**No. 20-1191**

**IN THE UNITED STATES COURT OF APPEALS**
**FOR THE FOURTH CIRCUIT**

WIKIMEDIA FOUNDATION,

Plaintiff-Appellant,

v.

NATIONAL SECURITY AGENCY, *et al.*,

Defendants-Appellees.

On Appeal from the United States District Court for the District of Maryland at Baltimore

# BRIEF OF AMICI CURIAE EVIDENCE LAW PROFESSORS IN SUPPORT OF PLAINTIFF-APPELLANT AND SUPPORTING REVERSAL

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## INTEREST OF AMICI CURIAE[1]

Amici curiae David H. Kaye, Edward J. Imwinkelried, D. Michael Risinger, and Rebecca Wexler submit this brief pursuant to Rule 29 of the Federal Rules of Appellate Procedure. Amici curiae are professors of evidence law, and their expertise can aid the Court in the resolution of this case. Amici focus this brief on legal errors made by the district court in relying on Federal Rule of Evidence 702, as construed in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), as a reason to grant summary judgment. Amici's employment and titles are listed below for identification purposes only.

**David H. Kaye** is Distinguished Professor of Law Emeritus at Pennsylvania State University School of Law (University Park) and Regents' Professor Emeritus at Arizona State University Sandra Day O'Connor School of Law. Professor Kaye is a recipient of the John Henry Wigmore Award for Lifetime Achievement from the Association of American Law Schools ("AALS") Section on Evidence Law and is an author of multiple editions of The New Wigmore on Evidence: Expert Evidence; McCormick on Evidence; and Modern Scientific Evidence: The Law

[1] In accordance with Rule 29(a) of the Federal Rules of Appellate Procedure, no party's counsel authored this brief in whole or part, and no person or persons other than *amici curiae* contributed money intended to fund the preparation or submission of this brief. All parties have consented to the filing of this brief.

and Science of Expert Testimony; and the Federal Judiciary Center ("FJC") Reference Manual on Scientific Evidence.

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## INTRODUCTION

At the core of the threshold standing issue in this litigation is a question of fact: Does the National Security Agency's ("NSA") Upstream surveillance program lead to the interception, copying, and reviewing of at least some of the Wikimedia Foundation's trillions of communications? As is often true in litigation, circumstantial evidence and expert opinion must be relied on to establish crucial facts—in this case, facts relating to standing. That is what Wikimedia has sought to do in its suit challenging the lawfulness of the NSA's surveillance activities.

Leveraging the fact that Wikimedia has no direct evidence of the operational details of NSA surveillance—because details are classified and claimed to be state secrets—the government moved for summary judgment. As part of this motion, the government-retained expert opined, "[b]ased on what is publicly known about the NSA's Upstream collection technique," that "in theory" the NSA's surveillance could be conducted so as not to "involve NSA interaction with Wikimedia's online communications." Schulzrinne Decl. ¶ 1 (JA.1:0719). This expert did not say that the NSA used the methods he envisioned nor did he claim that it was likely that the NSA did. Wikimedia in response offered the report of another expert who concluded that the measures the government's expert described were "technically possible but exceedingly unlikely" in this context. This expert gave detailed

reasons to conclude as "a virtual certainty that the NSA has, in the course of the [U]pstream collection program, copied, reassembled and reviewed at least some of Wikimedia's communications." Bradner Decl. ¶ 6(c) (JA.2:0926–27). Further declarations from each expert followed. Wikimedia's expert discussed the practical realities of the NSA's stated goal of "comprehensively acquir[ing] communications that are sent to or from its targets" in light of Internet technology. Bradner Decl. ¶ 333 (JA.2:1041–42) (quoting a surveillance program report by the Privacy and Civil Liberties Oversight Board). The government's expert dismissed that reasoning as "non-technical," 3d Schulzrinne Decl. ¶ 6 (JA.7:4022–23), "speculative," *id*. ¶ 5 (JA.7:4022), and based on a selective reading of outdated documents, *id*. ¶ 4 (JA.7:4021–22).

