IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.,	:	
Plaintiff,	:	
v.	:	C.A. No. 17-275-LPS-CJB C.A. No. 17-1353-LPS-CJB
OXFORD NANOPORE TECHNOLOGIES, INC. and OXFORD NANOPORE TECHNOLOGIES, LTD.,	:	**REDACTED - PUBLIC VERSION**
Defendants.	:	Original Filing Date: February 19, 2020 Redacted Filing Date: February 20, 2020

Brian E. Farnan and Michael J. Farnan, FARNAN LLP, Wilmington, DE

Edward R. Reines, Derek C. Walter, and Robert S. Magee, WEIL, GOTSHAL & MANGES LLP, Redwood Shores, CA

Attorneys for Plaintiff

Jack B. Blumenfeld, Jennifer Ying, and Jeffrey J. Lyons, MORRIS, NICHOLS, ARSHT & TUNNELL LLP, Wilmington, DE

Stephen M. Hash, Puneet Kohli, Samoneh Kadivar, David Varghese, Jeff Gritton, David B. Weaver, and Alexander Piala, BAKER BOTTS L.L.P., Austin, TX

David G. Wille and Johnson K. Kuncheria, BAKER BOTTS L.L.P., Dallas, TX

Elizabeth Durham Flannery, BAKER BOTTS L.L.P., Houston, TX

Attorneys for Defendants

MEMORANDUM OPINION

February 19, 2020
Wilmington, Delaware

STARK, U.S. District Judge:

Pending before the Court are Defendants Oxford Nanopore Technologies, Inc. ("Oxford" or "Defendant") and Oxford Nanopore Technologies, Ltd.'s ("ONT LTD") (collectively, "Oxford" or "Defendants") Motion for Summary Judgment (D.I. 382),[1] Oxford's Motion to Preclude the Testimony of Joshua Earl (D.I. 377), Plaintiff Pacific Biosciences of California, Inc.'s ("PacBio" or "Plaintiff") Motion for Partial Summary Judgment (D.I. 380), and PacBio's Motion to Strike and Preclude Testimony (D.I. 381).

I. BACKGROUND

PacBio has brought two patent infringement suits against Oxford, altogether asserting U.S. Patent Nos. 9,546,400 (the "'400 patent"), 9,772,323 (the "'323 patent"), 9,678,056 (the "'056 patent"), and 9,738,929 (the "'929 patent") (collectively, the "asserted patents"). The four patents-in-suit generally relate to nanopore sequencing.

The Court heard oral argument on the pending motions on January 8, 2020. (D.I. 439) ("Tr."). Trial is scheduled to begin on March 9, 2020.

II. LEGAL STANDARDS

A. Summary Judgment

Under Rule 56(a) of the Federal Rules of Civil Procedure, "[t]he court shall grant summary judgment if the movant shows that there is no genuine dispute as to any material fact and the movant is entitled to judgment as a matter of law." The moving party bears the burden of demonstrating the absence of a genuine issue of material fact. *See Matsushita Elec. Indus. Co., Ltd. v. Zenith Radio Corp.*, 475 U.S. 574, 585-86 (1986). An assertion that a fact cannot be – or, alternatively, is – genuinely disputed must be supported either by "citing to particular parts

[1] All references are to the docket entries in C.A. No. 17-275.

of materials in the record, including depositions, documents, electronically stored information, affidavits or declarations, stipulations (including those made for purposes of the motion only), admissions, interrogatory answers, or other materials," or by "showing that the materials cited do not establish the absence or presence of a genuine dispute, or that an adverse party cannot produce admissible evidence to support the fact." Fed. R. Civ. P. 56(c)(1)(A) & (B). If the moving party has carried its burden, the nonmovant must then "come forward with specific facts showing that there is a genuine issue for trial." *Matsushita*, 475 U.S. at 587 (internal quotation marks omitted). The Court will "draw all reasonable inferences in favor of the nonmoving party, and it may not make credibility determinations or weigh the evidence." *Reeves v. Sanderson Plumbing Prods., Inc.*, 530 U.S. 133, 150 (2000).

