IN THE UNITED STATES DISTRICT COURT
FOR THE DISTRICT OF DELAWARE

10X GENOMICS, INC. and PROGNOSYS BIOSCIENCES, INC.,	)	
Plaintiffs,	)	
vs.	)	**Case No. 21 C 653**
BRUKER SPATIAL BIOLOGY, INC., BRUKER NANO, INC., and BRUKER CORP.,	)	
Defendants.	)	

MEMORANDUM OPINION AND ORDER

MATTHEW F. KENNELLY, District Judge:

10x Genomics, Inc. and Prognosys Biosciences, Inc. (collectively 10x) sued NanoString Technologies, Inc.[1] for patent infringement. Following a five-day trial, the jury found that NanoString willfully, directly, and indirectly infringed 10x's asserted patents. The jury awarded 10x over twenty-five million dollars in lost profits and over six million dollars in lost royalties.

NanoString has moved for judgment as a matter of law on invalidity, infringement, and damages or, in the alternative, for a new trial. 10x, on the other hand, has moved for entry of a permanent injunction, enhancement of damages, attorneys' fees, supplemental damages, and pre-judgment and post-judgment interest. For the reasons stated below, the Court denies NanoString's motion and grants 10x's motion in

[1] Bruker Corporation acquired NanoString following the filing of these motions. In this decision, the Court will refer to the defendants as NanoString.

part.

Background

The Court assumes familiarity with this case's factual and procedural background, which this Court has discussed in its prior written opinions. 10x and NanoString are biotechnology companies that offer tools for studying genetic material on a cellular level. 10x and NanoString offer competing sequencing-based tools for performing spatial analyses of biological molecules: 10x offers products called Visium, and NanoString offers products called GeoMX.

10x owns seven patents from the inventor Dr. Mark Chee upon which its Visium products are founded: United States Patent Nos. 10,472,669 (the '669 patent); 10,961,566 (the '566 patent); 10,983,113 (the '113 patent); 10,996,219 (the '219 patent); 11,001,878 (the '878 patent); 11,008,607 (the '607 patent); and 11,293,917 (the '917 patent) (collectively, 10x patents). The 10x patents share a common specification, which states the invention "encompasses assay systems that provide high-resolution spatial maps of biological activity in tissues." '917 Patent at 2:26-27. The invention incorporates next generation sequencing (NGS) whose key feature is multiplexing, which, as used here, is the ability to simultaneously analyze multiple biological targets. Creating a high-resolution spatial map of a tissue sample involves introducing to the sample reagents that bond with complementary DNA or RNA molecules or proteins that can later be decoded through a sequencing process. This encoding scheme allows target genes or proteins to be correlated to their locations in the tissue. "In short, the [] invention provides the ability to look at many biological targets in many locations, providing the resolution of in situ hybridization with the highly-parallel data analysis of

sequencing." '917 Patent at 2:33-36.

10x brought this lawsuit against NanoString, contending that NanoString's GeoMX products infringed upon 10x's patents. Throughout this litigation, NanoString has taken the position that 10x's patents require the delivery of reagents to a tissue in a spatial pattern (targeted delivery) and indiscriminate removal, whereas GeoMx products do not. Instead, NanoString asserts, its GeoMx products use targeted removal of material from specific regions of the tissue—and the correspondence between the sample well that material is placed in and the tissue location from which it originated—to generate spatial information. In earlier orders relating to claim construction and summary judgment, the Court has addressed, and rejected, NanoString's reading of 10x's patents.

A. Claim construction

During claim construction, NanoString proposed construing most of the relevant claims to require encoding location information on the tissue in accordance with a known spatial pattern. For example, for the term "delivering a plurality of probes to a tissue sample" that appears in claim 1 of the '878, '113, '669, and '219 patents, NanoString proposed construing the term as, "immobilizing a plurality of probes on the tissue sample in a spatial pattern." D.I. 207 at 6. Adopting the plain and ordinary meaning of the relevant claim language, the Court found that NanoString's construction was too narrow because the claim language applies to preferred embodiments that called for targeted delivery as well as other methods and technologies for delivering probes "with *and without* a pattern." *Id.* at 7. The Court explained that the patents' specification describes that the probes can be delivered to segmented or sequestered

regions for biological target determination, allowing reagents to be removed in a targeted fashion that preserves location information.

Additionally, for the term "generating" that appears in the '566 and '607 patents, NanoString proposed construing the term as requiring "creating probes on the tissue according to a spatial pattern." *Id.* at 11. The Court rejected NanoString's argument that any construction that was not narrowed to "applying reagents to the tissue in a spatial pattern" was contrary to the inventor's intent. *Id.* at 12. The Court found that the claim language did not require "generating" to occur on the tissue, explaining that the patents are flexible about *where* the "generating" can occur and teach only that "generating" occurs between the contacting and sequencing steps. Moreover, the Court noted that dependent claim 28 of the '566 patent and claim 3 of the '607 patent both require removal of the oligonucleotide from the tissue sample prior to the generating step, making generating on the tissue sample impossible.

Further, NanoString proposed construing the term "reagent delivery system" from claim 1 of the '917 patent to mean "a system that can be used to immobilize a plurality of probes on a tissue sample in a spatial pattern." *Id.* at 13–14. The Court rejected NanoString's proposed limitations, finding that what "is central to the patented system is its ability to ensure discrete delivery or retrieval" and that maintaining the integrity of spatial patterns can be accomplished in a number of ways. *Id.* at 14. The Court concluded that there was no basis to limit "reagent delivery system" to delivery of reagents "to" a tissue sample or "in a spatial pattern." *Id.* at 15. The Court explained that "maintaining the integrity of spatial patterns—through preserving location information in some form—can be accomplished a number of ways . . . not just through

delivery of probes." *Id.* at 14. The Court also concluded that "reagents" could not be defined as "probes" because "one of ordinary skill would understand that there are many different reagents involved in the assays described in the specification, including buffers, enzymes, nucleic acids, solvents, and other agents." *Id.* at 15.

Finally, for the terms "removing the oligonucleotide from [the/a] region of interest" and "removing the all [sic] or a portion of the oligonucleotide from a region of interest," NanoString proposed construing this language to require *en masse* removal of oligonucleotides from the tissue sample by elution. *Id.* at 19. The Court rejected this proposed construction, finding that the patents contemplate more than just indiscriminate removal of oligonucleotides by washing with a solvent. The Court noted that the specification describes alternative techniques and technologies for separating oligonucleotides from probes beyond elution, including moving fluid into segmented or sequestered channels. And the Court found that requiring removal *en mass*e was not supported by the claim language, which states, "removing the oligonucleotide *from a region of interest*, i.e., from less than the entire tissue sample." *Id.* at 21.

B. Summary judgment and pre-trial motions

NanoString raised identical or similar arguments when it moved for summary judgment on the basis of invalidity for lack of written description. Indeed, NanoString asserted that the Court's constructions were incorrect and that, "with the benefit of a complete record, the Court should take a fresh look at the disclosure." D.I. 255 at 10. NanoString argued that the patents were invalid because the specification called for spatial patterning, which "involves application of reagents to the sample as an input to the process so as to encode spatial location information within the sample," and the

patents' claims had not been construed as imposing such a requirement. *Id.* at 9. The Court rejected NanoString's argument and denied its motion for summary judgment, finding the evidence showed a genuine dispute of material fact on the written description defense. The Court cited, among other things, the opinion of 10x's expert witness Dr. Rahul Satija that a person of ordinary skill in the art (POSITA) would understand the specification as describing "techniques, technologies, and methods to associate spatial identity with target molecules without performing targeted delivery in a spatial pattern of probes or oligonucleotides to the tissue sample." *Id.* at 10 (internal quotation marks omitted).

NanoString presented the same arguments in response to 10x's *Daubert* motion to exclude NanoString's expert witness Dr. Jeremy Edwards. NanoString argued that the Court's claim construction ruling was wrong, was based on an incomplete record, incorrectly relied on a disputed fact, and deprived it of a jury trial on its written description defense. The Court rejected NanoString's arguments, stating among other things that "[a] party disappointed by a pretrial ruling on a matter of law does not have the option of acting at trial as if the ruling did not exist." D.I. 282 at 7. The Court nonetheless acknowledged that interpretation of a patent's claims and specifications is treated differently when analyzed in connection with claim construction and in connection with a written description defense, namely, the former is a question of law but the latter involves questions of fact. The Court limited Dr. Edwards' testimony that ran counter to the Court's claim construction ruling but permitted NanoString to present evidence at trial that the patent specification does not disclose the claimed invention.