This is the stuff of which trials are made. Yet the district court determined that, inasmuch as a scenario exists in which it is *technologically possible* for the NSA to avoid such surveillance, Wikimedia's expert opinion that the government's theoretical scenario was highly implausible in the context of a comprehensive surveillance program is either unpersuasive or totally inadmissible "pursuant to Rule 702, Fed. R. Evid., and the standards articulated in *Daubert v. Merrell Dow Pharmas., Inc.*" *Wikimedia Found. v. NSA*, 427 F. Supp. 3d 582, 604–05 (D. Md. 2019) (footnote omitted).

As scholars and teachers of evidence law, we are puzzled by the district court's highly abbreviated analysis of Rule 702 and *Daubert*, as well as the court's consequent decision to rule inadmissible opinions of the type that Wikimedia's expert offered in this case. The court's decision is troubling not only because it mistakenly led to dismissal of the claims in this case, but also because of its implications for the admissibility of expert evidence in other cases. An expert opinion based on a technical understanding of Internet communications and surveillance technology, together with public information on the goals and needs of the NSA program, might or might not ultimately be persuasive following the normal procedure of live testimony subject to cross-examination and counterproof. But it is within the broad zone of relevant information that could assist the trier of fact under the Federal Rules of Evidence. This brief therefore supplements and addresses the district court's cursory and, we believe, mistaken application of *Daubert* and Rule 702.

## ARGUMENT

District courts have an important but limited role when determining the admissibility of expert testimony under Federal Rule of Evidence 702. As "gatekeepers," they ensure expert testimony is relevant and reliable and thus can help the trier of fact determine a fact in issue. Here, the district court failed in its gatekeeping role by striking and failing to consider Wikimedia's expert's critique

of the government expert, who put forth a hypothetical method for the NSA to filter out Wikimedia's Internet communications *before* it collected other Internet traffic. Wikimedia's expert, Scott Bradner—who is unquestionably an expert on the technology of Internet communications and drew on his decades of experience in the field—evaluated the method for monitoring Internet communications that the government's expert constructed out of whole cloth without ever claiming that this was the method that the NSA likely used. Mr. Bradner's expert conclusion was that this hypothetical method, because of its impracticality and other flaws, would not have fit the NSA's intelligence-gathering needs. He opined that the NSA instead most likely implements a "copy-then-filter" procedure in the course of conducting Upstream surveillance—basing his opinion on a combination of technical knowledge about Internet infrastructure, public government documents and admissions describing the NSA's approach to its surveillance program, and reasonable inferences drawn from this record.

This testimony from a recognized expert, which bears directly on the issues in the case and uses knowledge and information that only an expert can appreciate, plainly met the admissibility requirements of Rule 702, both before and after *Daubert*. The court abused its discretion in two regards: First, the court failed to credit as potentially admissible evidence Mr. Bradner's opinion criticizing the government's expert's hypothetical despite the reliability of Mr. Bradner's

reasoning, and instead chose to engage substantively in the experts' dispute. *See Wikimedia*, 427 F. Supp. 3d at 606–10. This judicial error rests in part on a second abuse of discretion: the court dismissed certain non-technical premises of Mr. Bradner's opinion as "unsupported speculation" about the NSA's practices and priorities,[2] *id.* at 604–05, even though Mr. Bradner pointed to specific facts supporting each of his inferences. This is precisely the kind of opinion that Rule 702 renders admissible. With these errors, the court abused its role as gatekeeper, depriving the judge as trier of fact from fully considering this expert reasoning with the benefit of testimony, cross-examination, and the presentation of contrary evidence.

