known not to belong to the person contributing the sample shows up in the analysis. (*See, e.g., id*. at 106, 109.)

She explained that among DNA testing programs, FST is unique in the way it deals with drop-in and drop-out, as it estimates their likely occurrences based on the amount of DNA in the sample, *i.e.*, the quant. Although other programs base drop-out estimates on the "height" of allelic peaks that appear during preliminary analysis, OCME tested different methods for a year and found that, on its own equipment, the DNA quant, measured by real-time PCR, was the strongest predictor of drop-out. (*See id*. at 109-11.) FST's use of quant to estimate drop-out was presented

to the NYS DNA Subcommittee, which validated FST's methodology. (*See, e.g., id.* at 112.)

OCME also decided to set the ultimate drop-out rate one standard deviation lower than the quant study suggested, so as to minimize the number of possible false positives, even though this would also reduce the likelihood ratios generated for true positives. OCME also limited FST analysis to two- and three-person samples, because the greater the number of contributors, the higher the drop-out rate.

OCME's decisions were evaluated and validated both internally and externally. According to Dr. Mitchell, validation took a year and a half and involved extensive mock case work--processed according to OCME protocols and replicating common sources of error, such as degradation--on 439 two- and three-person, high- and low-mass mixtures, far exceeding SWGDAM's recommendation of at least 50 mixtures. The NYS DNA Subcommittee approved the FST methods after extensive review throughout the validation process, and its parent NYS Commission granted approval after its own independent review. (*See, e.g., id.* at 136-39, 159-64.)

OCME's validation also included "noncontributor testing"--*i.e.*, inclusion of 1,200 persons whose DNA was known not to be included in the DNA samples--in order to determine the rate at which FST would produce false positive results by

generating likelihood ratios from the database of noncontributor individuals. (*See id*. at 149.) Dr. Mitchell testified that of 500,000 likelihood ratios, only 163, or 0.03 percent, were false positives. (*See id*. at 151.) Among the likelihood ratios showing "very strong" support for the prosecution hypothesis (*i.e.*, a likelihood ratio of over 1,000) there were only 5 false positives, reflecting, in that category, a false-positives rate of only 0.0009 percent. (*See id*. at 152.)

Dr. Mitchell also noted that an alteration had been made to FST's source code to correct an error discovered after validation: Two different statistical adjustments that were part of the code, if applied to a sample in which the alleles at a given locus added up to 97 percent or more of the allele frequencies in a population (which had not occurred during validation), could yield a likelihood ratio of less than zero, a statistical impossibility, given that both the numerator and denominator in the likelihood ratio must be numbers between one and zero. OCME considered alleles totaling 97 percent or more to be uninformative because virtually every person could be a DNA contributor to such a site, and to avoid such impossible results OCME simply imposed an allele cap of 97, eliminating from consideration in the ultimate analysis any locus where the alleles totaled 97 percent or more. (*See id*. at 171-76.) Dr.

Mitchell testified that experts in the field endorse such a method (*see id*. at 174), and that this solution generally lowers the likelihood ratio, making it less strong in either direction (*see id*. at 177). She testified that a performance check verified that this alteration did not interfere with the overall efficacy of the program. (*See id*. at 177-79.) The modification was found acceptable in a subsequent audit by NFSTC, referred to in Dr. O'Connor's testimony. (*See id*. at 15.)

3. *The Defense's Expert Testimony*

Jones's first witness at the *Daubert* hearing was Dr. Eli Shapiro, who was allowed to testify as an expert in forensic DNA analysis (*see Daubert* Tr. 507). He testified that in his opinion FST does not produce reliable results, because it works in generalizations and does not take into account enough case-specific variables. (*See id*. at 509.) He took issue with FST's methods for estimating drop-out, suggesting that the practice of underestimating drop-out leads to inflated likelihood ratios. (*See id*. at 586-87.)