The Court subsequently excluded certain testimony and opinions from

NanoString's experts based on its claim construction and summary judgment rulings. Namely, the Court excluded NanoString's proposed claim construction expert witness Dr. Stacey Gabriel. The Court found that Dr. Gabriel's testimony would be unnecessarily cumulative because NanoString had already retained a separate expert, Dr. Edwards. Moreover, the Court found that NanoString had not carried its burden under Federal Rule of Evidence 703 to establish that the probative value of Dr. Gabriel's opinions substantially outweighed the unfairly prejudicial effect of introducing her testimony. Additionally, the Court found that NanoString failed to make a proper disclosure for Dr. Gabriel as required by Federal Rule of Evidence 26(a)(2)(B).

Regarding damages, NanoString moved to exclude 10x's damages expert Julie Davis's reasonable royalty rate opinions, which were based on the hypothetical negotiation approach and the analytical approach. Under the hypothetical negotiation approach, NanoString argued, any reliance by Davis on 10x's acquisition of ReadCoor was inappropriate because the acquisition was for the entire company and involved more than just a patent license. The Court rejected this argument for categorical exclusion, finding that the acquisition was relevant because it included patents central to the technology at issue. NanoString further argued that Davis improperly used the entire in situ in-process research & development technology (IPR&D) valuation regarding ReadCoor, which included non-patented technology and other intangible assets. The Court disagreed, noting that Davis explained the entire value was attributed to the patents because 10x had no alternative use for the non-patented assets. The Court further ruled that any claimed deficiencies in Davis's opinions went to the weight to be given to them and were more appropriately left for cross examination

and attorney argument. Finally, NanoString contended that Davis ignored more comparable licenses, such as ReadCoor's license with Harvard and Prognosys's license with 10x. But the Court found that Davis considered those licenses and reasonably concluded they were less economically comparable than evidence relating to the ReadCoor acquisition.

NanoString further argued that Davis's proposed reasonable royalty rate under the analytical approach was unreliable because she used gross profit margins rather than net profits. But the Court found Davis's methodology sound: she explained that gross profits were appropriate given that research and development costs had already been incurred at the time of the hypothetical negotiation. NanoString also criticized Davis for failing to account for differences between the nCounter and GeoMx platforms, including their lifecycles. But the Court found that Davis adequately explained that the GeoMx platform relied on the patented technology, unlike nCounter.

C. Jury trial

The Court presided over a five-day jury trial from November 13 through November 17, 2023. The jury heard witnesses on both sides who testified regarding NanoString's alleged infringement, its defense of invalidity for lack of written description, and 10x's alleged damages. In particular, the jury heard from a number of expert witnesses: Dr. Edwards, Dr. Satija, Ms. Davis, and Dr. Joseph Quakenbush.

1. Dr. Edwards

NanoString's expert Dr. Edwards opined that all of 10x's patents are invalid because there is a mismatch between the specification and the claims, with the claims being broader than what the specification disclosed. Dr. Edwards testified the central

idea of Dr. Chee's invention was that the encoded probes are delivered in a defined spatial pattern. Citing to the language in the patent that "[i]ntegral to the assay system of the invention is instrumentation that allows for spatial patterning of reagents onto the biological sample," Dr. Edwards testified that spatial patterning of reagents onto a biological sample is essential for the invention. '917 Patent at 16:21-23. Dr. Edwards testified that the specification teaches that encoded probes are delivered to a tissue sample in a spatial pattern, the probes interact with biological targets, and the probes that did not interact with a biological target are washed away in the elution process "across the entire tissue all at once." Tr. 717:22-23. Dr. Edwards explained that "the removal step in the specification only describes one way, which is a bulk indiscriminate removal from the tissue all at one time." Tr. 726:12-14. He cited to language in the specification that "[t]he products of a multiplexed assay are removed and pooled for analysis," testifying, "[t]hey're just removed and they're pooled, because all the encoding information is already there." Tr. 731:23-24. As further support, Dr. Edwards noted that the background section of the specification included disparaging comments about previous methods that used targeted removal.

Dr. Edwards also addressed Dr. Satija's opinions and disagreed that a POSITA would read the specification and understand it to teach targeted removal. With respect to the specification's reference to segmentation, Dr. Edwards testified that segmentation was limited to delivery of encoded probes to a tissue sample. Dr. Edwards opined that a POSITA would not understand from the specification that targeted removal could be done with sample indexing, testifying the specification does not mention sample indexing at all. And Dr. Edwards testified that Dr. Chee did not invent a protein assay.

2. Dr. Satija

10x's expert Dr. Satija, by contrast, opined that a POSITA would read the patents and understand Dr. Chee's invention to disclose multiple options to perform spatial barcoding, including the ability to perform the spatial barcoding analysis off the tissue. Dr. Satija cited to language from the patents on segmentation, pumps, tagging, and sample indexing as support. Regarding segmentation, Dr. Satija cited the specification language to the effect that "[f]or several applications, it may be preferred to segment or sequester certain areas of the biological samples into one or more assay areas for different reagent distributions and/or biological target determination." '917 Patent at 16:41-45. Dr. Satija explained that the phrase "biological target determination" refers to targeted removal, whereas "different reagent distribution" refers to targeted delivery. Tr. 936:4-5. Dr. Satija explained that "if you're doing biological target determination from a given segment, you have to go to that segment [a]nd you're going to have to remove molecules or sample in some way, then analyze them and figure out what molecules are present inside of it." Tr. 936:5-9. Dr. Satija described step by step how a POSITA would understand this passage for barcoding in the patent, including how both targeted removal and targeted delivery allow you to "learn where each molecule was originally located." Tr. 939:17-18. Regarding segmentation, he described types of barriers that could "erect on tissue in order to create different segments." Tr. 937:7. He explained that "each segment corresponds to a different spatial location on the tissue, just like the patent says." Tr. 937:9-11. Dr. Satija explained segmentation through use of a multi-well plate where "every well is loaded with a unique and different barcode sequence [a]nd every one of those barcodes sequences corresponds to a distinct and unique

spatial location or segment on the tissue." Tr. 938:2-7. Dr. Satija further explained, "once every segment is tagged with its correct spatial barcode—this is the beauty of the invention—now you can mix all the different segments, all the different molecules together and load them onto the DNA sequencer. Then the DNA sequencer is just going to scan all of those barcodes, millions of them at the same time, and each time it's going to tell you what is the identity of the molecule and what was its original spatial location in the tissue." Tr. 938:9-17. Dr. Satija described how segmenting can associate molecules with their location, including off tissue, stating, "[t]he first way is a user can go to an individual segment; it can suck up the material; and it can transfer it onto its corresponding barcode. So this is an example of targeted removal. You're removing material off of a tissue, and you're doing the spatial barcoding step off of the tissue. So that's one possibility." Tr. 938:22-939:3. Dr. Satija rebutted Dr. Edwards's opinion that the reference to segmentation in the specification was only about delivering codes to the tissue sample and not about removal. Dr. Satija testified that Dr. Edwards's opinion was limited to the term "different reagent distribution" but that the specification expressly states "[y]ou can also do biological target determination, and/or" different reagent distribution. Tr. 940:5-6.

Regarding pumps, Dr. Satija testified regarding how the reagent delivery system hardware is understood to provide both targeted removal and targeted delivery in spatial assays. Dr. Satija explained how a POSITA would understand the patent's language of positive and negative pressure as disclosing delivery and removal, as the "way that pumps work." Tr. 941:7. Dr. Satija explained that the specification teaches that pumps can move fluid bidirectionally, citing the specification language that "[t]he pump can

operate mechanically by exerting a positive or negative pressure on fluid and/or on a structure carrying fluid . . . ." '917 Patent at 27:47-50. Dr. Satija explained that applying negative pressure to a pump is an example of targeted removal because "you're going to be removing material from the tissue," "you're going to suck fluid into a pump . . . like a straw." Tr. 941:11-13, 23-25.

