UNITED STATES DISTRICT COURT

NORTHERN DISTRICT OF CALIFORNIA

San Francisco Division

TRIREME MEDICAL, LLC,

Plaintiff,

v.

ANGIOSCORE, INC.,

Defendant.

Case No. 14-cv-02946-LB

SUMMARY-JUDGMENT ORDER

Re: ECF No. 117

INTRODUCTION

This is a suit under 35 U.S.C. § 256 to correct the named inventors on three patents.[1] Plaintiff TriReme seeks to add a non-party, Dr. Chaim Lotan, as an inventor to those patents. The patents all relate to an angioplasty balloon catheter, called the AngioSculpt, that is manufactured by defendant AngioScore, Inc.

Before the court is AngioScore's motion for summary judgment. Broadly speaking, AngioScore raises two issues. First, AngioScore argues that TriReme has no rights in the patents in suit; it contends that, under a 2003 consulting agreement, Dr. Lotan assigned his rights in the patents to AngioScore. When Dr. Lotan licensed his rights to TriReme in 2014, he thus had

[1] Compl. – ECF No. 1 at 5–6 (¶¶ 23–31). Record citations refer to material in the Electronic Case File ("ECF"); pinpoint citations are to the ECF-generated page numbers at the tops of documents.

nothing to license. On AngioScore's view, TriReme thus lacks standing to bring this § 256 suit. Second, AngioScore argues that the correction claims fail as a matter of law. It argues that TriReme has not raised a genuine issue that Dr. Lotan was an inventor of the AngioSculpt, and so was not wrongly omitted from the patents in suit.

The court held a hearing on AngioScore's motion on February 9, 2017.[2] For the reasons given below, the court partly grants AngioScore's motion. The court denies AngioScore's argument concerning an assignment under the consulting agreement. AngioScore has not shown that TriReme lacks standing to bring this suit. On the question of inventorship, the court grants AngioScore's summary-judgment motion. The patents are correct as they stand. TriReme has not raised a genuine case for trial that Dr. Lotan made an inventive contribution to the relevant element of the AngioSculpt.

STATEMENT

1. Overview — The AngioSculpt Scoring Catheter and the Compliant-Tube Attachment Structure

This case involves three U.S. patents — Nos. 8,080,026, 8,454,636, and 8,721,667 — issued on an angioplasty balloon catheter used to open blockages in the peripheral vascular system.[3] The catheter in question is called the AngioSculpt and is sold by defendant AngioScore. As the Federal Circuit explained in an earlier appeal of this case:

> To accomplish this [opening of arterial blockages], an AngioSculpt device is inserted into a blood vessel and inflated when it reaches the targeted occlusion area. The balloon contains a metal spiral on its surface, which expands as the balloon inflates and scores the plaque lining the occluded blood vessel. The balloon is then deflated and the device removed from the vessel. All three AngioScore patents relate to this concept. Each lists three inventors: Dr. Eitan Konstantino, Tanhum Feld, and Nimrod Tzori. None lists Dr. Chaim Lotan as an inventor.[4]

[2] ECF No. 131.

[3] *See* Compl. – ECF No. 1 at 2 (¶ 7)

[4] *TriReme Med. LLC v. AngioScore, Inc.*, 812 F.3d 1050, 1052 (Fed. Cir. 2016).

The AngioSculpt's signature feature is its metal scoring spiral. The element that is most salient for this inquiry, however, is the "compliant-tube attachment structure" (CTAS) that binds the proximal end of the scoring spiral to the body of the catheter.[5] The CTAS was developed in early design work on the AngioSculpt to compensate for the movement of the metal spiral as the catheter's balloon inflated and deflated. Early prototypes revealed at least two problems with the balloon and its attached scoring element. When the scoring spiral was fixed rigidly to both ends of the catheter, the balloon would become distorted.[6] When the proximal end of the spiral was left unattached to the catheter body, which is to say, when the proximal end of the spiral was "free-floating," the spiral often snagged on other structures or dislodged from the balloon — a situation that could leave the metal element inside patients' bodies and so was unacceptable.[7] In early design work, occurring mainly in the first half of 2003, AngioScore settled on using a semi-compliant polymer tube (the CTAS) to bind the proximal end of the scoring spiral to the catheter body. This CTAS element is claimed in the patents in suit.[8]