Dr. Shapiro had worked at OCME in 2000-2011 as a training coordinator. He had a Ph.D. in biology and had done postdoctoral study in neurobiology; he had not

done any postdoctoral study in statistics, or population genetics, or forensic DNA. He acknowledged that he was not a computer expert or a mathematics expert. He was not a member of any of the professional organizations relating to forensic DNA analysis. During his time of employment at OCME, he had never used FST. (*See id*. at 488-90, 502-04.)

Dr. Shapiro also questioned the legitimacy of OCME's noncontributor testing. (*See id*. at 574.) He had made a "combined probability of inclusion" ("CPI") calculation, using data from OCME's validation studies, and had concluded that OCME's false-positive studies underestimated false-positive rates. On cross-examination, he acknowledged that CPI does not consider drop-in or drop-out, and thus did not replicate the findings of FST. He admitted that because CPI does not consider drop-in or drop-out, "LR programs are preferred to CPI in the scientific community." (*Id*. at 660.)

Jones also called as a witness at the hearing Nathan Adams, who held a bachelors degree in computer science and was pursuing his masters degree. He had reviewed FST's source code, and he focused principally on the post-validation allele cap modification (described by Dr. Mitchell in Part I.B.2 above). Adams testified that in his opinion the allele cap rendered FST unreliable, in that it led to different

likelihood ratios. He opined that more extensive testing was required to determine the true effect of the modification. (*See id*. at 684, 752, 755-57.)

Finally, Jones submitted the trial testimony that had been given in a prior criminal case in which Dr. Chakraborty, testifying for the defense, opined that FST was flawed. Dr. Chakraborty had been a member of the NYS DNA Subcommittee that approved FST. He apparently had seen no flaw in the program to prevent its approval; his testimony was that his "rationale of voting yes" was "if we don't find any flaw with it, once it is open to the public, if there is a flaw, it will come out." (*Daubert* Tr. 847-48 (internal quotation marks omitted).)

C. *The District Court's* Daubert *Ruling*

Following the close of the five-day *Daubert* hearing, the district court entered an order denying Jones's motion to exclude FST's Glove DNA analysis; it memorialized the decision in an opinion dated June 5, 2018, *see United States v. Jones*, 2018 WL 2684101 (S.D.N.Y. June 5, 2018) ("*Jones I*").

The court found persuasive the evidence that had been presented as to the construction and testing of FST, including the procedures OCME used to determine

the validity of its methodology, the manner in which OCME tested for false positive results, and the empirical process OCME used to develop its drop-in and drop-out parameters. It noted that OCME's extensive testing of

> over 2,000 DNA samples, drawn from known contributors, of varying weights and mixtures, . . . us[ing] that data to deduce probabilities of drop in and drop out in a given DNA sample. . . . [and] then determin[ing] how often a piece of DNA dropped out, . . . revealed that the drop-out frequency correlated with, among other factors, the quantity of DNA amplified (*i.e.*, "quant"), the number of amplification cycles, the number of contributors to the sample, and the approximate mixture ratio.

Id. at *4.

The court also found persuasive the external validation and peer review FST had undergone, first by the NYS Forensic Science Commission and its DNA Subcommittee, describing the latter as "a group of well-known and respected scientists and experts in the field of DNA analysis" whose "members include distinguished experts in the fields of forensic science, population genetics, molecular biology, and laboratory standards," *id*. at *4, then via audit by the NFSTC, *id*. at *6, and finally "at numerous conferences and in journals," *id*. The court noted that OCME adhered to SWGDAM's guidelines in performing its internal validation. *See id*. at *5.

The court rejected Jones's contention that FST was unreliable on the basis

that OCME "use[d] quant as a factor in setting the drop-out rates in the FST," rather than using "peak height." *Id*. at *5. It noted that OCME made that choice because of its observation that, when using its own lab equipment, quant, rather than peak height, was the more predictive as to drop-out. Given that the use of quant had been approved by the NYS DNA Subcommittee during its review of FST, the court found that "[t]he evidence in the record, on balance, supports [a finding] that OCME's use of quant rather than peak height is not a flaw, and even if it could be considered a flaw, it is not large enough to exclude expert testimony on the FST in this case." *Id*. at *11.