As to sample indexing, Dr. Satija testified that the patents teach that encoding spatial information can happen away from the tissue. Dr. Satija explained that sample multiplexing was the "idea of adding different sample barcodes to different segments or different groups of molecules." Tr. 942:24-25. Dr. Satija testified that "Illumina sequencing is specifically mentioned in the patents" and that a POSITA "who was familiar with Illumina would know that you can add barcodes" and "would certainly understand that it discloses adding those types of sample barcodes after removal to each segment." Tr. 942:19-20, 13-14, 943:4-5. He further testified that "the patents have explicit disclosures on the addition of sequencing adapters" and a POSITA would know "you can add these sequencing adapters is to include sample multiplexing barcodes at the same time." Tr. 943:7-8, 24-25. And Dr. Satija explained that the '917 Patent describes adding spatial tags after cleavage and removal, because "[t]he sequence of the tagged molecules is immediately determined and . . . that sequence can be used to map back to the locations in the biological sample." Tr. 945:19-946:1. Dr. Satija disagreed with Dr. Edwards' opinion that Dr. Chee did not invent a protein assay, noting that the term "protein" appears thirty times in the specification. Dr. Satija also testified about the specification's language about analysis of protein assays, noting that the patent expressly describes ways to perform these protein assays.

3. Dr. Quackenbush

10x expert Dr. Quackenbush testified regarding NanoString's infringing GeoMx products. Having reviewed NanoString records, Dr. Quackenbush opined that all of 10x's patents were infringed by GeoMX's products and workflow. Dr. Quackenbush identified each patent limitation in GeoMx-NGS's step-by-step workflow.[2] Notably, Dr. Quackenbush explained that step seven in the '219 Patent, "using the determined sequence to determine the presence of the target biological molecule at the region of interest in the tissue sample," appears in GeoMx's workflow. Tr. 314:17-21. Dr. Quackenbush noted that GeoMx's workflow "tells us that sequencing reads the barcode . . . this oligonucleotide in the sequence." Tr. 313:18-19. Dr. Quackenbush explained that the information coupled with testimony about "the i5 and i7 oligonucleotides, which encode information about the spatial position based on each well -- those are also read-out. So those are the indices that the manual here talks about." Tr. 314:1-4. He explained, "[a]nd the indices i5 and i7 actually encode the spatial information, as we heard from Dr. Hoang." Tr. 315:1-2. He concluded, "[s]o that oligo is used to uniquely determine the presence of the target biological molecule in the region of interest." Tr. 318:16-18; *see* Tr. 318:22-25. Dr. Quackenbush did the same analysis for the GeoMx-nCounter workflow. He explained, "[s]o this is determining all or a portion of a sequence of the oligonucleotide. And that's present. It's just done in a slightly different way, sequencing by hybridization." Tr. 332:9-11. He testified that for the n-Counter, oligonucleotides are designed to correspond and bind with "specific sequences of the

[2] Exemplary evidence was presented for representative Claim 21 of the '219 Patent (asserted against GeoMx-NGS for RNA) and representative Claim 10 of the '669 Patent (against GeoMx-NGS for protein).

ATS and aPCP." Tr. 333:9. He explained that "the sequence is read out in the nCounter instrument, and then that sequence is used to determine the presence or abundance of the target protein" and "maps back to this region of interest." Tr. 333:22-24, 334:1. He explained the n-Counter uses eight HYB packs and twelve columns of microtiter plates in a unique sequence, collects the data, and creates an RCC file, which can be decoded via the GeoMx software to map back to the region of interest. *See* Tr. 334:2-336:19.

Regarding the '917 Patent, Dr. Quackenbush testified regarding how GeoMx DSP documents discuss removing tissue:

> And then once you've selected the region of interest, that region of interest, we're going to see -- as we talked about before, that little thing that popped out is the probe, the oligonucleotide that we're going to use. UV light shines up from the bottom. It breaks that link there so the probes now can be aspirated, transferred by the capillary. So what we're going to see now is the capillary come down. It's going to suck up those little reporters, those oligonucleotides, and those are going to be transferred to a well. In this case, it's going into well A2. So it's probably the second region of interest. Each well has its own unique identity.

Tr. 348:9-20. He also testified regarding the elution composition in the GeoMx DSP, explaining that NanoString documents show "liquid is delivered to that region of interest. It's put down and then sucked up to elute or to remove those oligonucleotide barcodes and put them in a specific well." Tr. 356:19-22. He further testified that a NanoString document "says steps are performed for each region of interest. The area of interest around the ROI is washed by dispensing some solution to the microcapillary. And then that elutant is collected from the local region through the microcapillary and transferred to an individual well." Tr. 356:25-357:1-4. And Dr. Quackenbush testified that the liquid transferred in the GeoMx DSP system is done through, "a microcapillary. It's a reagent channel."

Tr. 349:24.

4. Ms. Davis

The jury also heard from 10x's damages expert Julie Davis. Davis opined that 10x had $41.4 million in damages from May 6, 2021 through October 13, 2023 (the date of the most recent financial information from the parties). She explained she reviewed documents from both parties, as well as witness testimony, to make her determinations. She calculated 10x's lost profits at $34.1 million, noting the profits would have been $35.4 million but 10x would have incurred $1.2 million in costs to pay its salespeople. Tr. 424:22-425:7. Davis testified regarding the factors set out in *Panduit Corp. v. Stahlin Bros. Fibre Works*, 575 F.2d 1152 (6th Cir. 1978), when discussing lost profits.

For the relevant time period, Davis testified that GeoMx sales were about $42 million, while Visium sales were $88 million. She projected the market to be a $3 billion market. Davis discussed several documents that spoke to NanoString and 10x being head-to-head competitors. *See* Tr. 420:1-422:8. She testified regarding the market being a two-supplier market with no noninfringing substitutes. Tr. 419:16-4:20:13. Davis testified regarding 10x having a larger sales force and marketing message. Davis testified that 10x had the marketing capabilities to meet the demands of the market if NanoString had never sold GeoMx products. Davis concluded that 10x "had significant capacity both at the Pleasanton and the Singapore facilities to manufacture additional product." Tr. 421:15-17. Davis also testified regarding reasonable royalty rates, relying in part on 10x's acquisition of ReadCoor.

5. The jury's verdict and the present motions

The jury rendered a verdict in favor of 10x and against NanoString on 10x's

claims and NanoString's counterclaims. Specifically, the jury found that NanoString willfully, directly, and indirectly infringed claim 10 of the '669 patent, claim 17 of the '566 patent, claim 2 of the '113 patent, claim 21 of the '219 patent, claim 25 of the '878 patent, claim 17 of the '607 patent, and claim 5 of the '917 patent. The jury did not find non-infringement or invalidity of any of 10x's asserted patent claims. The jury awarded 10x damages consisting of $25,611,347.20 in lost profits and $6,061,306.62 in reasonable royalties, applying a 12.5% royalty rate.

NanoString has now moved for judgment as a matter of law and for a new trial. 10x has moved for entry of a permanent injunction, enhanced damages, and pre-judgment interest.

Discussion

A. NanoString's motion for judgment as a matter of law or new trial

NanoString seeks judgment as a matter of law on invalidity, infringement, willfulness, and damages. In the alternative, NanoString requests a new trial or that the Court revisit its claim construction ruling.

The law of the regional circuit—here the Third Circuit—governs the standards for deciding motions for judgment as a matter of law under Federal Rule of Civil Procedure 50(b) and a new trial under Federal Rule of Civil Procedure 59(a). Judgment as a matter of law may be entered against a non-moving party if a court finds that a "reasonable jury would not have a legally sufficient evidentiary basis to find for the party." Fed. R. Civ. P. 50(a). In ruling on a renewed motion, "the court may: (1) allow judgment on the verdict, if the jury returned a verdict; (2) order a new trial; or (3) direct the entry of judgment as a matter of law." Fed. R. Civ. P. 50(b).

"To prevail on a renewed motion for JMOL following a jury trial, a party must show that the jury's findings, presumed or express, are not supported by substantial evidence or, if they were, that the legal conclusion(s) implied by the jury's verdict cannot in law be supported by those findings." *Pannu v. Iolab Corp.*, 155 F.3d 1344, 1348 (Fed. Cir. 1998) (internal quotation marks and alterations omitted). "Substantial evidence is such relevant evidence as a reasonable mind might accept as adequate to support a conclusion." *Enplas Display Device Corp. v. Seoul Semiconductor Co., Ltd.*, 909 F.3d 398, 407 (Fed. Cir. 2018) (internal quotation marks omitted).