To defeat a motion for summary judgment, the nonmoving party must "do more than simply show that there is some metaphysical doubt as to the material facts." *Matsushita*, 475 U.S. at 586; *see also Podobnik v. U.S. Postal Serv.*, 409 F.3d 584, 594 (3d Cir. 2005) (stating party opposing summary judgment "must present more than just bare assertions, conclusory allegations or suspicions to show the existence of a genuine issue") (internal quotation marks omitted). The "mere existence of some alleged factual dispute between the parties will not defeat an otherwise properly supported motion for summary judgment;" a factual dispute is genuine only where "the evidence is such that a reasonable jury could return a verdict for the nonmoving party." *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247-48 (1986). "If the evidence is merely colorable, or is not significantly probative, summary judgment may be granted." *Id.* at 249-50 (internal citations omitted); *see also Celotex Corp. v. Catrett*, 477 U.S. 317, 322 (1986) (stating entry of summary judgment is mandated "against a party who fails to make a showing sufficient to establish the existence of an element essential to that party's case,

and on which that party will bear the burden of proof at trial"). Thus, the "mere existence of a scintilla of evidence" in support of the nonmoving party's position is insufficient to defeat a motion for summary judgment; there must be "evidence on which the jury could reasonably find" for the nonmoving party. *Anderson*, 477 U.S. at 252.

B. Motions to Strike and Preclude Expert Opinion

In *Daubert v. Merrell Dow Pharmaceuticals, Inc.*, 509 U.S. 579 (1993), the Supreme Court explained that Federal Rule of Evidence 702 creates "a gatekeeping role for the [trial] judge" in order to "ensur[e] that an expert's testimony both rests on a reliable foundation and is relevant to the task at hand." *Id.* at 597. Rule 702(a) requires that expert testimony "help the trier of fact to understand the evidence or to determine a fact in issue." Expert testimony is admissible only if "the testimony is based on sufficient facts or data," "the testimony is the product of reliable principles and methods," and "the expert has reliably applied the principles and methods to the facts of the case." Fed. R. Evid. 702(b)-(d).

There are three distinct requirements for proper expert testimony: (1) the expert must be qualified; (2) the opinion must be reliable; and (3) the expert's opinion must relate to the facts. *See Elcock v. Kmart Corp.*, 233 F.3d 734, 741 (3d Cir. 2000).

III. DISCUSSION

A. Oxford's Motion for Summary Judgment

1. Invalidity of the '056 Patent as Indefinite and Lacking Enablement

Oxford seeks summary judgment that PacBio's '056 patent is invalid due to indefiniteness and lack of enablement. The Court will deny this motion as the record demonstrates genuine disputes of material fact.

With respect to indefiniteness, there is a genuine dispute as to whether a person of ordinary skill in the art ("POSA") can determine, with reasonable certainty, if an "enzyme exhibits two kinetic steps," as required by claim 1. A reasonable juror could side with Oxford and find it impossible for a POSA to measure two kinetic steps because "there is an indefinite number of ways to observe the data," leaving a POSA unable to know "if one of those ways will result in the peaked distribution PacBio argues indicates infringement." (D.I. 384 at 10) (citing e.g., D.I. 389 Ex. 1 at ¶¶ 73-74)[2] However, the record, taken in the light most favorable to PacBio, also permits a reasonable juror to find that a POSA could identify (with reasonable certainty) enzymes having two kinetic steps. (*See* D.I. 413 at 7-9) (citing, e.g., D.I. 414 Ex. 1 at ¶ 100) For instance, Oxford's expert, Dr. Ha, points to literature and experiments a POSA might have considered in undertaking such an assessment. (*See* D.I. 418 at 6-8) Moreover, Dr. Ha found it possible to apply PacBio's definition of "kinetic steps" in formulating his noninfringement opinion. (*See, e.g.*, D.I. 414 Ex. 3 at ¶¶ 137, 142) PacBio also points to Oxford documents which may further support a finding that a POSA understood the claimed two kinetic steps. (*See, e.g.*, D.I. 386 Ex. 11 at ONT_DEL00196029, 00196032-36; D.I. 414 Ex. 4 at ONT_DEL0014377) The Court cannot say that a reasonable juror would have to find, by clear and convincing evidence, that the asserted claims are indefinite.

[2] Oxford relies heavily on the Court's statement in its initial claim construction opinion that the term "kinetic step" was indefinite because "the claims require a POSA to be able to determine the number of kinetic steps and each step's rate constant, but a POSA would not be able to do so with reasonable certainty." (D.I. 152 at 20) However, the Court later reconsidered this construction, concluding that it was "unable to find that [Oxford] has proven by clear and convincing evidence that a POSA would lack reasonable certainty as to the 'kinetic steps' of the claim;" it added that "[f]urther proceedings will be necessary to resolve this indefiniteness dispute." (D.I. 255 at 5) The Court's prior statement does not change the fact that the record the parties have adduced can support either a finding of indefiniteness or no indefiniteness, rendering summary judgment inappropriate.