Having in mind that *Daubert* sets out five non-exclusive factors that a court may consider in determining the reliability of expert testimony, *i.e.*,

> (1) whether a theory or technique has been or can be tested; (2) "whether the theory or technique has been subjected to peer review and publication;" (3) the technique's "known or potential rate of error;" (4) "the existence and maintenance of standards controlling the technique's operation," and (5) whether the technique is generally accepted in the relevant scientific community,

Jones I, 2018 WL 2684101, at *7 (quoting *Daubert*, 509 U.S. at 593-94), the district court concluded that only two of those factors were "in meaningful dispute" in this case: FST's known or potential error rate, and whether FST was generally accepted in the scientific community, *Jones I*, 2018 WL 2684101, at *9.

As to the factor of known or potential error rate, the district court held that while there was no known error rate for FST, OCME's analysis of FST's false positives was compelling. *See id*. This component of the validation study "showed the FST's false positive rate to be very low." *Id*. While there appear to be occasional typographical numerical or terminology flaws in the opinion--*see id*. at *5 (referring to the strong support category, instead of the very strong support category, as showing the false positive rate of 0.0009%"), and *id*. at *9 (referring to the very strong support category as showing the false positive rate of 0.009%")--the court's ultimate conclusion is perfectly clear. The evidence at the *Daubert* hearing was explicit that where the likelihood ratio was "in the very strong support category," *i.e.*, "greater than 1,000," the rate of false positives "was .0009 percent." (*Daubert* Tr. 152.) Citing that page of the transcript, *see Jones I*, 2018 WL 2684101, at *9, and noting that the likelihood ratio calculated for the Glove DNA was 1,340, *id*., the court concluded that the relevant false-positive rate applicable to the glove was "even lower than the overall false positive rate," of "0.03%," *id*.

The district court found Dr. Shapiro's critique of OCME's false-positive studies unpersuasive because his "hypothetical study . . . fail[ed] to mimic the

parameters that OCME used in validating the FST, in which OCME considered, among other factors, both allelic drop in and drop out." *Id*. Instead, Dr. Shapiro had used a different type of calculation that, "[b]y Dr. Shapiro's own admission," was "disfavored in the scientific community." *Id*.

As to the question of general acceptance, the court found that FST was generally accepted in the scientific community. *See id*. at *10. It noted that although OCME was the only laboratory using FST, and Jones's was the first *Daubert* challenge to FST in this Circuit, the court was aware of more than 40 New York State cases that had rejected challenges to the admission of FST, despite the fact that the New York standards for admission of expert testimony tended to be more stringent than the Federal Rules of Evidence. *See Jones I*, 2018 WL 2684101, at *8. The district court stated that

> nearly every court to have considered the FST has found it to be a reliable tool that is generally accepted by the scientific community. Importantly, these court rulings are corroborated by the fact that the FST has been approved for use in case work by members of the relevant scientific community and subjected to peer review.

Id. at *10.

While Jones argued that FST's unique combination of otherwise accepted

components rendered FST novel and thus not accepted in the scientific community, the district court noted that Jones had pointed to no evidence from the general scientific community (e.g. a peer-reviewed article, a presentation, or a study) challenging the validity of FST. Although FST's combination of components was unique, the underlying components themselves were generally accepted, and "'a slight modification of an otherwise reliable method will not render an expert's opinion *per se* inadmissible.'" *Id*. (quoting *Amorgianos v. National R.R. Passenger Corp.*, 303 F.3d 256, 267 (2d Cir. 2002) ("*Amorgianos*")). The court noted that "[e]ach of the assumptions incorporated into the FST--including allelic drop-out . . . has been the subject of . . . exhaustive testing, validation, peer-review, accreditation, auditing, and other review processes." *Jones I*, 2018 WL 2684101, at *10.