The CTAS element is the focus of this dispute. Named inventor Dr. Tzori testified that he came up with the CTAS idea.[9] He has described how he worked over several design iterations to arrive at using a full polymer tube to bind the spiral.[10]

Dr. Lotan disagrees. He claims that the CTAS was his idea. He has testified that he came up with the idea for fixing the proximal end of the scoring spiral in a way that would "allow for motion," "allow for shortening . . . when you inflate [the] balloon . . . but [would] then . . . take the wires back to [their] original position" upon deflation.[11] He said that he and his associate, Dr.

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[5] The "proximal" end of the device being that end nearer to the surgeon who is inserting the catheter into a patient; the device's "distal" end is the end that is farther from the user.

[6] Feld Decl. – ECF No. 127-5 at 2 (¶ 4).

[7] *See, e.g.*, Parnell Decl. Ex. P – ECF No. 120-23 at 5 ("The floating proximal ends of the devices were caught in the sheath's valve while be[ing] taken out.").

[8] *See* Joint Claim Constr. – ECF No. 99 (adopted at ECF No. 102).

[9] Tzori Dep. – ECF No. 118-3 at 12–14, 16–17 (pp. 133–35, 137–39). Where this order cites depositions, the first pinpoint citation is to the ECF-generated page number; the additional, parenthetical "p." citation is to the deposition transcript's original pagination.

[10] *Id.* at 16–17 (pp. 137–39).

[11] Lotan Dep. – ECF No. 31–34 (pp. 94–98).

David Meerkin, "came up with a solution that we need a semicompliant tube that will, on the one hand, be fixed, on the one hand [*sic*], be compliant."[12]

Named inventors Dr. Konstantino and Mr. Feld now claim that Dr. Lotan made an inventive contribution to the AngioSculpt (the CTAS, specifically) and was wrongly omitted from the patents in suit.[13] (Both Dr. Konstantino and Mr. Feld were among the founders of AngioScore.[14] Dr. Konstantino later left AngioScore to found TriReme. Mr. Feld is not now employed by either AngioScore or TriReme.[15]) It is undisputed that, in the relevant patent applications, the named inventors averred under penalty of perjury that they were the only inventors of the AngioSculpt. In declarations submitted in this lawsuit, however, Dr. Konstantino and Mr. Feld claim that the CTAS was Dr. Lotan's idea and that he therefore should have been named as an inventor on the relevant patents.[16]

"In June 2014, Dr. Lotan granted TriReme an exclusive license to 'any and all legal and equitable rights he held in the AngioScore patents.'"[17] The contention that Dr. Lotan is a wrongly omitted co-inventor of the patents in suit undergirds TriReme's present claim for correction of the patents under 35 U.S.C. § 256.

2. The Patents and Relevant Claims

The specific claims in dispute all relate to the CTAS. The parties stipulated earlier in this case to agreed constructions for the relevant specific claims made in the three patents in suit.[18]

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[12] *Id.*

[13] Konstantino Decl. – ECF No. 127-5 at 3 (¶¶ 5, 7) ("[T]he polymer sleeve [that] Dr. Lotan later suggested to Mr. Feld and me for attaching the proximal end of the scoring spiral to the catheter . . . "; "Dr. Lotan should have been named as an inventor in the patents that claimed his compliance tube attachment idea."); Feld Decl. – ECF No. 127-9 at 3–4 (¶¶ 7, 9–10) (essentially the same).

[14] Konstantino Decl. – ECF No. 127-5 at 2 (¶ 1); Feld Decl. – ECF No. 127-9 at 2 (¶ 1).

[15] Feld Decl. – ECF No. 127-9 at 2 (¶ 1).

[16] *See supra*, note 13.

[17] *TriReme*, 812 F.3d at 1052 (quoting appellate record).

[18] ECF No. 99. The court adopted the parties' stipulated claim construction. (ECF No. 102.)