"Judgment as a matter of law is to be granted sparingly." *Fair Hous. Council of Suburban Philadelphia v. Main Line Times*, 141 F.3d 439, 442 (3d Cir. 1998). In the Third Circuit, a "court may grant a judgment as a matter of law contrary to the verdict only if the record is critically deficient of the minimum quantum of evidence to sustain the verdict." *Acumed LLC v. Advanced Surgical Servs., Inc.*, 561 F.3d 199, 211 (3d Cir. 2009) (internal quotation marks omitted). A court must also give the "verdict winner[] the benefit of all logical inferences that could be drawn from the evidence presented, resolve all conflicts in the evidence in his favor and, in general, view the record in the light most favorable to him." *Williamson v. Consol. Rail Corp.*, 926 F.2d 1344, 1348 (3d Cir. 1991). A court may "may not weigh the evidence, determine the credibility of witnesses, or substitute its version of the facts for the jury's version." *Acumed LLC*, 561 F.3d at 211 (internal quotation marks omitted).

A court has discretion to grant a new trial "for any of the reasons for which new trials have heretofore been granted in actions at law in the courts of the United States." Fed. R. Civ. P. 59(a). Under governing Third Circuit law, a court "should grant a new

trial only if the jury's verdict is against the great weight of evidence and either is a miscarriage of justice or cries out to be overturned." *Pac. Biosciences of California, Inc. v. Oxford Nanopore Techs., Inc.*, 996 F.3d 1342, 1352 (Fed. Cir. 2021) (internal quotation marks omitted).

The Court notes that NanoString argues the jury lacked substantial evidence to make a particular finding yet fails to meaningfully engage with all the evidence presented at trial or acknowledge the appropriate function of the jury in weighing the evidence presented at trial.

1. Written description

NanoString argues that it is entitled to JMOL or a new trial because 10x's patents are invalid for lack of written description. Specifically, NanoString argues that the written description does not teach targeted removal.

"To satisfy the written description requirement, the specification must reasonably convey to those skilled in the art that the inventor had possession of the claimed subject matter as of the filing date." *Energy Transp. Grp., Inc. v. William Demant Holding A/S*, 697 F.3d 1342, 1350 (Fed. Cir. 2012) (internal quotation marks and alterations omitted). "A patentee may rely on information that is well-known in the art to the extent it informs how a relevant artisan would reasonably understand what is actually described in the specification." *BASF Plant Sci., LP v. Commonwealth Sci. & Indus. Rsch. Organisation*, 28 F.4th 1247, 1264 (Fed. Cir. 2022) (internal quotation marks omitted).

Substantial evidence supports the jury's verdict on written description. Dr. Satija testified that a POSITA would understand the specification as describing both targeted delivery and targeted removal. Dr. Satija cited to the specification's language on

segmentation, pumps, sample indexing, and protein assays as support. For instance, Dr. Satija testified that "biological target determination" refers to targeted removal, whereas "different reagent distribution" refers to targeted delivery. Tr. 936:4-5. Dr. Satija testified that applying negative pressure to a pump is an example of targeted removal because "you're going to be removing material from the tissue," "you're going to suck fluid into a pump . . . like a straw." Tr. 941:11-13, 23-25. And Dr. Satija testified that "Illumina sequencing is specifically mentioned in the patents" and that a POSITA "who was familiar with Illumina would know that you can add barcodes" and "would certainly understand that it discloses adding those types of sample barcodes after removal to each segment." Tr. 942:19-20, 13-14, 943:4-5.

NanoString and its expert Dr. Edwards disagree with this reading of the specification. But the existence of competing testimony is insufficient to overturn a jury's verdict unless the evidence "make[s] only one finding on the point reasonable." *MobileMedia Ideas LLC v. Apple Inc.*, 780 F.3d 1159, 1168 (Fed. Cir. 2015). That is not the case here. As previously described, the specification includes language that supports that the specification teaches targeted removal and not just targeted delivery.

NanoString argues that outside of Dr. Edwards's testimony, Dr. Chee's testimony supports that the specification does not teach targeted removal. This is not so. Dr. Chee testified that encoded probes delivered in a spatial pattern to a tissue was one form of the invention, but that the "invention wasn't limited to that" and that spatial patterning could occur "in more than one way at more than one step of the process." Tr. 146:4-9. Accordingly, the Court upholds the jury's verdict on NanoString's written description defense.

2. Infringement

NanoString seeks JMOL or a new trial, arguing that there was insufficient evidence from which a jury reasonably could find infringement. NanoString presents its arguments over two paragraphs. First, NanoString argues no reasonable jury could find that use of GeoMx products directly infringed the "determined sequence" or analogous limitation in the claims of the '219, '669, '566, '113, '878, and '607 patents. The Court disagrees.

Substantial evidence supports the jury's verdict of infringement. 10x presented evidence of target sequences as the "determined sequences." The evidence and theory supporting the verdict is that the target sequences are determined and are used in combination with the i5/i7 indices to map targets to locations. And 10x presented evidence that the target sequence for the GeoMx-NGS probe is an oligonucleotide sequence; the target sequence is determined during the NGS step of the GeoMx workflow; and it is then used to determine the presence of the target biological molecule at or with the region of interest. And the evidence showed (as NanoString witnesses seemingly confirmed) that GeoMx-NGS uses the determined target sequence together with the i5/i7 indices to determine the presence of the target at the region of interest. Further, 10x presented evidence that GeoMx-nCounter's target sequence is the oligonucleotide sequence, and "the sequence is read out in the nCounter instrument, and then that sequence is used to determine the presence or abundance of the target protein" and "maps back to this region of interest." Tr. 333:22-334:1. Contrary to NanoString's assertions, the targeted sequence is not related to the HYB code sequence mentioned in nCounter's workflow. Instead, Dr. Quackenbush explained that

the n-Counter uses eight HYB packs and twelve columns of microtiter plates in a unique sequence, collects the data and creates an RCC file, which can be decoded the GeoMx software to map back to the region of interest. *See* Tr. 334:2-336:19.

Second, NanoString argues that 10x failed to prove that GeoMx products meet the limitations set forth in claim 5 of the '917 patent. Specifically, NanoString argues that 10x failed to show that (1) GeoMx products remove a portion of the tissue sample from the region of interest, (2) GeoMx products deliver the removed portion of the tissue sample through the at least one reagent channel, and (3) GeoMx products deliver an elution composition to remove portions of the tissue sample. NanoString further argues that 10x failed to prove these limitations through the doctrine of equivalents.

The Court disagrees. First, Dr. Quackenbush testified that oligonucleotides are part of a tissue sample and that oligonucleotides are removed with GeoMx DPS. Second, the jury heard from Dr. Quackenbush that liquid is transferred through a reagent channel, a microcapillary. Third, Dr. Quackenbush explained that as part of the removal step, a liquid (eluent) is delivered to the region of interest on the tissue sample so that the oligonucleotides can be eluted in the liquid. Fourth, Dr. Quackenbush described the function, way, and result of removing through a reagent channel in the patent claim to the function, way, and result of removing through GeoMx's microcapillary, thereby providing a sufficient evidentiary basis to find infringement based on the doctrine of equivalents. *NexStep, Inc. v. Comcast Cable Commc'ns, LLC*, 119 F.4th 1355, 1370 (Fed. Cir. 2024) (noting the function-way-result test asks "whether the accused product performs substantially the same function in substantially the same way to obtain the same result") (internal quotation marks omitted). This is evidence

supporting the jury's finding that the GeoMx products meet the limitations of the asserted patents.

3. Expert witness Dr. Gabriel

NanoString argues that it is entitled to a new trial on invalidity because the Court improperly excluded proposed claim construction witness Dr. Stacey Gabriel. NanoString contends that Dr. Gabriel's testimony was not cumulative and was properly disclosed. NanoString asserts that Dr. Gabriel would have testified that the specification does not teach targeted removal by segmentation or applying tags off tissue to encode location information.