Oxford's enablement argument rests primarily on the limitation of claim 1 "whereby the translocating enzyme and the reaction conditions are selected such that the translocating enzyme exhibits two kinetic steps wherein each of the kinetic steps has a rate constant, and the ratio of the rate constants of the kinetic steps is from 10:1 to 1:10." At least two genuine disputes of material fact preclude granting summary judgment of non-enablement. First, while Oxford insists that nanopore sequencing was nascent as of the priority date (D.I. 384 at 12-13) (citing, e.g., D.I. 386 Ex. 6 at ¶ 307), PacBio responds that "nanopore sequencing with enzymes . . . are claimed in patents published long before the priority date here" (D.I. 413 at 21) (citing D.I. 416 Ex. B at ¶ 287-89). This dispute is material because among the factors to be considered in evaluating an enablement defense are the state of the prior art and its level of predictability, the nature of the invention, and the level of one of ordinary skill. *See In re Wands*, 858 F.2d 731, 737 (Fed. Cir. 1988). Second, although Oxford contends that making or using the full scope of the claimed invention requires "extensive trial-and-error screening" (D.I. 384 at 15), PacBio has produced evidence – including the opinion of its expert, Dr. McHenry, who explained how the '056 patent provided (1) "ranges of conditions" that would allow a POSA to "easily scan . . . and come up with a working system" and (2) "general guidelines . . . that would be . . . trivial for somebody that's skilled in the art to reduce . . . to practice" (D.I. 413 at 18) (citing D.I. 416 Ex. B at ¶¶ 290-91; *see also* D.I. 414 Ex. 30 at 83-84, 86, 88-89; Tr. at 34-35 (citing testimony of Dr. Ha that POSA could use ranges of conditions to practice claimed invention)).

Oxford has not even identified where any of its experts expressly opines that a POSA with the patent in-hand would require undue experimentation to practice the claimed invention. By contrast, PacBio's expert, Dr. McHenry, stated that the necessary experimentation would not take long and would be routine. (D.I. 414 Ex. 30 at 104-05, 117-19)

Taking the evidence in the light most favorable to Oxford, the Court is not persuaded that a reasonable juror would have to find, by clear and convincing evidence, that the asserted claims are not enabled. Therefore, the Court will deny Oxford's motion.

2. Non-Infringement of the '400 and '323 Patents By Oxford's Accused "Flip-Flop" Algorithm

Oxford argues that no evidence shows that the Flip-Flop algorithm ("Flip-Flop") used in Oxford's basecalling software practices each limitation of the asserted claims of the '400 and '323 patents. (D.I. 384 at 21) More particularly, Oxford contends that PacBio has failed to show that Flip-Flop (1) has or uses "calibration information produced by measuring such property [current] for 4 to the N sequence combinations" or "calibration information that accounts for the electrical signal [current] for each of the 4 to N sequence combinations" or (2) "compares the measured property (current) . . . to the calibration information that is produced by measuring or accounts for all 4^N sequence combinations." (D.I. 384 at 22-26) (citing, e.g., D.I. 388 Ex. 1 at ¶¶ 13-16) PacBio counters by citing testimony from its expert, Dr. Dessimoz, that Flip-Flop performs both steps. (D.I. 413 at 24-26) (citing, e.g., D.I. 415 Ex. A at ¶¶ 185-86, 189, 190-202)

A reasonable juror could accept Dr. Dessimoz's opinion that Flip-Flop uses calibration information as required by the patent. As he showed, Oxford Vice President of Development, Stuart Reid, testified that the software that trains [redacted] (D.I. 415 Ex. A at ¶ 196; *see also* D.I. 415 Ex. A at ¶¶ 194-95) Further, a reasonable juror could find that Flip-Flop "compares the measured property (current) . . . to the calibration information." Viewed in the light most favorable to PacBio, Dr. Dessimoz's conclusion that Flip-Flop is trained to find "[a]n alignment" between the

raw signal and the "reference sequence" suggests that Flip-Flop compares this data and, thus, satisfies the claim limitation. (*See* D.I. 415 Ex. A at ¶¶ 190, 199)

Accordingly, the Court will deny Oxford's motion.