The court concluded that to the extent that the competing expert testimony could raise a question about the "underlying assumptions" of this generally accepted tool, such debate is best heard by a jury, which may accordingly adjust the weight it gives such evidence. *Id*.; *see also id*. at *11 (even if there are valid concerns about the use of "quant to determine drop-out rates, it is not the role of the courts to weigh the credibility of competing scientific evidence. Such determinations should be

left to a jury.").

Similarly, the court concluded that Jones's arguments that FST was less reliable than traditional DNA evidence, and that FST should not have been used on this particular sample, were arguments that went to the weight of the evidence, not its admissibility. *Id*. at *12.

D. *The Trial of the Robbery Charges*

In the ensuing trial on the Robbery Charges, the government presented some 20 witnesses, who included two witnesses who testified about the Hat DNA and the Glove DNA, and others who testified to, *inter alia*, the robbery itself, the capture of one of the robbers, the finding of the hat and glove discarded by the other robber, and the ensuing investigation. After a seven-day trial, Jones was convicted on all counts.

II. THE CHALLENGE TO THE ADMISSION OF THE GLOVE DNA

Jones's only challenge to his convictions on the Robbery Charges is his contention that the district court abused its discretion in admitting in evidence the

Glove DNA. He argues that "FST fails to satisfy *Daubert*" (Jones brief on appeal at 33), contending principally that "FST is unreliable because [it] uses predetermined drop-out rates that do not account for certain real world scenarios" (*id*. at 26) and because "so much of what they do is based on estimations," including the allelic frequencies and the number of contributors to a sample (*id*. at 28); and he argues that FST cannot be "generally accepted" because OCME's is the only laboratory that uses it (*id*. at 34-35). He also challenges various aspects of FST's design, including OCME's decision to use quant over peak height for estimating drop-out rates, and he argues that FST's overall error rate is 30 percent, the same as the error rate in the determination of quant (*see id*. at 27-28, 33-34). He also complains of the decision to use a qualitative, verbal scale for reporting results. (*See id*. at 32.) We are unpersuaded that there was any abuse of discretion in the district court's conclusion that FST evidence was sufficiently reliable to be admitted in evidence and that Jones's contrary contentions go to the weight of that evidence, not to its admissibility.

Federal Rule of Evidence 702 allows the admission of the testimony of an expert witness if

> (a) the expert's scientific, technical, or other specialized knowledge will help the trier of fact to understand the evidence or to

> determine a fact in issue; (b) the testimony is based on sufficient facts or data; (c) the testimony is the product of reliable principles and methods; and (d) the expert has reliably applied the principles and methods to the facts of the case.

Fed. R. Evid. 702. The fundamental requirements are thus that such evidence be relevant and reliable. *See, e.g., Daubert*, 509 U.S. at 587-92; *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141, 152 (1999) ("*Kumho*").

"While the proponent of expert testimony has the burden of establishing by a preponderance of the evidence that the admissibility requirements of Rule 702 are satisfied, . . . the district court is the ultimate gatekeeper." *United States v. Williams*, 506 F.3d 151, 160 (2d Cir. 2007) (internal quotation marks omitted). In this gatekeeping role, "the district court should consider the indicia of reliability identified in Rule 702." *Amorgianos*, 303 F.3d at 265. The Supreme Court has observed that many factors "will bear on the inquiry" of whether Rule 702 is satisfied, *Daubert*, 509 U.S. at 593--including the five non-exclusive factors cited by the district court in *Jones I*, 2018 WL 2684101, at *7--and that "the inquiry envisioned by Rule 702 is . . . a flexible one," *Daubert*, 509 U.S. at 594. "[T]he trial judge must have considerable leeway in deciding in a particular case how to go about determining whether particular expert testimony is reliable," *Kumho*, 526 U.S. at 152.