[2] In its first opinion in this case, the district court incorrectly characterized Wikimedia's allegations as mere "suppositions and speculation, with no basis in fact, about how the NSA implements Upstream surveillance." *Wikimedia Found. v. NSA*, 143 F. Supp. 3d 344, 356 (D. Md. 2015). It went so far as to maintain that it was impossible for Wikimedia to prove its allegations "because the scope and scale of Upstream surveillance remain classified . . . ." *Id.* This Court rejected that analysis, describing "the conclusion that the NSA is intercepting, copying, and reviewing at least some of Wikimedia's communications" as at least "plausible" in light of the magnitude of Wikimedia's international Internet traffic and what is known about Upstream surveillance. *Wikimedia Found. v. NSA*, 857 F.3d 193, 211 (4th Cir. 2017). Rather than allow full consideration of the strength of the evidence that makes Wikimedia's claim plausible, the district court now repeats its flawed analysis, stating that "Mr. Bradner has no [direct] knowledge or information" because that information is classified. *Wikimedia*, 427 F. Supp. 3d at 604–605.

## I. The District Court Serves a Limited "Gatekeeper" Role When Determining the Admissibility of Expert Testimony

The general principles governing the admissibility of expert testimony on scientific and technical matters have been stated time and again.[3] District courts are "required to act as 'gatekeepers' to ensure the expert testimony is relevant and reliable." *Bresler v. Wilmington Tr. Co.*, 855 F.3d 178, 195 (4th Cir. 2017) (quoting *Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 199 (4th Cir. 2001)). For scientific evidence, the Supreme Court famously laid out a set of factors in *Daubert*, 509 U.S. 579, for district courts to consider. The "*Daubert* factors"—testability, peer review and publication, error rates and controlling standards, and general acceptance—are "not exhaustive" and "'neither necessarily nor exclusively appl[y] to all experts or in every case.'" *Nease v. Ford Motor Co.*, 848 F.3d 219, 229 (4th Cir. 2017) (quoting *Kumho Tire Co. v. Carmichael*, 526 U.S. 137, 141 (1999)). They are most useful when assessing scientific tests such as DNA profiling or fiber or tool mark comparisons; they may be less helpful when the expert's reasoning simply applies specialized knowledge about the transmission of

[3] For extensive analysis and commentary, see, for example, David L. Faigman et al., Modern Scientific Evidence (2019–20 ed.); Paul C. Giannelli, Edward L. Imwinkelried, Andrea Roth, et al., Scientific Evidence (5th ed. 2012 & Cum. Supp. 2019); David H. Kaye et al., The New Wigmore on Evidence: Expert Evidence (2d ed. 2011 & Cum. Supp. 2019); 1 McCormick on Evidence §§ 12–18, 203–11 (Robert P. Mosteller et al., 8th ed. 2020).

signals over the Internet to ascertain how packets of data can be copied and inspected.[4] The category of technical and nonscientific knowledge was the subject of the opinions in *Kumho Tire*, which held that district courts have discretion to apply as many of the *Daubert* factors as are applicable to any type of expert testimony. The Court explained that "[t]he objective . . . is to make certain that an expert, whether basing testimony upon professional studies or personal experience, employs in the courtroom the same level of intellectual rigor that characterizes the practice of an expert in the relevant field." 526 U.S. at 152; *see also In re Lipitor (Atorvastatin Calcium) Mktg., Sales Practices and Prods. Liab. Litig. (No. II) MDL 2502*, 892 F.3d 624, 631 (4th Cir. 2018).

The *Daubert* and *Kumho Tire* decisions were incorporated into an amended Federal Rule of Evidence 702—a rule "intended to liberalize the introduction of relevant expert evidence." *Cooper v. Smith & Nephew, Inc.*, 259 F.3d 194, 199 & n.1 (4th Cir. 2001) (citing *Westberry v. Gislaved Gummi AB*, 178 F.3d 257, 261 (4th Cir. 1999)). Under Rule 702, an expert witness may provide opinion testimony if the expert's technical knowledge "will help the trier of fact to understand the evidence or to determine a fact at issue," "the testimony is based on sufficient facts or data," and "the testimony is the product of reliable principles and

[4] This may explain why the district court did not apply any of the *Daubert* factors to the expert reports in this case.