The Court disagrees that it improperly excluded Dr. Gabriel as an expert witness. As an initial matter, Dr. Gabriel's opinions did not speak directly to NanoString's written description defense but rather only to the question of claim construction, which was not separately before the jury. Moreover, the Court reasonably determined that Dr. Gabriel's testimony was cumulative of that of NanoString expert Dr. Edwards: Dr. Edwards testified that he did not believe that the specification's language about segmentation spoke to targeted removal and that the specification did not teach that spatial tagging can be done off tissue. Finally, the Court previously determined that NanoString failed to properly disclose Dr. Gabriel under Federal Rule of Evidence 26(a)(2)(B). D.I. 279 at 5. NanoString's supporting memorandum does not explain how the Court's ruling was erroneous, and thus NanoString has forfeited the point. That aside, the Court reaffirms that its exclusion ruling was correct based on the record presented.

4. Claim construction

NanoString argues that the Court should revisit its claim construction ruling because, it contends, the patent states that the delivery of probes in a spatial pattern is integral to the invention. The Court has considered NanoString's position throughout this litigation and has explained numerous times that the patents do not limit the invention to delivery of probes in a spatial matter on a tissue. The Court adopts its earlier orders on this point; no further reconsideration is called for.

NanoString inappropriately relies on *X2Y Attenuators, LLC v. international Trade Commission*, 757 F.3d 1358 (Fed. Cir. 2014), for support. There the court found the specification's language that a feature was "universal to all the embodiments" and "an essential element among all embodiments or connotations of the invention" constituted a "clear and unmistakable disavowal" of the claim's scope. *Id.* at 1362. No such language or disavowal can be found in the specifications in the present case. And the jury was permitted to credit Dr. Satija's testimony on what a POSITA would understand the patent to describe over the testimony of Dr. Edwards's.

5. Jury instructions

NanoString takes issue with the Court's jury instructions on written description. Specifically, NanoString contends that the instruction improperly failed to tell the jury that "possession" of the full scope of the invention was required. This entirety of this argument is in a single sentence that essentially says the instruction is wrong without attempting to explain *how* it was wrong or how it misled the jury. *See* Def.'s Brief in Support of J. as a Matter of Law at 11. NanoString has thus forfeited the point.

Forfeiture aside, a new trial is not warranted on this basis. A court "only orders a

new trial when errors in the instructions as a whole clearly misled the jury." *Chiron Corp. v. Genentech, Inc.*, 363 F.3d 1247, 1258 (Fed. Cir. 2004) (internal quotation marks omitted). NanoString is referring to part of the invalidity/written description instruction that states:

> To succeed on this contention as to the particular patent claim you are considering, NanoString must prove that a person having ordinary skill in the field who read the patent specification as of the effective filing date would not have recognized that the inventor invented the full scope of the invention as defined by the patent claim.

D.I. 300 at 28. The Court finds the jury instruction was legally accurate, straightforward, and did not mislead the jury. The inclusion of the term "possession" of the invention would have require an additional definition, as the term is vague on its own. There was nothing erroneous about omitting the vague term and instead supplying its definition. Inclusion of the term "possess" or "possession" would not change the meaning of jury instruction or NanoString's burden of persuasion. In sum, the Court does not find any error in the jury instruction that would warrant a new trial.

6. Induced, contributory, or willful infringement

NanoString argues there was insufficient evidence of induced, contributory, or willful infringement. The Court addresses each issue in turn.

First, NanoString argues that 10x failed to present evidence that NanoString knew its induced acts constituted patent infringement or that NanoString engaged in culpable conduct. "A defendant is liable for induced infringement under § 271(b) if the defendant took certain affirmative acts to bring about the commission by others of acts of infringement and had knowledge that the induced acts constitute patent infringement." *Roche Diagnostics Corp. v. Meso Scale Diagnostics, LLC*, 30 F.4th 1109, 1117–18 (Fed. Cir. 2022) (internal quotation marks omitted). "The intent element

requires knowledge that the induced acts constitute patent infringement, which can be established by a proper finding of willful blindness." *Id.* at 1118 (internal quotation marks omitted). Evidence at trial supported that NanoString knew of 10x's patents by the time 10x filed its complaint, and NanoString does not dispute that it instructed its customers to use the GeoMx products as intended. Indeed, among other evidence, the jury saw that a NanoString employee circulated a document about Dr. Chee's technology in an email thread designed to share information on competing technologies. PTX787. The jury also saw evidence of NanoString's repeated failures to investigate Dr. Chee's technology. *See* PTX1103-2, PTX1104, PTX1105-29. Intent may be inferred from circumstantial evidence. The Court concludes that sufficient evidence supported the jury's determination that NanoString knew or was willfully blind to the fact that its acts would cause its customers to infringe upon 10x's patents.

Second, NanoString argues that the evidence did not support the jury's finding of contributory infringement. Specifically, NanoString argues that 10x failed to establish that the GeoMx products are not a staple article or a commodity of commerce suitable for substantial non-infringing use. Under 35 U.S.C. § 271(c), "there is no liability for contributory infringement for selling an article that is suitable for substantial noninfringing use." *H. Lundbeck A/S v. Lupin Ltd.*, 87 F.4th 1361, 1372 (Fed. Cir. 2023) (internal quotation marks omitted). The evidence 10x presented at trial sufficiently showed the absence of non-infringing uses, and NanoString did not contend or present any evidence to suggest that there were non-infringing uses. Accordingly, the Court denies entry of JMOL or a new trial on this ground.

Third, NanoString makes a separate argument about the jury's finding of willful

infringement, arguing that the evidence was deficient because none of its witnesses admitted to knowing of the patent infringement. "Willful infringement is a question of fact reviewed for substantial evidence following a jury trial." *Provisur Techs., Inc. v. Weber, Inc.*, 119 F.4th 948, 955 (Fed. Cir. 2024). "To establish willfulness, a patentee must show that the accused infringer had a specific intent to infringe at the time of the challenged conduct." *Id.* (internal quotation marks omitted). Willfulness may be established by showing willful blindness, which "requires that (1) the defendant must subjectively believe that there is a high probability that a fact exists and (2) the defendant must take deliberate actions to avoid learning of that fact." *Suprema, Inc. v. Int'l Trade Comm'n*, 626 F. App'x 273, 280 (Fed. Cir. 2015) (internal quotation marks omitted). As previously explained, 10x presented witness testimony and exhibits that showed by a preponderance of the evidence that NanoString knew of or was willfully blind to its infringement and nonetheless continued to infringe.

7. Damages

NanoString argues that there was insufficient evidence to support the jury's award of lost profits and a reasonable royalty. "A jury's damages award must be upheld unless the amount is grossly excessive or monstrous, clearly not supported by evidence, or based only on speculation or guesswork." *Bayer Healthcare LLC v. Baxalta Inc.*, 989 F.3d 964, 984 (Fed. Cir. 2021) (internal quotation marks omitted).

a. Lost profits

NanoString argues that the jury's lost profits award was not supported by substantial evidence. First, NanoString argues that a jury could not have reasonably concluded that 10x would have captured each and every consumable infringing sale by

NanoString. NanoString argues that the evidence showed that customers were unwilling or unable to purchase Visium products (i.e. 10x's products). NanoString faults 10x for not conducting consumer surveys, taking depositions, or performing a product-by-product analysis. Second, NanoString argues that no reasonable jury could have found that 10x had the manufacturing and marketing capability to exploit the additional demand or that 10x reasonably quantified the amount of lost profits, particularly in finding that 10x would not have incurred additional costs on those sales.

"To recover lost profits, a patent owner must prove a causal relation between the infringement and its loss of profits." *Georgetown Rail Equip. Co. v. Holland L.P.*, 867 F.3d 1229, 1240 (Fed. Cir. 2017) (internal quotation marks omitted). Although there is no universal method of proving lost profits, the "*Panduit* and two-supplier market tests are recognized methods of showing 'but for' causation." *Micro Chem., Inc. v. Lextron, Inc.*, 318 F.3d 1119, 1122 (Fed. Cir. 2003). The *Panduit* test "requires the patentee to show: (1) demand for the patented product; (2) absence of acceptable noninfringing substitutes; (3) manufacturing and marketing capability to exploit the demand; and (4) the amount of profit that . . . would have been made." *Georgetown Rail Equip. Co.*, 867 F.3d at 1241 (internal quotation marks omitted). And "under the two-supplier test, a patentee must show: 1) the relevant market contains only two suppliers, 2) its own manufacturing and marketing capability to make the sales that were diverted to the infringer, and 3) the amount of profit it would have made from these diverted sales." *Micro Chem., Inc.*, 318 F.3d at 1124.