3. The Events

This lawsuit centers on events that occurred mostly in the first half of 2003 as AngioScore developed the device that would eventually become the AngioSculpt scoring balloon catheter. Throughout this factual discussion the court gives specific dates mostly to give chronological structure to the narrative. Specific dates are not critical to the analysis, with one exception, and the reader need not remember or attach much significance to them. The one date that is significant is the May 1, 2003 effective date of Dr. Lotan's consulting agreement with AngioScore. For events before May 1, 2003, the parties do not materially disagree on what happened; they do disagree on what the earlier events show about what Dr. Lotan contributed to the AngioSculpt. The nature of Dr. Lotan's work for AngioScore after May 1, 2003 will determine whether he assigned to AngioScore whatever rights he might have had in the patented catheter, and so had nothing to license to TriReme in 2014.[19]

3.1 Invention

Up to January 2003, Dr. Konstantino had designed versions of the device on which the scoring spiral either had a free-floating proximal end or had both its proximal and distal ends fixed to the catheter. The only actual prototypes built to this date, however, had scoring spirals whose proximal ends were free-floating.[20] In late January 2003, Dr. Lotan met with Dr. Konstantino and Mr. Feld for AngioScore's "Design Review #1." According to Dr. Konstantino, Dr. Lotan expressed concern with the free-floating proximal end of the scoring spiral. He was concerned that the floating end could become entangled with other structures and advised against it being free-floating.[21] After this design review, Mr. Feld built a model of the scoring spiral that would be fixed to the catheter at both ends, but this version failed during bench testing and was deemed

[19] *See, infra*, Analysis, Part 1.

[20] *See* Opp. – ECF No. 127-3 at 9-10.

[21] *See* Konstantino Decl. – ECF No. 127-5 at 2 (¶ 4).

"unsuitable."[22] AngioScore thus "went back to prototypes with scoring spirals that were free floating at their proximal ends."[23]

In early April 2003, Dr. Konstantino faxed to AngioScore's patent-prosecution attorney "seven pages of hand[-]drawn figures of the device."[24] One of these drawings depicts a "polymer tube / mesh" at the "proximal side" of the scoring element.[25] Dr. Konstantino testified that he prepared this drawing on or around March 20, 2013.[26] The "polymer tube" does not seem at this stage to have been intended to compensate for the scoring spiral's movement during inflation. Instead, Dr. Konstantino called the "polymer tube" a "protective" sheath.[27] Its purpose, according to TriReme's expert, was to protect the scoring spiral's proximal end from getting caught on something.[28]

Also in early April 2003, Dr. Tzori performed a study on cadaveric human legs using prototype devices with free-floating proximal ends. Summarizing this study's results, Dr. Tzori reported that "[t]he floating proximal ends of the devices were caught in the sheath's valve while being taken out."[29] The report does not suggest how to solve this "retraction problem."[30]

This brings us to the first highly significant event for our inquiry. On April 14, 2003, Dr. Lotan and his associate, Dr. David Meerkin, gathered with Dr. Konstantino and Mr. Feld to test prototype scoring catheters on a live pig. They used five prototypes whose scoring spirals had free-floating proximal ends.[31] Two documents reported the results of this study. The first is an email that Dr. Konstantino sent late in the night after the study. In that email Dr. Konstantino wrote: "We had a good experiment today with Chaim and David. We spent all day there until late evening discussing

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[22] *Id.*

[23] *Id.*

[24] Parnell Decl. Ex. BB – ECF No. 120-33 at 3–9 (sealed).

[25] *Id.* at 9.

[26] Konstantino Dep. – ECF No. 118-5 at 10–11 (pp. 134–35).

[27] *Id.* at 15 (p. 142).

[28] Sheehan Dep. – ECF No. 118-2 at 9 (p. 142).

[29] Parnell Decl. Ex. P – ECF No. 120-23 at 5.

[30] *See id.*, *passim*.