3. Non-Infringement of '929 Patent By Oxford's "2D Sequencing" Products

Oxford argues that PacBio produced no evidence that anyone has used Oxford's 2D Sequencing products to infringe the '929 patent's method claims. (D.I. 384 at 30-31) PacBio counters by citing the testimony of Oxford's witness, Dr. Akeson, that "we did perform" the methods of '929 patent by "using a product they called 2-D." (D.I. 413 at 31) It is true, as Oxford notes, Dr. Akeson did not say ***when*** Oxford used the product – only that Oxford did so at "one point." (D.I. 418 at 14) It is also true that, to prove infringement, PacBio must persuade a reasonable jury by a preponderance of the evidence that Oxford performed the methods of the '929 patent with a 2D sequencing product in the United States sometime after August 22, 2017. (*See* D.I. 80 Ex. 6 at 1) (patent date listed as August 22, 2017) Oxford insists that the record can only reasonably be understood as showing that Oxford last used 2D sequencing no later than January or May 2017. (*See* D.I. 419 at 82 (Akeson Decl.); D.I. 419 at 79 (Willcocks Decl.))

PacBio cites additional evidence it claims supports its position. It cites an internal Oxford spreadsheet seemingly showing that the accused sequencing kit model was imported into or sold in the United States, but PacBio cites to rows of the spreadsheet that list the sales of a different model than PacBio has accused. (*See* D.I. 413 at 31; D.I. 414 Ex. 22 at ONT_DEL00539133 lines 25992-5) However, another row of the spreadsheet suggests that Oxford received a copy of the accused product. (*See* D.I. 414 Ex. 22 at ONT_DEL00539133 line 25991) Additionally, PacBio points to Oxford Vice President James White's statement that

Oxford sold 2D kits in the United States "as late as May 2017." (D.I. 413 at 31) (citing D.I. 414 Ex. 18 at 104-05, 131-32)

While a close call, the Court is unable to conclude that, taking all of the evidence in the light most favorable to PacBio, no reasonable juror could find that Oxford used 2D sequencing products on or after August 22, 2017. Therefore, the Court will deny Oxford's motion.

4. Public Availability of Winters-Hilt Grant, Akeson Grant, and Progress Reports

Several of Oxford's invalidity defenses are based on certain alleged prior art referred to by the parties as the Winters-Hilt Grant (D.I. 388 at ONT-EXP-001012-56), Akeson Grant (D.I. 388 at ONT-EXP-00154-83), and their associated progress reports (*see, e.g.*, D.I. at ONT-EXP-001510-28, ONT-EXP-001531-41). The Court will deny Oxford's request for summary judgment that these references were publicly available before the April 10, 2009 priority date of the '400 and '323 patents because the record reveals a genuine dispute with respect to this material fact.

Oxford suggests that the latest any of these documents became publicly available was within seven to ten days of April 1, 2008. (D.I. 384 at 31-32) But a reasonable juror could be persuaded that Oxford has shown the public availability of only the project data and abstracts corresponding to these documents and not the full documents themselves. (D.I. 413 at 32) (citing D.I. 388 Ex. 3 at ¶ 5)

B. PacBio's Motion for Partial Summary Judgment

1. No Anticipation of the '400 and '323 Patents By Akeson Or Winters-Hilt

PacBio asks the Court to grant summary judgment that the asserted claims of PacBio's '400 and '323 patents are not anticipated by Akeson and Winters-Hilt. PacBio relies on the

testimony of Oxford's expert, Dr. Goldman, to the effect that the Akeson and Winters-Hilt grants did not disclose two limitations of the '400 and '323 patents: "determining the sequence of the template nucleic acid" and "N." (D.I. 383 at 4-5) (citing D.I. 385 Ex. 8 at 234-36, 292-93) Oxford responds that PacBio "misinterprets" Dr. Goldman's testimony – although Oxford does not point to any testimony or opinion from Dr. Goldman expressly concluding that Akeson and Winters-Hilt do disclose the two limitations. (*See* D.I. 405 at 2-4)

The Court concludes that no reasonable juror, taking the evidence in the light most favorable to Oxford (and even assuming that Akeson and Winters-Hilt were publicly available prior to the priority date), could find that Akeson and Winters-Hilt disclose these two limitations and anticipate the '400 and '323 patents. *See King Pharm., Inc. v. Eon Labs, Inc.*, 616 F.3d 1267, 1274 (Fed. Cir. 2010) ("[A] claim is anticipated if each and every limitation is found either expressly or inherently in a single prior art reference."). Accordingly, the Court will grant summary judgment that Akeson and Winters-Hilt do not anticipate the asserted claims of the '400 and '323 patents.