Substantial evidence supports the jury's award of lost profits. First, 10x presented evidence that researchers would have used Visium products if GeoMx

products had not been on the market. The evidence further showed that Visium products were competing with GeoMx products head-to-head for sales. The jury heard that other products on the market were fundamentally different or protein-only platforms, which were excluded from Davis's lost profits calculation. NanoString conceded in an exhibit presented to the jury that GeoMx, Visium, and Cartana (now part of 10x) were the "only commercialized high plex spatial gene expression solution." PTX 722-18. Second, expert testimony confirmed the absence of acceptable non-infringing alternatives to Visium products. *See* Tr. 419:16-421:1. And NanoString did not meaningfully contest this fact at trial. "Acceptable substitutes that the infringer proves were available during the accounting period can preclude or limit lost profits; substitutes only theoretically possible will not." *Grain Processing Corp. v. Am. Maize-Prods. Co.*, 185 F.3d 1341, 1353 (Fed. Cir. 1999). Third, the jury heard testimony and other evidence that support 10x had the manufacturing marketing capacity to exploit the demand. Tr. 421:2-422:12. Finally, the jury heard from 10x's expert witness—whose testimony was sufficiently founded in the evidence—that 10x would have made $34.15 million in lost profits.

NanoString's arguments for overturning the jury's lost profits award are not persuasive. 10x was not required to conduct consumer surveys or take depositions to prove that it would have captured NanoString's sales under the *Panduit* and two-supplier market tests. "In the two-supplier market, it is reasonable to assume, provided the patent owner has the manufacturing and marketing capabilities, that it would have made the infringer's sales." *Micro Chem., Inc.*, 318 F.3d at 1124 (internal quotation marks omitted). 10x presented evidence that NanoString and 10x were in head-to-head

competition and that 10x had the marketing capacity to meet market demands. The jury was permitted to credit 10x's evidence over any arguments NanoString presented regarding customers being unable or unwilling to purchase Visium products. As to the testimony by 10x's expert Davis that 10x had the capability to capture the market without additional costs, Davis explained that 10x had already incurred those expenses because it had been trying to sell to NanoString's customers. Tr. 487:12-490:1. NanoString presented no evidence that rebutted Davis's testimony, and the jury was entitled to accept it. Additionally, the jury only awarded 75 percent of the amount Davis proposed at trial, which suggests that it reduced the award to account for potential sales and/or marketing costs.

b. Reasonable royalties

NanoString argues there was insufficient evidence supporting the jury's reasonable royalty award. NanoString makes the same arguments it made in its *Daubert* motion to exclude Davis's opinions on reasonable royalties. First, NanoString argues that Davis's calculations were based on the unsupported premise that NanoString's margins on GeoMx products were nearly 80 percent and its margins on services were 100 percent when, in fact, its gross margins were 50 percent. Second, NanoString argues that Davis inappropriately relied on 10x's acquisition of ReadCoor when the acquisition was for the entire company and not just its patents. Third, NanoString argues that that Davis should have considered 10x's patent license with Prognosys at a 0.25 percent royalty rate or ReadCoor's license with Harvard at a 2 to 4 percent royalty rate.

"The reasonable royalty theory of damages . . . seeks to compensate the

patentee not for lost sales caused by the infringement, but for its lost opportunity to obtain a reasonable royalty that the infringer would have been willing to pay if it had been barred from infringing." *AstraZeneca AB v. Apotex Corp.*, 782 F.3d 1324, 1334 (Fed. Cir. 2015). Litigants commonly take two approaches to calculate a reasonable royalty: the hypothetical negotiation approach, which "attempts to ascertain the royalty upon which the parties would have agreed had they successfully negotiated an agreement just before infringement began," or the analytical method, which "focuses on the infringer's projections of profit for the infringing product." *Lucent Techs., Inc. v. Gateway, Inc.*, 580 F.3d 1301, 1324 (Fed. Cir. 2009).

Davis's analytical approach compared the profitability of GeoMx (78.9 percent) with that of nCounter (60.5 percent) and considered what NanoString would have been willing to pay for the right to sell the more profitable GeoMx product. Tr. 438:11-439:24. Davis concluded that NanoString's ability to gain more than a 15 percent margin through infringement supported its willingness to pay at least a 15 percent royalty for the right to sell the infringing GeoMx product. NanoString complains about Davis's calculations of its margins, but the figures Davis used in her calculations were derived from NanoString's production of records. Tr. 482:16-19. NanoString does not explain how it came to its gross margins of 50 percent or how it contends Davis improperly calculated its margins.

As for NanoString's arguments about the ReadCoor acquisition and other patent licenses, the Court adopts the discussion its earlier order regarding the *Daubert* motion. Briefly, "[t]he amount paid to acquire a company with desired patents, and the amount of the acquisition amount allotted to a particular patent is relevant to the establishment

of a reasonable royalty." *Fresenius Med. Care Holding Inc. v. Baxter Int'l, Inc.*, 224 F.R.D. 644, 653 (N.D. Cal. 2004). Additionally, Davis did consider the licenses NanoString references, but she concluded they were not as relevant as the ReadCoor acquisition. NanoString had the opportunity to cross-examine Davis, and the jury was entitled to credit Davis's opinion on the ReadCoor acquisition and other aspects of her opinion. NanoString's arguments go to the weight properly given to Davis's testimony, which is a determination within the province of the jury, not the Court. The Court concludes that the jury's award of a 12.5 percent royalty rate was supported by substantial evidence.

B. 10x's post-trial motion

In its post-trial motion, 10x seeks a permanent injunction against NanoString's infringement and supplemental damages for NanoString's infringing sales up to the date of entry of a permanent injunction. In the alternative, 10x seeks award of a royalty on any sales of GeoMx products. 10x also seeks an award of enhanced damages and attorneys' fees for NanoString's willful infringement. Finally, 10x seeks pre-judgment interest. The Court addresses each of these points in turn.[3]

[3] NanoString asks the Court to postpone resolution of 10x's post-trial motion until the case is heard by the Federal Circuit. NanoString reasons that any type of injunction will exacerbate its already dire financial situation. The Court overrules this request, finding no good reason to deviate from the normal way post-trial motions are decided. NanoString alternatively argues that if it does resolve 10x's motion, the Court should exercise its discretion and waive any requirement for NanoString to post a bond to obtain a stay of the judgment pending appeal. That request is appropriately dealt with by way of a separate motion if and when NanoString appeals and can show its then-current circumstances and address the factors appropriately considered in deciding whether to forego posting of a bond.

1. Permanent injunction

A plaintiff seeking a permanent injunction must establish "(1) that it has suffered an irreparable injury; (2) that remedies available at law, such as monetary damages, are inadequate to compensate for that injury; (3) that, considering the balance of hardships between the plaintiff and defendant, a remedy in equity is warranted; and (4) that the public interest would not be disserved by a permanent injunction." *eBay Inc. v. MercExchange, LLC*, 547 U.S. 388, 391 (2006).

a. Irreparable injury

To show irreparable harm, a patentee must establish "1) that absent an injunction, it will suffer irreparable harm, and 2) that a sufficiently strong causal nexus relates the alleged harm to the alleged infringement." *Apple Inc. v. Samsung Elecs. Co.*, 695 F.3d 1370, 1374 (Fed. Cir. 2012). A causal nexus "just means that there must be proof that the infringement causes the harm." *Apple Inc. v. Samsung Elecs. Co.*, 809 F.3d 633, 639 (Fed. Cir. 2015).

"Although injunctions are tools for prospective relief designed to alleviate future harm, by its terms the first *eBay* factor looks, in part, at what has already occurred." *i4i Ltd. P'ship v. Microsoft Corp.*, 598 F.3d 831, 862 (Fed. Cir. 2010) (internal quotation marks omitted). Accordingly, "[p]ast harm to a patentee's market share, revenues, and brand recognition is relevant for determining whether the patentee *has suffered* an irreparable injury." *Id.* at 861 (internal quotation marks omitted). Further, "[w]here two companies are in competition against one another, the patentee suffers the harm—often irreparable—of being forced to compete against products that incorporate and infringe its own patented inventions." *Douglas Dynamics, LLC v. Buyers Prods. Co.*, 717 F.3d

1336, 1345 (Fed. Cir. 2013).