[31] *See* Parnell Decl. Ex. AA – ECF No. 119-28 at 3–5.

engineering aspects of the device." Then, in a note that TriReme deems important, Dr. Konstantino added: "We received a huge amount of design inputs that we didn't have until now." Reporting more specific results, Dr. Konstantino also wrote: "Four (4) out of five devices dislodged from the balloon due to poor bonding." And that, "[t]he proximal end [of the scoring spiral] was caught in the guide upon retrieval a few times." His notes for "immediate actions" included the observation that, "[t]he proximal end (floating) is already in design[-]modification process . . . ." And, finally, that the "[p]roximal end should be protected by a polymer sleeve before 4/27."[32]

The second document that emerged from the April 14th pig study is a report that Dr. Meerkin authored, entitled "Angioscore Spiral Balloon Study I."[33] This more fully related the results of the pig study. The most relevant notes in this report are these (all language is quoted):

- Sticking was noted. Balloon was retracted and spiral dislodged from the balloon.
- Summary Balloon 1. . . . Retraction — serious problem.
- [R]etracted guide and loss of spiral occurred. Balloon retrieved without spiral.
- **Summary.** Balloon handles well but there is a clear retention problem. . . . Very little can be said about challenging []anatomy until the retention issue is solved. . . . [T]he current bonding method is clearly inadequate and balloon retention of the spiral is a central issue.
- **Recommendations[.]** Bonding of the proximal and distal edges [is] essential.[34]

Dr. Lotan has testified that the last recommendation ("Bonding . . . [is] essential") reflected his idea that the spiral's proximal end should be fixed by a semi-compliant tube.[35] At the same time, though, Dr. Lotan has also testified that this report does not mention using a CTAS to solve this problem.[36]

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[32] For this whole paragraph after note 29, see Robson Decl. Ex. 10 – ECF No. 120-13 at 2.

[33] Parnell Decl. Ex. AA – ECF No. 119-28.

[34] *Id*. at 2–6. These notes refer respectively to the five discrete prototypes that were used. Some refer to the first device, that is to say, others to the second, third, and so on. It is not necessary for present purposes to identify which notes correspond to which specific prototypes.

[35] *See* Lotan Dep. – ECF No. 31–34 (pp. 94–98).

[36] Lotan Dep. – ECF No. 118-4 at 13–15 (pp. 61–63).

A week later Dr. Lotan met again with Dr. Konstantino and Mr. Feld. According to Dr. Konstantino and Mr. Feld, the three men discussed "Dr. Lotan's suggestion for the polymer sleeve and [Mr. Feld's] suggestion for a stress[-]relief mechanism built into the metal of the scoring spiral."[37]

Three days after this meeting, Dr. Tzori emailed AngioScore's patent-prosecution counsel. Dr. Tzori described and included a drawing of a scoring-balloon catheter with a "proximal polymeric spring."[38] He also mentioned two approaches that AngioScore was trying in order to address the problems created by the movement of the scoring spiral when the balloon inflated. He first mentioned the approach favored by Mr. Feld, in which "sinuses" on the metal spiral itself "compensat[e] for elongation of the struts [during] inflation."[39] He then pointed to the "polymeric spring" sketch as depicting

> a different way to accomplish the same thing . . . . A polymeric tube is attached to the . . . proximal end of the device and . . . to the catheter proximally . . . . During inflation the tube is stretched elastically and compensate[s] for the movement of the proximal end of the device. During deflation the tube contracts and pulls the device's end back to its place.[40]

The email does not say who came up with the idea of using a "polymeric spring."

3.2 Assignments — The 2003 Consulting Agreement — The 2014 License

AngioScore and Dr. Lotan entered into a consulting agreement in November 2003, though the contract had a retroactive effective date of May 1, 2003.[41] The agreement's terms are undisputed. Under the contract, in exchange for AngioScore stock options, Dr. Lotan agreed to "advise [AngioScore] on product design, clinical trial design and interpretation of clinical data," as well as "assist [AngioScore] with preclinical and clinical testing of the Company's products."[42] The

[37] Feld Decl. – ECF No. 127-9 at 3 (¶ 8); *accord* Konstantino Decl. – ECF No. 37-15 at 4 (¶ 11).

[38] Parnell Decl. Ex. P – ECF No. 120-23.

[39] *Id.* at 2.

[40] *Id.*

[41] *See* ECF No. 36-2 at 2, 5.