methods" as reliably applied to the facts of the case. Fed. R. Evid. 702. The 2000 Amendment to Rule 702 was not intended to change the meaning of the rule, but only to reflect the interpretation of the original rule expressed in *Daubert*, *Kumho Tire*, and other cases flowing from *Daubert*.[5]

Within this post-*Daubert* framework, "the trial court's role as a gatekeeper is not intended to serve as a replacement for the adversary system, and consequently, the rejection of expert testimony is the exception rather than the rule." *In re Lipitor*, 892 F.3d at 631 (quoting *United States v. Stanley*, 533 Fed. App'x. 325, 327 (4th Cir. 2013) (per curiam)). Generally, as this Court has repeatedly recognized, "courts may not evaluate the expert witness's conclusion itself, but only the opinion's underlying methodology." *Bresler*, 855 F.3d at 195 (citing *TFWS, Inc. v. Schaefer*, 325 F.3d 234, 240 (4th Cir. 2003)); *see also In re Lipitor*, 892 F.3d at 631 (quoting *Daubert*, 509 U.S. at 594–95). Part of that methodology is the selection of foundational facts. Naturally, expert opinions must rest on facts about the world in general and sometimes the case in particular, but the facts need

[5] 3 Stephen A. Salzburg et al., Federal Rules of Evidence Manual §702.02[10], at 34 (12th ed. 2020) (treatise, coauthored by the Reporter of the Advisory Committee, stating that "the amendment does nothing more than provide a helpful compilation of the *Daubert* standards").

not be irrefutable or certainly correct.[6] Indeed, in *Bresler*, this Court wrote that "'questions regarding the factual underpinnings of the [expert witness'] opinion affect the weight and credibility' of the witness' assessment, 'not its admissibility.'" *Bresler*, 855 F.3d at 195 (quoting *Structural Polymer Grp., Ltd. v. Zoltek Corp.*, 543 F.3d 987, 997 (8th Cir. 2008)). It is instead for the trier of fact to weigh the evidence and the credibility of each expert after cross-examination and a thorough presentation of contrary evidence. *See Mosser v. Fruehauf Corp.*, 940 F.2d 77, 83 (4th Cir. 1991); *United States v. Moreland*, 437 F.3d 424, 431 (4th Cir. 2006) (citing *Daubert*, 509 U.S. at 596).[7]

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[6] The Advisory Committee Note to the 2000 Amendment to Rule 702 speaks to this issue. The note states:

> [P]roponents "do not have to demonstrate to the judge by a preponderance of evidence that the assessments of their experts are correct, they only have to demonstrate by a preponderance of evidence that their opinions are reliable. . . . The evidentiary requirement of reliability is lower than the merits standard of correctness."

Fed. R. Evid. 702, Advisory Committee's Note (2000) (quoting *In re Paoli R.R. Yard PCB Litig.*, 35 F.3d 717, 744 (3d Cir. 1994)).

[7] The note to Rule 702's 2000 Amendment further advises that

> When facts are in dispute, experts sometimes reach different conclusions based on competing versions of the facts. The emphasis in the amendment on "sufficient facts or data" is not intended to authorize a trial court to exclude an expert's testimony on the ground that the court believes one version of the facts and not the other.

Fed. R. Evid. 702, Advisory Committee's Note (2000).

In sum, under Rule 702, the expert's reasoning process must be "reliable." A district court should assure itself that the expert has followed a generally sound process of reasoning that leads to the conclusions presented. The court must ensure that the conclusions are not mere "*ipse dixit*." *General Electric Co. v. Joiner*, 522 U.S. 136, 146 (1967); Fed. R. Evid. 702 Advisory Committee's Note (2000). But the court's "gatekeeping" role is limited. It does not extend to rejecting conclusions just because they may be "shaky," *Daubert*, 509 U.S. at 596; *Kumho Tire*, 526 U.S. at 153, rest on uncertain but nevertheless plausible factual assumptions, or conflict with conclusions reached by an opposing expert.