2. No Anticipation of the '056 Patent By Akeson

Oxford contends that the Akeson references anticipate the '056 patent. PacBio seeks summary judgment of no anticipation by Akeson. In so moving, PacBio cites to Oxford expert Dr. Ha, who relied on five assumptions to opine that the '056 patent is anticipated. A reasonable juror could agree with PacBio that Dr. Ha "relies on a series of unsupported assumptions" and that Oxford failed to offer evidentiary support for two of them. (D.I. 383 at 19-20; D.I. 420 at 10-11) However, a reasonable juror could alternatively agree with Oxford that Dr. Ha relied on concrete evidence for each of his assumptions. (*See* D.I. 405 at 14-15) (citing D.I. 407 Ex. 6 at

25–26, Ex. 7 at ¶ [0082]; D.I. 408 Ex. 11 at ¶¶ 80-82; D.I. 411 Ex. 1 at ¶¶ 147-531, Ex. 2 at ¶¶ 18-20, 29, 31) Thus, the Court will deny PacBio's motion.

3. No Obviousness of the '400, '323, and '056 Patents

PacBio moves for summary judgment that no reasonable juror could find for Oxford on Oxford's obviousness defenses directed to the '400, '323, and '056 patents.

With respect to the '400 and '323 patents, PacBio points to the testimony of Oxford expert Dr. Goldman that a POSA would not have had a reasonable expectation of success in combining the prior art references to arrive at these patents' asserted claims. (D.I. 383 at 8) (citing D.I. 385 Ex. 8 at 242-43) Oxford does not dispute that Dr. Goldman made this admission. (*See* D.I. 405 at 8) Instead, Oxford points to Dr. Goldman's testimony that the claims of the '400 patent are invalid as obvious "only to the extent PacBio asserts that the asserted claims are enabled." (D.I. 405 at 8) (citing D.I. 410 Ex. 1 at ¶ 135) Likewise, Dr. Goldman's expert report insists that the claims of the '323 patent are obvious "to the extent PacBio argues" that the asserted claims meet the written description and enablement requirements. (D.I. 410 Ex. 1 at ¶ 816) No reasonable factfinder, taking the evidence in the light most favorable to Oxford, could find from this opinion that a POSA would have had a reasonable expectation of success in combining Oxford's cited prior art references. Further, while Dr. Goldman's expert report asserts in a conclusory manner that a POSA ***would*** have had a reasonable expectation of success in combining prior art references to arrive at the dependent claims of the '400 and '323 patents (*see, e.g.,* D.I. 410 Ex. 1 at ¶¶ 144, 148, 152, 156, 164, 167, 831, 839, 843); *see also* Tr. at 15-16), these conclusions are not supported by any facts or evidence, as PacBio correctly notes (*see* D.I. 383 at 6-8). Additionally, Dr. Goldman did not opine that a POSA would have had a reasonable expectation of success in combining prior art references to arrive at the independent

claims of these patents. (D.I. 410 Ex. 1 at ¶¶ 136-42, 817-29) Thus, summary judgment for PacBio on these obviousness defenses is warranted. *See Pfizer, Inc. v. Apotex, Inc.*, 480 F.3d 1348, 1361 (Fed. Cir. 2007).

However, Oxford has produced sufficient evidence from which a reasonable juror could find, by clear and convincing evidence, that the '056 patent is obvious. In opposing PacBio's motion, Oxford cites the opinion of its expert, Dr. McHenry, that the "polymerases and reaction conditions described in the '056 Patent could be applied in a nanopore sequencing context" and "translocating enzyme activity outside a nanopore system 'would be transferable' to nanopore systems." (D.I. Ex. 9 at ¶ 298) Viewed in the light most favorable to Oxford, this evidence could provide a basis to find that a POSA would have had a reasonable expectation of success from combining Oxford's prior art references. Thus, the Court will deny PacBio's motion with respect to the obviousness of the '056 patent.

4. Patent Eligibility of the '400 and '323 Patents

PacBio seeks summary judgment that the asserted claims of its '400 and '323 patents are patent eligible under 35 U.S.C. § 101. (D.I. 383 at 8) At an earlier stage of this case, the Court denied Oxford's motion to dismiss the asserted claims of the '400 patent for not being directed to patentable subject matter. (*See* D.I. 23) Oxford's current § 101 defenses fare no better.