The Court finds that 10x has shown irreparable injury. The record reflects that NanoString's infringement has caused 10x past harm. Experts on both sides agree that NanoString and 10x are competitors and that 10x's Visium products compete with GeoMx products. NanoString's GeoMx products infringe upon 10x's patents, as shown by the jury's finding of infringement and its award of a reasonable royalty on GeoMx sales. And the evidence shows that 10x lost sales and profits due to NanoString's sales of infringing products. Indeed, the jury was instructed to award lost profits only if, "but for NanoString's infringement, []10x would have made additional profits through the sales of all or some of the patented product or process that NanoString made." D.I. 300 at 32. The jury awarded 10x over $25 million in lost profits, or seventy-five percent of the amount 10x's expert testified 10x was entitled to based on lost sales. In sum, 10x has showed a casual nexus between NanoString's infringing conduct, the sale of GeoMx products incorporating 10x's patents, and harm to 10x, specifically, lost profits based on lost sales and market share. Accordingly, allowing NanoString to proceed with selling any GeoMx products would force 10x to "compete against products that incorporate and infringe its own patented inventions." *Douglas Dynamics, LLC*, 717 F.3d at 1345 (internal quotation marks omitted). In short, 10x has shown irreparable injury.

In addition, 10x was harmed by NanoString taking advantage of being a first mover. NanoString announced the commercial launch of GeoMx on March 27, 2019, weeks after 10x's announcement that Visium would launch later in the year. Not only did NanoString benefit from being a first mover in the market, but it also eroded

whatever first mover advantage 10x otherwise would have expected to gain from the launch of its Visium products. This harm is compounded by the fact that 10x is competing in a nascent market. The benefit of being a first mover is a nascent space is the ability to capture and grow the market. Currently the combined annual revenue of the parties is $77 million, showing that only 2.5 percent of the projected $3 billion market has been captured. 10x is impeded in its efforts due to NanoString's infringement and the need to compete rather than expand.

10x has also shown that it has experienced harm to its reputation. A company's reputation can suffer harm "particularly its perception in the marketplace by customers, dealers, and distributors." *Douglas Dynamics, LLC*, 717 F.3d at 1344. Having been careful not to license its technology, 10x suffers when it proclaims itself as an innovator in spatial genomics but a competitor is using the same innovative, patented technology. *See id.* (stating that a company's "reputation as an innovator will certainly be damaged if customers found the same innovations appearing in competitors' products") (internal quotation marks omitted). NanoString disputes 10x's contentions of harm to its reputation, arguing that 10x has harmed its own reputation by interfering with NanoString's relationships with its customers and threatening NanoString's customers with litigation for patent infringement. But this amounts to a backhanded concession of 10x's argument about harm to its reputation. 10x would have no reason to threaten litigation against potential customers if NanoString had not sold those entities GeoMx products that infringed upon 10x's patents.

b. Remedies available at law

Next the Court assesses whether remedies available at law are inadequate.

"This factor requires a patentee to demonstrate that remedies available at law, such as monetary damages, are inadequate to compensate the patentee for the irreparable harm it has suffered." *Apple Inc. v. Samsung Elecs. Co.*, 735 F.3d 1352, 1368 (Fed. Cir. 2013) (internal quotation marks omitted).

As explained, NanoString captured part of the market that 10x created with its patented technology. An increase in the infringer's market share while infringing on the patentee's products "underscores the profitability of infringement and suggests that mere damages will not compensate for a competitor's increasing share of the market." *Douglas Dynamics*, 717 F.3d at 1345 (internal quotation marks omitted). Thus, the evidence presented strongly indicates that remedies at law are insufficient.

Moreover, NanoString's allegedly precarious financial situation favors entry of a permanent injunction. "A district court should assess whether a damage remedy is a meaningful one in light of the financial condition of the infringer before the alternative of money damages can be deemed adequate." *Robert Bosch LLC v. Pylon Mfg. Corp.*, 659 F.3d 1142, 1155 (Fed. Cir. 2011). In this instance, "the questionable financial condition of [NanoString] reinforces the inadequacy of a remedy at law," specifically an ongoing royalty on the infringing products. *Id.* NanoString has filed for bankruptcy protection, indicating that the company is under financial stress. NanoString itself says that requiring it to pay an ongoing royalty "will exacerbate NanoString's severe financial distress." Def.'s Resp. at 17. And NanoString argues against a permanent injunction on the basis that GeoMx makes up a large portion of the company's revenues and that an injunction will cause its supposedly dire financial condition to worsen. "While competitive harms theoretically can be offset by monetary payments in certain

circumstances, the likely availability of those monetary payments helps define the circumstances in which this is so." *Robert Bosch LLC*, 659 F.3d at 1155–56.

c. Balance of hardships

"The balance of hardships factor assesses the relative effect of granting or denying an injunction on the parties." *Apple*, 735 F.3d at 1371 (internal quotation marks omitted). The jury found that NanoString willfully infringed all of 10x's asserted patents. "One who elects to build a business on a product found to infringe cannot be heard to complain if an injunction against continuing infringement destroys the business so elected." *Windsurfing Int'l, Inc. v. AMF, Inc.*, 782 F.2d 995, 1003 n.12 (Fed. Cir. 1986). Again, NanoString argues that it will suffer a hardship because much of its revenue comes from GeoMx products. Yet an infringer cannot escape liability "because its primary product is an infringing one." *Robert Bosch LLC*, 659 F.3d at 1156.

d. The public interest

"This factor requires a plaintiff to demonstrate that the public interest would not be disserved by a permanent injunction." *Apple Inc.*, 735 F.3d at 1371 (internal quotation marks omitted). Generally, the "public interest does favor the enforcement of patent rights to promote the encouragement of investment-based risk." *Id.*

NanoString argues that public health and safety will suffer because researchers in the field of oncology and other health specialties rely on GeoMx products in live-saving research. But it appears that GeoMx is only used in research, and as far as the Court can determine, this research does not immediately impact current medical treatment of patients. Moreover, the proposed injunction includes a carve out for the "sale of existing consumables to historical installed bases to complete ongoing

research." Pl.'s Post-Trial Motion, Ex. 1. Put simply, the proposed injunction permits customers who have installed GeoMx DSP Analysis Instrument before November 18, 2023 to finish their research and continue to purchase consumables from NanoString subject to a royalty rate. Courts have found such exceptions strike a "workable balance between protecting the patentee's rights and protecting the public from the injunction's adverse effects." *Bio-Rad Lab'ys, Inc. v. 10X Genomics Inc.*, 967 F.3d 1353, 1379 (Fed. Cir. 2020) (internal quotation marks omitted).

NanoString also argues, and some customer declarations support, that NanoString's customers do not find 10x's Visium products to be a viable substitute to GeoMx products. Though disruption to consumers is not ideal, this is not a sufficient basis to permit continued infringement. *See St. Jude Med., Inc. v. Access Closure, Inc.*, No. 08-CV-4101, 2012 WL 12919408, at *4 (W.D. Ark. June 4, 2012) ("Recognizing that an injunction would deprive some doctors of a device that they prefer, the Court finds that the public interest in maintaining the integrity of the patent system outweighs any disservice to the general public that this deprivation might cause."). 10x has presented evidence that Visium products are suitable alternatives. This is supported by the fact 10x suffered lost profits on its Visium products due to NanoString's sale of GeoMx products, meaning that customers are using the two in a similar fashion. In terms of customers' costs for switching products, 10x notes that Visium products do not require the purchase of an instrument to run the assays, meaning that researchers who purchased a GeoMx instrument would not then need to purchase a Visium instrument.

Because the four *eBay* factors favor enjoining NanoString's infringing conduct, the Court grants 10x's motion for a permanent injunction. Accordingly, the Court does

not address the parties' arguments on 10x's alternative request for reasonable royalties. 10x is directed to provide a Word version of its proposed injunction to the undersigned judge's proposed order email address.

2. Damages

10x asks the Court to award enhanced damages, attorneys' fees, supplemental damages, pre-judgment interest, and statutory post-judgment interest.

a. Enhanced damages

Under the Patent Act, a "court may increase the damages up to three times the amount found or assessed." 35 U.S.C. § 284. Enhanced damages are "designed as a punitive or vindictive sanction for egregious infringement behavior." *Halo Elecs., Inc. v. Pulse Elecs., Inc.*, 579 U.S. 93, 103–04 (2016) (internal quotation marks omitted). In other words, conduct described as "willful, wanton, malicious, bad-faith, deliberate, consciously wrongful, flagrant, or—indeed—characteristic of a pirate." *Id.* As such, a "jury's finding of willful infringement is a prerequisite to the enhancement of damages but is not by itself sufficient." *Sunoco Partners Mktg. & Terminals L.P. v. Powder Springs Logistics, LLC*, No. CV 17-1390-RGA, 2022 WL 3973499, at *1 (D. Del. Aug. 31, 2022).