## II. Wikimedia's Expert's Opinion Is the Product of a Reliable Method of Reasoning

Although experts outside the government are not privy to all the details of the Upstream surveillance program, they can use reliable technical knowledge of how the Internet works and the publicly stated goals of the program to draw reasonable inferences. In this case, two highly qualified experts generated five expert reports. Both experts used sound methods and essentially the same technical knowledge to reach many conclusions in common. However, they disagreed on some particulars: Wikimedia's expert reached one central conclusion that the government's expert was unable or unwilling to reach and, in addition, provided reasons to reject the scenario the government's expert advanced. Based on the well-established legal principles outlined in Part A, both experts' major

opinions clearly satisfy Rule 702 and therefore are potentially admissible. Neither can be dismissed as *ipse dixit* (as in *Joiner*) or as "outside the range where experts might reasonably differ" (as in *Kumho Tire*, 526 U.S. at 153 (quoting *Daubert*, 509 U.S. at 596)).

The government's expert was Henning Schulzrinne, a Professor of Computer Science and Electrical Engineering at Columbia University. He prepared a lucid (and lengthy) report on the workings of the Internet and the devices that compose and monitor it. "Based on what is publicly known about the NSA's Upstream collection technique," he opined, "in theory" the NSA's surveillance could be conducted so as not to "involve NSA interaction with Wikimedia's online communications." Schulzrinne Decl. ¶ 1 (JA.1:0719). To support his conclusion, Dr. Schulzrinne described how companies carrying Internet traffic might filter transmissions before copying them by "mirroring" with "routers" or "switches" that could perform "blacklisting" or "whitelisting" if the NSA chose to give the companies information on its targets with which to create "access control lists." Schulzrinne Decl. ¶¶ 58–62 (JA.1:0744–46). He supplied no information and no opinion on whether it was at all *likely* that the NSA used the mirroring methods that he envisioned. He summarized his principal conclusion as follows:

> [I]t would be technically feasible for the assisting carrier, through one or more of the traffic-mirroring techniques I

> have discussed, to configure its routing or switching equipment so that Wikimedia's communications transiting that link are not intercepted, copied, or forwarded to surveillance equipment under the NSA's control.

Id. ¶ 88 (JA.1:0759).

Wikimedia's expert was Scott Bradner, who had served as Harvard University's Technology Security Officer and taught at that university. Bradner Decl. ¶ 10 (JA.2:0929). His conclusion was that "it is virtually certain that the NSA has, in the course of the upstream collection program, copied, reassembled and reviewed at least some of Wikimedia's communications." 2d Bradner Decl. ¶ 155 (JA.7:3938–39). He reached this conclusion using specialized knowledge, as well as logically and technically sound methods. Based on undisputed facts about Internet technology, he identified two possible methods for Upstream surveillance—optical splitting (which, Dr. Schulzrinne conceded, "would entail, as alleged by Wikimedia, the copying of all communications flowing across a given fiber-optic link," Schulzrinne Decl. ¶ 56 (JA.1:0743–44)) and mirroring with whitelisting or blacklisting to avoid every one of Wikimedia's communications (which Mr. Bradner accepted as "technically possible," Bradner Decl. ¶ 6(c) (JA.2:0926–27), at least for "a thought experiment," 2d Bradner Decl. ¶ 58 (JA.7:3900)). He then considered whether Dr. Schulzrinne's proposed mechanism to achieve "Wikimedia-avoidance" would work with 100 percent reliability in

practice and whether it would accomplish the known goals of Upstream surveillance. He provided several evidence-based reasons compelling the conclusion that filtering *before* copying would be impractical and unsuitable for a comprehensive surveillance program. These include the following six arguments:

First, the mirroring configuration proposed by Dr. Schulzrinne would require the intimate involvement of a non-governmental Internet service provider ("ISP"). If secret information in the hands of an ISP technician were to be compromised, it would provide a "roadmap on how to avoid NSA collection," Bradner Decl. ¶ 364 (JA.2:1052), contradicting the NSA's stated concerns around revealing such sensitive information, 2d Bradner Decl. ¶ 107 (JA.7:3917). In considering the prospect of an ISP being targeted, Mr. Bradner was not engaging in mere speculation. As Mr. Bradner pointed out, ISPs have been compromised in the past. 2d Bradner Decl. ¶ 105 (JA.7:3916–17).