Oxford contends that the asserted claims of the '400 and '323 patents are "directed to the abstract idea of identifying an unknown DNA sequence by comparing measurements made for that unknown sequence against measurements obtained previously for known DNA sequences." (D.I. 405 at 18) Even crediting Dr. Goldman's (limited) analysis on this point, the Court agrees with PacBio that the claim requirements, considered as a whole, are not abstract. (*See, e.g.*, D.I. 383 at 11) (citing evidence, including Dr. Dessimoz) Instead, the claim limitations "constitute

specific, concrete steps in a method that represents a significant improvement over existing nanopore sequencing methods." (D.I. 383 at 11) The Court agrees with PacBio that the claims "are plainly not ***directed to*** the abstract idea of comparing data." (*Id.* at 12) Accordingly, Oxford cannot prevail even at step 1 of the *Alice*[3] test, so summary judgment for PacBio on the subject matter eligibility of the '400 and '323 patents under § 101 is warranted.

5. Priority Dates of '929 and '056 Patents

PacBio and Oxford dispute whether the '929 and '056 patents are entitled to the priority dates of the '696 and '191 patent applications (the "earlier applications"), respectively.[4] While Oxford argues that PacBio's preliminary amendments to the '929 and '056 patents "include[d] new, essential matter" from the earlier applications, Oxford does not dispute PacBio's assertion that the ***original applications*** for the '929 and '056 patents incorporated the earlier applications by reference. (*See* D.I. 405 at 16-18) Even according to Oxford, then, PacBio's preliminary amendments to the '929 and '056 patents merely added material from patent applications that had already been incorporated. Thus, any material that PacBio added from these patent applications was not "new matter." *See Harari v. Hollmer*, 602 F.3d 1348, 1352 (Fed. Cir. 2010) (holding that patent's "preliminary amendment . . . does not contain new matter" because it "contains only content directly cut and pasted" from a previously-incorporated patent application). Thus, there is no genuine dispute that the '929 and '056 patents are entitled to the priority dates of the '696 and '191 patent applications, respectively. Consequently, the Court will grant summary judgment that the '929 patent is entitled to the September 24, 2008 priority

[3] *See Alice Corp. Pty. v. CLS Bank Int'l*, 573 U.S. 208, 216 (2014).

[4] The priority date for the '696 application is September 24, 2008. *See* '929 patent at 1:6-14. The priority date for the '191 application is March 30, 2009. *See* '056 patent at 24:28-32.

date of the '696 application and the '056 patent is entitled to the March 30, 2009 priority date of the '191 application.

C. Oxford's Motion to Preclude Testimony of Joshua Earl

Oxford argues that Dr. Earl's testimony on the "technical comparability" of Oxford's licenses to the asserted patents contradicts the Court's claim construction and is unsupported by any analysis. (D.I. 378 at 2-3) The Court agrees with PacBio, however, that Dr. Earl's testimony will help the jury determine if there is a "discernible link" between the licensed technology and the claimed invention. (D.I. 413 at 34) PacBio is also correct that Dr. Earl was not obligated to perform a full infringement analysis, as his opinion is limited to technical comparability. (D.I. 413 at 35; *see also Intellectual Ventures I LLC v. Check Point Software Techs. Ltd.*, 215 F. Supp.3d 314, 331 (D. Del. 2014)) Further, the Court disagrees with Oxford's contention that Dr. Earl's opinions about the technical comparability of the patent licenses are based on his opinion that Oxford could not practice nanopore sequencing without infringing the '400, '323, and '929 patents. (D.I. 418 at 15) Oxford has not identified where Dr. Earl expressed such an opinion.

Thus, the Court will deny Oxford's motion to preclude Dr. Earl's testimony.

D. PacBio's Motion to Strike and Preclude

1. Dr. Goldman's Non-Infringement Testimony

PacBio seeks to exclude Dr. Goldman's opinion that purportedly "adds an order-of-steps requirement that the calibration data be produced after a value of N is determined" as such an opinion would, in PacBio's view, contradict the Court's claim construction opinion. (D.I. 383 at 21-22) But the Court's claim construction opinion provided that a POSA can only obtain the calibration data "by measuring such property [current] for 4 to the N sequence combinations" –

hence, a POSA can only obtain the calibration data after first determining the value of N. (D.I. 405 at 20) Further, two of PacBio's experts agree with Dr. Goldman that N's value must be determined before obtaining calibration data. (D.I. 405 at 21-22) Thus, the Court will not exclude Dr. Goldman's non-infringement testimony.