Accordingly, both the trial court's decision to admit expert testimony and the method by which the court reaches that decision are reviewable only for abuse of discretion. *See, e.g., id.*; *Amorgianos*, 303 F.3d at 264. Discretion in this context is broad and will be found to have been abused only when the decision to admit or exclude expert scientific testimony was "manifestly erroneous." *E.g., id.* at 265 (internal quotation marks omitted); *Boucher v. United States Suzuki Motor Corp.*, 73 F.3d 18, 21 (2d Cir. 1996) (internal quotation marks omitted). A decision to admit can be manifestly erroneous, for example, if the "expert opinion is based on data, a methodology, or studies that are simply inadequate to support the conclusions reached," *Amorgianos*, 303 F.3d at 266, or if the opinion "is speculative or conjectural, . . . or if it is based on assumptions that are so unrealistic and contradictory as to suggest bad faith or to be in essence an apples and oranges comparison," *Boucher*, 73 F.3d at 21 (internal quotation marks omitted). But "other contentions that the assumptions are unfounded go to the weight, not the admissibility, of the testimony." *Id.* (internal quotation marks omitted).

We see no error, much less any manifest error, in the decision of the district court in the present case. As detailed in Part I.B. above, the five-day Daubert

hearing exhaustively dissected FST's development, methodology, and implementation. The court permissibly found that the only two *Daubert* factors that were meaningfully in dispute were the known rate of error in FST analysis, and the question of general acceptance of FST in the scientific community. It permissibly found that both factors favored denial of Jones's motion to exclude the Glove DNA evidence.

While the hearing testimony indicated that FST does not have what experts would describe as a "known error rate," the court had leeway to find it appropriate to substitute consideration of the rate at which FST would produce false positive results. And in considering the false-positive rate, there was no abuse of discretion in the court's decision to focus on FST's overall rate of false positives instead of, as urged by Jones, limiting its focus to one single early element in the process--the estimation of quant, where there is a 30-percent rate of error. Notably, all DNA analysis involves quantitation, and the *Daubert* hearing testimony indicated that the quantitation method OCME uses is considered the "gold standard." Further, to the extent that FST integrates quantitation more directly into its analysis than other programs do (*i.e.*, in estimating drop-out), the false-positive rate takes this into account. Thus, despite the rate of error in determining quant, the evidence showed that FST's overall false-positive rate is 0.03 percent, a mere three-hundredths of one

percent; and that for "very strong support" likelihood ratios (*i.e.*, those more than 1,000)--including that for the Glove DNA here, which was 1,340--the false-positive rate is a mere 0.0009 percent. We see no abuse of discretion in the district court's conclusion that this evidence indicated reliability sufficient to support admission of the Glove DNA evidence.

And, as described in Part I.C. above, the district court clearly explained its finding that FST is sufficiently accepted--both in its admission in scores of New York State cases and in "the fact that the FST has been approved for use in casework by members of the relevant scientific community and subjected to peer review," *Jones I*, 2018 WL 2684101, at *10--to warrant its admission here.

In sum, we see no error, much less any manifest error, in the district court's admission of the Glove DNA evidence in this case.

Finally, we note that even a manifestly erroneous decision will be "harmless," if "it is not likely that [the error] contributed to the verdict." *United States v. McGinn*, 787 F.3d 116, 127 (2d Cir. 2015). Were we to consider the district court's decision to admit the Glove DNA in this case to have been error, we would find it beyond any doubt harmless, given all of the government's other evidence that Jones was the gun-wielding robber, including the cell tower data showing that Jones's

cellphone's movement tracked the movement of the robbers, Jones's admission to Christopher, and the unchallenged evidence that the escaping robber's discarded hat bore Jones's DNA.