In deciding whether to award enhanced damages, a court considers the following non-exhaustive factors articulated in *Read Corp. v. Portec, Inc.*, 970 F.2d 816 (Fed. Cir. 1992): "(1) whether the infringer deliberately copied the ideas of another; (2) whether the infringer, when he knew of the other's patent protection, investigated the scope of the patent and formed a good-faith belief that it was invalid or that it was not infringed; (3) the infringer's behavior as a party to the litigation; (4) the defendant's size and

financial condition; (5) the closeness of the case; (6) the duration of the defendant's misconduct; (7) remedial action by the defendant; (8) the defendant's motivation for harm; and (9) whether the defendant attempted to conceal its misconduct." *Georgetown Rail Equip. Co.*, 867 F.3d at 1245 n.6 (internal quotation marks and alterations omitted).

10x argues that it is entitled to enhanced damages because NanoString willfully did not investigate Dr. Chee's patents. For example, in 2014, NanoString's Chief Scientific Officer was aware of Dr. Chee's spatial work but did not search or instruct anyone to search for Dr. Chee's patents despite conceding that a patent search is routine practice. In 2019, NanoString's Chief Executive Officer instructed his team to mine 10x's S-1 securities filings for competitive intelligence but did not instruct them to investigate Dr. Chee's patents, notwithstanding acknowledging that Visium was a competing product.

10x also takes issue with NanoString's litigation conduct, but the Court does not find NanoString's conduct to be egregious in the manner 10x suggests. True, NanoString sought to exclude evidence from trial concerning its pre-suit knowledge of 10x's spatial technology, but filing a motion in limine is a routine litigation tactic, and that was the case here. There is no basis for the Court to impute ill will with respect to this filing. And though NanoString's CSO and CEO initially denied knowledge of Prognosys and its spatial technology, they readily acknowledged their errors when shown to internal documents that said otherwise.

10x also cites NanoString's allegedly inappropriate conduct in litigation before the Unified Patent Court in Europe, including violating injunctions. Certainty continued

disregard of a court injunction would qualify as egregious conduct. But enhanced damages are concerned with the conduct associated with the case at hand, not the rest of a party's litigation portfolio. And that aside, 10x has not shown that NanoString's conduct has been egregious in this instance.

Finally, 10x asserts that every *Read* factor favors an award of enhanced damages. But 10x has not shown that NanoString's lack of investigation into Dr. Chee's patents was done in bad faith. Nor has 10x shown that any of NanoString's litigation strategies, including rehashing losing positions, were undertaken for any purpose other than as routine litigation tactics. Indeed, the Court permitted NanoString to proceed with its written description defense at trial. And the Court is not convinced by 10x's evidence that NanoString was motivated to harm 10x, as opposed to its behavior being consistent with that of a rival in a nascent market.

Accordingly, the Court does not find that enhanced damages are appropriate and denies 10x's request.

b. Exceptional case

Section 285 of the Patent Act provides that "[t]he court in exceptional cases may award reasonable attorney fees to the prevailing party." 35 U.S.C. § 285. An exceptional case "stands out from others with respect to the substantive strength of a party's litigating position [] or the unreasonable manner in which the case was litigated." *Octane Fitness, LLC v. ICON Health & Fitness, Inc.*, 572 U.S. 545, 554 (2014). "The party seeking fees must prove that the case is exceptional by a preponderance of the evidence, and the district court makes the exceptional case determination on a case-by-case basis considering the totality of the circumstances." *Honeywell Int'l Inc. v. Fujifilm*

Corp., 708 F. App'x 682, 683 (Fed. Cir. 2018).

The Court does not find that this is an exceptional case warranting the award of attorneys' fees for the reasons stated in the previous section of this order.

c. Supplemental damages

10x seeks an award of supplemental damages for NanoString's infringing sales from the date of the jury's verdict through the date of entry of the Court's permanent injunction. The "amount of supplemental damages following a jury verdict is a matter committed to the sound discretion of the district court." *SynQor, Inc. v. Artesyn Techs., Inc.*, 709 F.3d 1365, 1384 (Fed. Cir. 2013) (internal quotation marks omitted). 10x asserts that it is entitled to lost profits at an effective rate of 61.2 percent and a reasonable royalty rate of 12.5 percent, mirroring the jury's award. 10x asks the Court to order NanoString to provide an accounting of its additional infringing sales from October 14, 2023 to the entry of the permanent injunction. The Court agrees. The parties should assume that a permanent injunction will be issued on January 10, 2025. NanoString is instructed to provide 10x the necessary accounting by December 30, 2024, and the parties are to promptly confer after that to arrive at the appropriate amount. A joint status report in this regard is to be filed on January 6, 2025.

d. Prejudgment interest

10x seeks an award of prejudgment interest pursuant to 35 U.S.C. § 284. Specifically, 10x requests prejudgment interest from the date of infringement to the date of final judgment at the prime rate, compounded quarterly.

"Prejudgment interest is awarded to restore a plaintiff to the position it would have been in had there been no wrongdoing." *Purewick Corp. v. Sage Prods., LLC*, 666

F. Supp. 3d 419, 450 (D. Del. 2023). "[P]rejudgment interest should ordinarily be awarded absent some justification for withholding such an award." *Gen. Motors Corp. v. Devex Corp.*, 461 U.S. 648, 657 (1983). District courts generally have "wide latitude in the selection of interest rates." *Uniroyal, Inc. v. Rudkin-Wiley Corp.*, 939 F.2d 1540, 1545 (Fed. Cir. 1991). In the District of Delaware, calculating prejudgment interest at a "prime rate is by far the most common practice." *ArcherDX, LLC v. Qiagen Scis., LLC*, No. CV 18-1019 (MN), 2022 WL 4597877, at *18 (D. Del. Sept. 30, 2022) (collecting cases). Likewise, calculating interest on a quarterly basis is standard, particularly here where (as here) the patentee has shown it requires royalty payments on a quarterly basis in its patent licenses. JTX-25 at 2; *see Amgen Inc. v. Hospira, Inc.*, 336 F. Supp. 3d 333, 364 (D. Del. 2018); *Bayer Healthcare LLC v. Baxalta Inc.*, No. 16-CV-1122-RGA, 2019 WL 4016235, at *7 (D. Del. Aug. 26, 2019).

Accordingly, the Court will enter a final judgment that includes prejudgment interest compounded quarterly at the prime rate on the lost profits and royalties. This amounted to $2,942,549 through November 22, 2023. Davis Decl. ¶ 11. The parties are directed to carry this forward to January 10, 2025, the date on which the Court anticipates entering final judgment, and are to include this in the aforementioned January 6 status report. The parties are also directed to provide by January 6 a proposed form of judgment for entry by the Court (in Word format to the proposed order email address).

e. Statutory post-judgment interest

Post-judgment interest applies by operation of law on "any money judgment in a civil case recovered in a district court." 28 U.S.C. § 1961(a). The "[i]nterest shall be

calculated from the date of the entry of the judgment, at a rate equal to the weekly average 1-year constant maturity Treasury yield, as published by the Board of Governors of the Federal Reserve System, for the calendar week preceding[] the date of the judgment." *Id.* Because a statute requires interest at an established rate from the date of final judgment forward, the Court need not make a separate determination regarding the applicability or rate of interest.

Conclusion

For the foregoing reasons, the Court denies defendants' motion for judgment as a matter of law [dkt. no. 317] and grants in part plaintiff's post-trial motion [dkt. no. 319] to the extent stated in this decision. Defendants' previously filed Rule 50(a) motions are denied as moot [dkt. nos. 301, 303, 305]. A joint status report as directed in the body of this decision is to be filed on January 6, 2025, and a draft injunction order and form of judgment are to be provided to the undersigned judge's proposed order email address. The Court anticipates entering final judgment on January 10, 2025.

MATTHEW F. KENNELLY
United States District Judge

Date: December 23, 2024