2. Dr. Hrdlicka's Testimony

The Court will not exclude Dr. Hrdlicka's testimony related to whether a "POSA would understand that determining a consensus sequence requires at least three reads." (D.I. 383 at 22) As the Court has previously noted, "[w]hether the embodiment about which the parties are disagreeing is limited to two reads or allows for at least three reads is a factual dispute that need not be resolved in order to construe the claim term." (D.I. 152 at 12) Both parties will have a chance to present their case to the jury on this dispute and Dr. Hrdlicka's testimony will be helpful to the jury in understanding the issue and Oxford's position on it.

Nor will the Court exclude Dr. Hrdlicka's testimony regarding polynucleotides. (D.I. 383 at 23) PacBio is incorrect when it asserts that Dr. Hrdlicka "add[ed] a requirement that [the] term 'polynucleotide' refer[s] only to 'long' polynucleotides." (D.I. 383 at 23) When asked during his deposition whether the relevant polynucleotide "would have to be a long polynucleotide," Dr. Hrdlicka said only that "a POSA would be motivated to go to the Akeson patent for the methods and -- and the teachings that are disclosed therein, which includes a working example that entails a 64-mer single-stranded DNA." (D.I. 409 Ex. 23 at 252-53) His analysis does not improperly add a new requirement that contradicts the Court's claim construction.

3. Dr. Layne-Farrar's Testimony and Second Supplemental Report

PacBio seeks to exclude Dr. Lane-Farrar's testimony with respect to 18 Oxford license agreements on the grounds that this Oxford expert "did not . . . perform or rely on any analysis of [their] technical comparability." (D.I. 383 at 24) As Oxford shows, however, Dr. Layne-Farrar concluded that these licenses contained language and royalty rates similar to those in the three licenses analyzed by PacBio's expert, Dr. Prowse. (D.I. 405 at 26) Further, PacBio does not dispute that Dr. Layne-Farrar's testimony regarding all 21 licenses is relevant to *Georgia Pacific* factor 12. (D.I. 420 at 12-13) As Oxford notes (*see* D.I. 405 at 27), PacBio can challenge Dr. Layne-Farrar's testimony and analysis at trial, including through cross-examination and its own expert's testimony. *See also Acceleration Bay LLC v. Activision Blizzard, Inc.*, 324 F. Supp. 3d 470, 487 (D. Del. 2018). Thus, the Court will not exclude this testimony.

Likewise, the Court will not exclude Dr. Layne-Farrar's testimony regarding the value of the upfront lump sum payment. As PacBio concedes, Dr. Layne-Farrar determined the upfront lump sum figure after considering Oxford's "average upfront payments . . . to license nanopore technologies, when it is also paying a running royalty." (D.I. 383 at 25-26) Whether this figure is "reasonable" as part of the reasonable royalty analysis is a factual question for the jury. *See Apple Inc. v. Motorola, Inc.*, 757 F.2d 1286, 1315 (Fed. Cir. 2014), *overruled on other grounds in Williamson v. Citrix Online, LLC*, 792 F.3d 1339 (Fed. Cir. 2015) ("This court has recognized that questions regarding which facts are most relevant or reliable to calculating a reasonable royalty are for the jury.") (internal quotation marks omitted).

For the same reason, the Court will not exclude Dr. Layne-Farrar's testimony on the availability of non-infringing alternatives. *See CardioNet, LLC v. ScottCare Corp.*, 2017 WL 4742476, at *9 (E.D. Pa. Oct. 19, 2017) ("Whether an alternative product would have been

available and/or acceptable during the infringement period are factual determinations [that] must be made by the trier of fact after [the] opportunity to present evidence supporting the underlying facts that form the basis for [the expert witness's] opinions.").

Finally, the Court will not exclude Dr. Layne-Farrar's Second Supplemental Report, which discusses PacBio's proposed remedies for antitrust concerns raised by the UK's Competition and Markets Authority ("CMA"). Oxford has demonstrated the Report is relevant, as it purportedly contradicts PacBio's arguments that (1) PacBio would never license the patents-in-suit and that (2) the patents-in-suit are necessary for nanopore sequencing. (D.I. 405 at 30) Further, PacBio has not persuaded the Court that introducing the Report will confuse or mislead the jury.