III. CHALLENGES TO THE NARCOTICS CONSPIRACY CONVICTION

Count One of the Indictment alleged that Jones and six other named defendants, from 2011 through August 2016, conspired to distribute and possess with intent to distribute five kilograms and more of cocaine, 280 grams and more of cocaine base, and one kilogram and more of heroin. Count Two alleged that those seven defendants carried and used a firearm in furtherance of that conspiracy. The district court, in addition to ordering that the Robbery Charges be tried separately from the Narcotics Charges, ordered two separate trials for the Narcotics Charges, with Jones scheduled to be tried with just two of the other named codefendants. As those two codefendants then entered pleas of guilty before the trial, Jones was tried on the Narcotics Charges alone. As indicated above, he was convicted of conspiracy to distribute and possess with intent to distribute the narcotics; he was acquitted on the count charging him with using and carrying a firearm in furtherance of the narcotics

conspiracy.

In this appeal, Jones contends that he is entitled to a new trial on the narcotics conspiracy charge, either because the court should have given the jury an instruction he requested as to multiple conspiracies, or because newly discovered evidence provided an additional basis for impeachment of Christopher, whom Jones characterizes as the government's star witness at his trial on the Narcotics Charges. We find no merit in either contention.

A. *Conspiracy Instructions*

Jones complains that the trial court refused to give the jury an instruction he requested with respect to multiple conspiracies, and he speculates that the jury may have convicted him--or may have made findings as to the quantity of narcotics for which he was responsible--on the basis of conduct of members of a conspiracy of which he was not a member. We are unpersuaded.

A defendant complaining that the court declined to give his requested instruction "bears the burden of showing that the requested instruction accurately represented the law in every respect, and that, viewing as a whole the charge actually given, he was prejudiced." *United States v. Applins*, 637 F.3d 59, 72 (2d Cir. 2011)

(internal quotation marks omitted). In order to have a judgment overturned for a refusal to give a requested multiple-conspiracy charge, a defendant must show both that there was evidence of "separate networks operating independently of each other" and that he suffered "substantial prejudice resulting from the failure to give the requested charge." *United States v. Barlin*, 686 F.2d 81, 89 (2d Cir. 1982). Where "only one conspiracy [was] alleged and proved," it is not error for the trial court not to give a multiple-conspiracies instruction. *United States v. Maldonado-Rivera*, 922 F.2d 934, 962 (2d Cir. 1990) (internal quotations omitted).

We view Jones's requested instruction not only as unnecessary but also as likely confusing. For example, it stated that "[p]roof of *separate* or independent narcotics conspiracies is not proof of the single *overall* narcotics conspiracy charged in the Indictment, *unless one of them is* the single narcotics *conspiracy charged in the Indictment*" (Letter from Attorneys for Jones to Judge Broderick dated April 21, 2017, at 1 (emphases added)). In addition to the fact an "overall" conspiracy would encompass any others--which would not warrant a verdict favoring Jones--this proposed language also raised the conundrum that the conspiracy alleged in the Indictment could be separate from itself. Jones's request also included an instruction

that the jury could "find that the narcotics conspiracy charged in Count One of the Indictment *did not exist*" (*id*. (emphasis added)), but that some other conspiracy did exist; and it then discussed the potential for identity of purpose and an "overlap in membership" of "both conspiracies" (*id*.)--one of which, by the suggested hypothesis, did not exist. We see no abuse of discretion in the court's declining to give Jones's potentially confusing instructions.

Jones was the only defendant at his trial. The court duly found a multiple-conspiracy charge unnecessary "under the facts of this case" and given that "[t]here is no one else that the jury is considering here" (Narcotics Trial Transcript at 727).

The court properly instructed the jury that in order to convict Jones of conspiracy it must find that he knowingly joined the conspiracy that was alleged in the Indictment. It also properly instructed that he could not be held responsible with respect to controlled substances dealt with by other persons unless "the type and quantity were either known to [him] or reasonably foreseeable to him, and within the scope of the criminal activity that he jointly undertook." (*Id*. at 848.) Jones does not contend that the instructions given were erroneous, and we see no error.