[42] *Id.* at 2, 7.

contract does not name a particular product.[43] In § 9(b) of the contract Dr. Lotan agreed to the following assignment of rights:

> **Assignment of Inventions.** Consultant [Dr. Lotan] agrees to promptly disclose to the Company and hereby assigns to the Company . . . all right, title and interest in and to ***all inventions***, . . . , ***developments***, ***concepts***, know-how, ***improvements*** or trade secrets, ***whether or not patentable***, that Consultant may ***solely or jointly conceive or develop or reduce to practice*** during the term of this Agreement that relate to the Services (collectively referred to as "Inventions").[44]

There is no dispute that, after April 2003, Dr. Lotan did not work on the physical design of the catheter. There is also no dispute that, after the May 1, 2003 effective date of the consulting agreement, Dr. Lotan did work on other catheter-related issues under the terms of his consulting contract. His work after May 1, 2003 can be divided into two groups. First, "in May or June 2003," he gathered information on catheter-balloon manufacturers. At the time, Dr. Lotan was planning to attend a medical conference in Paris. AngioScore asked him to gather information on available catheter balloons while he was there. Dr. Lotan says that he "collected contact information for some balloon companies" and sent this to AngioScore. He does not know what AngioScore did with the information.[45]

Second, Dr. Lotan designed, implemented, and interpreted human clinical tests of the AngioSculpt. The precise dates of Dr. Lotan's work on these studies is uncertain. He has testified that he designed human trials for AngioScore "after April 2003," but denies that he conducted any such trial himself in that timeframe.[46] He has testified that he used and tested the AngioSculpt in human clinical trials after May 2004.[47] He also confirmed that the devices that he used in these clinical tests included the CTAS.[48]

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[43] *Id.*, *passim*.

[44] *Id.* at 3 (¶ 9(b)) (emphases added).

[45] For this whole paragraph, see Lotan Decl. – ECF No. 127-7 at 4 (¶ 13) (sealed).

[46] *Id.* at 4 (¶ 14); Lotan Dep. – ECF No. 118-4 at 7–8 (pp. 54–55).

[47] Lotan Dep. – ECF No. 118-4 at 34 (p. 126).

[48] *Id.* at 34–35 (pp. 126–27).

GOVERNING LAW

1. Summary-Judgment Law

The court must grant a motion for summary judgment if the movant shows that there is no genuine dispute as to any material fact and the moving party is entitled to judgment as a matter of law. Fed. R. Civ. P. 56(a); *Anderson v. Liberty Lobby, Inc.*, 477 U.S. 242, 247–48 (1986). Material facts are those that may affect the outcome of the case. *Anderson*, 477 U.S. at 248. A dispute about a material fact is genuine if there is sufficient evidence for a reasonable jury to return a verdict for the non-moving party. *Id.* at 248–49. In ruling on a motion for summary judgment, inferences drawn from the underlying facts are viewed in the light most favorable to the non-moving party. *E.g., Matsushita Elec. Indus. Co. v. Zenith Radio Corp.*, 475 U.S. 574, 587 (1986); *Ting v. United States*, 927 F.2d 1504, 1509 (9th Cir. 1991). Furthermore, the court "must view the evidence presented through the prism of the substantive evidentiary burden." *Anderson*, 477 U.S. at 254. "The question" under Rule 56, in other words, "is whether a jury could reasonably find *either* that the plaintiff proved his case by the quality and quantity of evidence required by the governing law *or* that he did not." *Id.* (emphasis in original).

2. Patents: Omitted Inventors

"Patent issuance creates a presumption that the named inventors are the true and only inventors." *Ethicon, Inc. v. United States Surgical Corp.*, 135 F.3d 1456, 1460 (Fed. Cir. 1998) (citing *Hess. v. Advanced Cardiovascular Sys., Inc.*, 106 F.3d 976, 980 (Fed. Cir. 1997)); *see* 35 U.S.C. § 282(a) ("A patent shall be presumed valid."). "Inventorship is a question of law" based upon underlying questions of fact. *See Ethicon*, 135 F.3d at 1460 (citing *Hess*, 106 F.3d at 90 and *Sewall v. Walters*, 21 F.3d 411, 415 (Fed. Cir. 1994)).