3. Dr. Akeson's Testimony

The Court will not exclude Dr. Akeson's testimony based on non-prior art documents. (D.I. 383 at 30) As Oxford shows, this testimony is relevant to issues related to enablement and written description, and PacBio can prevent any risk of jury confusion by cross-examining Dr. Akeson at trial. (D.I. 405 at 31-32) Likewise, the Court will not exclude what PacBio characterizes as Dr. Akeson's "narrative history of his work," as again this will be helpful to the jury and will be a proper subject for cross-examination. (D.I. 383 at 34-35)

The Court also will not exclude Dr. Akeson's testimony based on documents that Oxford produced after the close of fact discovery. (D.I. 383 at 31-33) PacBio has failed to show that it has suffered incurable prejudice as a result of Oxford's purported delay. PacBio claims it was unable to depose Dr. Winters-Hilt "and other percipient witnesses from their laboratories" or obtain "documents and records" from their laboratories (D.I. 383 at 33), but Oxford put PacBio on notice of Dr. Winters-Hilt's relevance by listing him as a prior art author as early as its July

2018 invalidity contentions (D.I. 409 Ex. 33 at 20, 33). Further, when Oxford asked PacBio in a September 2019 call to "identify any third party discovery [PacBio] believes it should have had the opportunity to take regarding [matters related to Dr. Akeson] during fact discovery, [PacBio] did not identify any such third parties or discovery on the call." (D.I. 409 Ex. 38 at 1)

However, the Court will exclude Dr. Akeson's opinions on obviousness and enablement. Oxford does not dispute that Dr. Akeson did not apply the proper legal standard; instead, it argues that Dr. Akeson "does not offer opinions about the ultimate issues of obviousness and enablement" and merely "used the terms 'enable' and 'obvious' according to . . . their ordinary meaning." (D.I. 405 at 31-32) But Dr. Akeson presents his opinions in a manner that could improperly lead a jury to conclude that he is offering conclusions on the ultimate legal issues of obviousness and enablement, and his opinions applying the "ordinary meaning" of "enable" and "obvious" will not be helpful to the jury. Dr. Akeson conceded that he did not know the proper legal standard for obviousness and enablement; his conclusions on these subjects are unreliable and will confuse the jury. (*See* D.I. 383 at 34) (citing D.I. 385 Ex. 10 at 117-18, 339-40) Thus, the Court will exclude these opinions.

IV. CONCLUSION

An appropriate order follows.

IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

PACIFIC BIOSCIENCES OF CALIFORNIA, INC.,	:	
Plaintiff,	:	
v.	:	C.A. No. 17-275-LPS-CJB C.A. No. 17-1353-LPS-CJB
OXFORD NANOPORE TECHNOLOGIES, INC. and OXFORD NANOPORE TECHNOLOGIES, LTD.,	:	
Defendants.	:	

ORDER

At Wilmington, this 19th day of February, 2020, for the reasons discussed in the Memorandum Opinion issued this date,

IT IS HEREBY ORDERED that:

1. Defendants Oxford Nanopore Technologies, Inc. and Oxford Nanopore Technologies, Ltd.'s (collectively, "Oxford") Motion for Summary Judgment (C.A. No. 17-275 D.I. 382; C.A. No. 17-1353 D.I. 412) is GRANTED IN PART and DENIED IN PART, as detailed in the Memorandum Opinion.

2. Oxford's Motion to Exclude Portions of the Testimony of Joshua Earl (C.A. No. 17-275 D.I. 377; C.A. No. 17-1353 D.I. 408) is DENIED.

3. Plaintiff Pacific Biosciences of California, Inc.'s ("PacBio") Motion for Partial Summary Judgment (C.A. No. 17-275 D.I. 380; C.A. No. 17-1353 D.I. 411) is GRANTED IN PART and DENIED IN PART, as detailed in the Memorandum Opinion.

4. PacBio's Motion to Strike and Preclude Testimony (C.A. No. 17-275 D.I. 381; C.A. No. 17-1353 D.I. 413) is GRANTED IN PART and DENIED IN PART, as detailed in the Memorandum Opinion.

5. In order to permit the parties to provide a proposed final pretrial order ("PTO") that reflects the rulings contained in the Memorandum Opinion, (a) the PTO shall be filed on **Saturday, February 22 by 6:00 p.m.** and (b) the pretrial conference will be held on **Friday, February 28 at 9:00 a.m.**

6. Because the Memorandum Opinion was filed under seal, and may (or may not) contain information that should remain sealed, the parties shall meet and confer and, if any party seeks any redactions, shall submit, no later than February 20, 2020, a proposed redacted version, accompanied by a memorandum providing the legal and factual support for any requested redactions. Thereafter, the Court will issue a public version of its Memorandum Opinion.

UNITED STATES DISTRICT COURT