B. *Newly Discovered Evidence*

After Jones's trial on the Narcotics Charges, the government learned that Christopher had violated his cooperation agreement by having contraband substances smuggled into the detention center at which he was being held. Jones argues that he could profitably have used that information at trial to impeach Christopher's credibility and should therefore have a new trial. The district court denied Jones's motion for a new trial in an opinion dated July 27, 2018, *see United States v. Jones*, 2018 WL 3599730 (S.D.N.Y. July 27, 2018) ("*Jones II*"). We see no basis for overturning its decision.

"A motion for a new trial on the ground of newly discovered evidence is granted 'only *in the most extraordinary circumstances*.'" *United States v. Parkes*, 497 F.3d 220, 233 (2d Cir. 2007) ("*Parkes*") (quoting *United States v. Spencer*, 4 F.3d 115, 118 (2d Cir. 1993) ("*Spencer*") (emphasis in *Spencer*)). "Newly discovered evidence supports the grant of a new trial only if the defendant demonstrates," *inter alia*, "that the evidence is 'so material and noncumulative that its admission would probably lead to an acquittal.'" *Parkes*, 497 F.3d at 233 (quoting *United States v. Zagari*, 111 F.3d 307, 322 (2d Cir. 1997) (other internal quotation marks omitted)). "'[N]ew impeachment

evidence is *not* material, and thus a new trial is *not* required when the suppressed impeachment evidence merely furnishes an additional basis on which to impeach a witness whose credibility has already been shown to be questionable.'" *Parkes*, 497 F.3d at 233 (quoting *United States v. Wong*, 78 F.3d 73, 79 (2d Cir.1996) (emphases in *Wong*) (other internal quotation marks omitted)). "[T]he discovery of new evidence which merely discredits a government witness and does not directly contradict the government's case ordinarily does not justify the grant of a new trial." *Spencer*, 4 F.3d at 119 (internal quotation marks omitted). We review the district court's denial of a new trial motion only for abuse of discretion. *See, e.g., Parkes*, 497 F.3d at 232.

These standards are not met here. We see no reasonable probability that the new impeachment ammunition against Christopher would have contradicted the government's case. We note that although Jones refers to Christopher as the government's "star witness" (Jones brief on appeal at 2, 5, 20, 41), Christopher was one of 10 witnesses at the trial on the Narcotics Charges; and there were two additional cooperating witnesses who, like Christopher, testified about Jones's drug trafficking activities.

Further, we note that Jones had ample opportunity to impeach

Christopher's credibility. As the district court stated,

> [Jones] contends that, "[h]ad Christopher admitted these additional serious crimes prior to Trial, his credibility would have been much more seriously attacked--the result of which would have likely been an acquittal." (Def.'s Mem. 5.) As an initial matter, in stating that Christopher's "credibility would have been much *more* seriously attacked," (*id.*), Jones essentially concedes that Christopher's post-trial disclosure of the additional crimes amounted to cumulative impeachment material. Moreover, *the impeachment material at issue does not directly contradict the Government's case, and it is well-settled case law in this Circuit that such evidence does not warrant a new trial under Rule 33. See, e.g.*, *Spencer*, 4 F.3d at 119. Jones had ample evidence with which to impeach Christopher, including, among other things, (i) his shooting of four men--likely killing them--when he was approximately twelve or thirteen years old; (ii) his failure to adhere to his cooperation agreement by smoking marijuana in jail; and (iii) his admission that he lied during prior grand jury testimony. (See Tr. 54-84, 512-16, 532-40, 586-87; GX-13.) Simply put, *Jones has not demonstrated that the new impeachment evidence is "so material and noncumulative that its admission would probably lead to an acquittal*." *Parkes*, 497 F.3d at 233 (internal quotation marks omitted). For these reasons, I find that the new impeachment evidence is cumulative, and the discovery of this evidence does not warrant a new trial.

Jones II, 2018 WL 3599730, at *5 (footnote omitted) (emphases ours).

We see no abuse of discretion in this ruling.

CONCLUSION

We have considered all of Jones's arguments on this appeal and have found them to be without merit. The judgment is affirmed.