Second, the technical demand that Dr. Schulzrinne's proposed filtering mechanism would place on a router's configuration settings and processing capacity would seriously interfere with the ISP's infrastructure and increase the risk of human error. Bradner Decl. ¶ 288 (JA.2:1024–25); 2d Bradner Decl. ¶¶ 118, 124 (JA.7:3921, 3923–24).

Third, any suggested protocol-specific or port-specific blocking—i.e., filtering out particular types of Internet traffic—would create a "blind spot that

would provide a path by which an NSA target could communicate without the communications being detected." Bradner Decl. ¶¶ 366(b), (e)–(f) (JA.2:1053, 1054–55). This would contradict the Privacy and Civil Liberties Oversight Board's explanation that the goal of Upstream collection is to "comprehensively" acquire communications from the NSA's targets. 2d Bradner Decl. ¶ 46 (JA.7:3895). Further, certain suggested forms of this broad filtering technique conflict with the NSA's acknowledgement that it collects Web traffic. Bradner Decl. ¶ 366(f) (JA.2:1055).

Fourth, Dr. Schulzrinne's proposed "whitelisting" alternative—where the NSA would select which IP addresses[8] to monitor, as opposed to which IP addresses to "blacklist"—is not possible, let alone practical, because it assumes that IP addresses do not change and people do not move. Bradner Decl. ¶ 366(d) (JA.2:1054) (citing Bradner Decl. ¶¶ 137, 140, 173–74, 229–30, 244–47, 334 (JA.2:0971–72, 0983, 1005–06, 1010–11, 1042)). This mechanism also contradicts the NSA's stated goal of "comprehensively" acquiring communications, as well as its past practice of acquiring "about" communications—communications that reference a target but are not necessarily to or from a target. 2d Bradner Decl. ¶¶ 69–70; 108–112 (JA.7:3903–04, 3917–18).

[8] IP addresses, or Internet Protocol addresses, are "unique numeric identifiers assigned to particular computers, devices, or systems connected to the Internet." *Wikimedia*, 427 F. Supp. 3d at 594.

Fifth, Mr. Bradner explained that Dr. Schulzrinne's suggestion that the NSA could blacklist encrypted traffic would not prevent the collection of Wikimedia's unencrypted communications, Bradner Decl. ¶ 366(h) (JA.2:1055), which are numerous, *id.* ¶ 351 (JA.2:1048), and would also create a gap in the NSA's surveillance coverage, 2d Bradner Decl. ¶ 135 (JA.7:3928).

Sixth, filtering Wikimedia's IP addresses would not block all Wikimedia traffic, which could be found in so-called "multi-communication transactions" that are not associated with Wikimedia's addresses, Bradner Decl. ¶ 367(b)(1) (JA.2:1057); could be found in cases where a person located outside the United States is using an email service located inside the United States to send email to Wikimedia (and vice versa), *id.* ¶ 367(b)(2) (JA.2:1057); and could be found in the traffic between a virtual private network service in the United States and a user located outside the United States, *id.* ¶ 367(b)(3) (JA.2:1057); *see also* 2d Bradner Decl. ¶¶ 97–101 (JA.7:3913–15).

By assessing and refuting the assumptions underlying Dr. Schulzrinne's hypothetical, Mr. Bradner employed a process of elimination—a logically sound method that is capable of producing highly plausible conclusions.[9] Indeed, it is

[9] The note to Rule 702's 2000 amendments states that one factor for determining whether an expert's testimony is reliable is if the expert "has adequately accounted for obvious alternative explanations," favorably citing and summarizing *Ambrosini v. Labarraque*, 101 F.3d 129 (D.C. Cir. 1996): "the possibility of some

structurally equivalent to a "differential diagnosis," which is a widely accepted method of reasoning in medicine—and has been universally held to satisfy *Daubert* and Rule 702. *Westberry*, 178 F.3d at 262 ("Differential diagnosis, or differential etiology, is a standard scientific technique of identifying the cause of a medical problem by eliminating the likely causes until the most probable one is isolated."); 3 Faigman et al. § 21:4 (citing cases). A doctor performs differential diagnosis because he or she does not know the patient's disease. Nature has "classified" the fact that the patient wants to know, but the differential diagnosis can yield an inference as to what the disease must be. Similarly here, by methodically showing the weaknesses, gaps, and impracticability of each aspect of Dr. Schulzrinne's proposed hypothetical, Mr. Bradner's analysis must be accepted as a reliable method for determining the mechanism the NSA most likely uses to copy and inspect Internet communications and directly bears on the core issue in the case—whether the NSA is currently capturing at least some of Wikimedia's communications.

But instead of crediting Mr. Bradner's methodical analysis on this issue as suitable testimony, the district court exceeded its gatekeeper role and injected itself

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uneliminated causes presents a question of weight, so long as the most obvious causes have been considered and reasonably ruled out by the expert." Fed. R. Evid. 702, Advisory Committee's Note (2000). It is clear here that Mr. Bradner "considered and reasonably ruled out" Dr. Schulzrinne's explanations—obvious or not.

into the two experts' "technical arguments" about the practicality and plausibility of Dr. Schulzrinne's mirroring hypothetical. *See Wikimedia*, 427 F. Supp. 3d at 606–10. Particularly at summary judgment, district courts cannot decide which expert's opinions are more persuasive nor resolve any conflicts between them. *See TFWS, Inc.*, 325 F.3d at 241–42.[10] Even if the court doubted Mr. Bradner's ultimate conclusion, its role under Rule 702 is not to keep out "shaky" evidence that is based on technical knowledge and other facts of a type reasonably relied on by experts in the field. This weighing is best left to the factfinder.

## III. Wikimedia's Expert's Opinion Cannot Be Dismissed as Speculation

In a few lines of text, the district court refused to recognize that Mr. Bradner's analysis created a cognizable dispute over the alleged fact that NSA has intercepted, copied, and collected at least some of Wikimedia's Internet

[10] This Court's decision in *TFWS* is instructive. In *TFWS*, at summary judgment, "each side presented its case" on the question of fact "largely through experts, who offered two types of evidence, theoretical and empirical." *Id.* at 237. The district court rejected the plaintiff's expert's position, rebutting each of the expert's attacks on the defendant's arguments and "crediting the reports . . . of the [defendant's] experts." *Id.* at 239–40. This Court reversed, holding that, "[t]o find that the [defendant] carried its burden, the district court had to choose the [defendant's] version of the evidence over [the plaintiff's] version . . . notwithstanding [the plaintiff's expert's] contentions to the contrary." *Id.* at 242. Deciding which expert opinion "was more persuasive" is "not [a] decision[] that can be made on summary judgment." *Id.* Here, the district court followed this impermissible path. The court weighed arguments posed by two technical experts and adopted one expert's opinion as more persuasive, in spite of reasoned criticism.

communications via its Upstream surveillance program. Remarkably, the court suggested that a non-governmental expert who, by definition, lacks access to classified information "has no knowledge or information" and must make "speculative assumptions." *Wikimedia Found.*, 427 F. Supp. 3d at 604–05.[11]

It is true, of course, that an analysis that starts with contrived and doubtful premises will not lead to reliable conclusions. For this reason, the Supreme Court in *Daubert* warned against expert testimony based on "unsupported speculation." *Daubert*, 509 U.S. at 590. A physician cannot just make up a set of symptoms and arrive at a useful diagnosis for a real patient.

But Wikimedia's expert did not manufacture unknown facts about the

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[11] The full paragraph reads as follows:

> None of Mr. Bradner's bases for this opinion, however, have a non-speculative foundation in technology. Instead, speculative assumptions about the NSA's surveillance practices and priorities and the NSA's resources and capabilities form the basis for Mr. Bradner's opinion in this regard. *See* Schulzrinne 2d Decl. ¶ 73 [JA.6:3437–38]. Simply put, Mr. Bradner does not know what the NSA prioritizes in the Upstream surveillance program because that information is classified, and therefore Mr. Bradner has no knowledge or information about it. As a result, Mr. Bradner's opinions as to these specific propositions are inadmissible pursuant to Rule 702, Fed. R. Evid., and the standards articulated in *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579, 113 S.Ct. 2786, 125 L.Ed.2d 469 (1993).

*Wikimedia*, 427 F. Supp. 3d at 604–05 (footnotes omitted).

Upstream program. To the contrary, for each supposed instance of speculation regarding the NSA's practices or priorities, Mr. Bradner pointed to underlying support. For example, the court took issue with Mr. Bradner's premise that the NSA would prefer not to share sensitive information with an assisting ISP. *See Wikimedia*, 427 F. Supp. 3d at 604. But Mr. Bradner based this premise on his own technical experience working on networking issues for the U.S. government, Bradner Decl. ¶ 286 (JA.2:1024), a history of ISPs' network management systems being compromised, 2d Bradner Decl. ¶ 105 (JA.7:3916–17), and the NSA's own statements about the precariousness of revealing such information, *id.* ¶ 107 (JA.7:3917).

To be sure, neither Mr. Bradner nor any other outside expert can be absolutely certain about the NSA's actions and its willingness to compromise the effectiveness of Upstream surveillance by adopting the mirroring methods postulated by Dr. Schulzrinne. But a court "need not determine that the proffered expert testimony is irrefutable or certainly correct." *Moreland*, 437 F.3d at 436, overruling on other grounds recognized by *United States v. Diosdado-Star*, 630 F.3d 359 (4th Cir. 2011). By building on his own technical knowledge and the government's statements, Mr. Bradner's reports fall comfortably within the bounds of acceptable expert testimony. Any perceived shakiness of Mr. Bradner's

opinions should instead be subject to "[v]igorous cross-examination." *Daubert*, 509 U.S. at 596.

The district court's reasoning suggests that experts outside of the NSA cannot opine on aspects of highly classified surveillance programs, including the NSA's Upstream program, because *any* reasonable inferences regarding secret matters would amount to speculation. This cannot be the case—and would set an impermissibly high bar to important constitutional and statutory challenges to government surveillance. Experts, including undisputedly qualified experts like Mr. Bradner, can provide a critical understanding of the technologies that underlie these programs. And they may, as Mr. Bradner has done, leverage their technical expertise to make sense of information that *has* been publicly disclosed. While the extent of their knowledge may not be perfect—and no expert's is—they still have the ability to "help the trier of fact to understand the evidence or to determine a fact in issue" using reliable methodologies and sufficient foundational facts. Fed. R. Evid. 702. As Mr. Bradner noted, "[w]hile absolute assurance may be difficult, the NSA must operate in the real world and deal with the technical and operational limitations inherent in the Internet and in the telecommunications providers it compels to assist it." 2d Bradner Decl. ¶ 10 (JA.7:3886). Barring adequately founded testimony on expert admissibility grounds rather than permitting it to be

subjected to cross-examination and weighed against contrary evidence (even secret evidence received *in camera*, if need be) is an abuse of discretion.

## CONCLUSION

The district court abused its discretion by not crediting Mr. Bradner's meticulous analysis as reliable and non-speculative pursuant to Rule 702 and *Daubert*. For the reasons stated above, the judgment of the district court, insofar as it rests on the rules of evidence governing expert testimony, must be reversed.

Dated: July 8, 2020

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Dated: July 8, 2020

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UNITED STATES COURT OF APPEALS FOR THE FOURTH CIRCUIT

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