"A patented invention may be the work of two or more joint inventors." *Ethicon*, 135 F.3d at 1460 (citing 35 U.S.C. § 116). "Because '[c]onception is the touchstone of inventorship,' each joint inventor must generally contribute to the conception of the invention." *Id.* (quoting *Burroughs Wellcome Co. v. Barr Lab., Inc.,* 40 F.3d 1223, 1227–28 (Fed. Cir. 1994)). "Conception is the 'formation in the mind of the inventor, of a definite and permanent idea of the complete and

operative invention, as it is hereafter to be applied in practice.'" *Id.* (quoting *Hybritech, Inc. v. Monoclonal Antibodies, Inc.,* 802 F.2d 1367, 1376 (Fed. Cir. 1986) (quoting in turn 1 *Robinson on Patents* 532 (1890)). "[F]or the conception of a joint invention, each of the joint inventors need not 'make the same type or amount of contribution' to the invention." *Id.* (quoting 35 U.S.C. § 116). "Rather, each needs to perform only a part of the task which produces the invention." *Id.* "Furthermore, a co-inventor need not make a contribution to every claim of a patent." *Id.* (citing 35 U.S.C. § 116). "A contribution to one claim is enough." *Id.* (citing *SmithKline Diagnostics, Inc. v. Helena Lab. Corp.*, 859 F.2d 878, 888 (Fed. Cir. 1988)). Consequently, "inventorship is determined on a claim-by-claim basis." *Gemstar–TV Guide Int'l, Inc. v. Int'l Trade Comm'n*, 383 F.3d 1352, 1381 (Fed. Cir. 2004). "Thus, the critical question for joint conception is who conceived, as that term is used in the patent law, the subject matter of the claims at issue." *Ethicon*, 135 F.3d at 1460.

Allegedly omitted co-inventors "must prove their contribution to the conception of the [patented] claims by clear and convincing evidence." *Id.* at 1461. A putative inventor's own testimony "cannot, standing alone, rise to the level of clear and convincing proof." *Id.* (quoting *Price v. Symsek*, 988 F.2d 1187, 1194 (Fed. Cir. 1993)). Nor can that of other interested witnesses. *E.g., Lacks Indus., Inc. v. McKechnie Vehicle Components USA, Inc.*, 322 F.3d 1335, 1350 (Fed. Cir. 2003). Instead, "an alleged co-inventor must supply evidence to corroborate his testimony." *Ethicon*, 135 F.3d at 1461.

"Corroborating evidence may take many forms." *Ethicon*, 135 F.3d at 1461. Contemporaneous documentary proof of the alleged contribution gives the strongest corroboration. *E.g., Juicy Whip, Inc. v. Orange Bang, Inc.*, 292 F.3d 728, 743 (Fed. Cir. 2002) (quoting *Sandt Tech,. Ltd. v. Resco Metal & Plastics Corp.*, 264 F.3d 1344, 1350–51 (Fed. Cir. 2001)). Indeed, to corroborate the testimony of interested actors, courts "have consistently required" documentary proof seems to be necessary. *Lacks*, 322 F.3d at 1350 ("[C]ase law reveals a clear requirement that such oral testimony by interested parties must be corroborated by documentary testimony. . . . [C]ourts have consistently required documentary corroboration of oral testimony by interested parties . . . .") (citing, *inter alia*, *The Barbed Wire Patent Case,* 143 U.S. 275 (1882)). "Circumstantial evidence

about the inventive process may also corroborate." *Ethicon*, 135 F.3d at 1461. "Additionally, oral testimony of someone other than the alleged inventor may corroborate." *Id.*

"Whether the inventor's testimony has been sufficiently corroborated is evaluated under a 'rule of reason' analysis." *Id.* "Under this analysis, '[a]n evaluation of *all* pertinent evidence must be made so that a sound determination of the credibility of the [alleged] inventor's story may be reached.'" *Id.* (quoting *Price*, 988 F.2d at 1195) (emphasis in original).[49]

"Importantly, this [rule-of-reason] analysis 'does not require that every detail of the testimony be independently and conclusively supported" by the corroborating evidence.'" *TransWeb, LLC v. 3M Innovative Props. Co.,* 812 F.3d 1295, 1301–02 (Fed. Cir. 2016) (quoting *Ohio Willow Wood Co. v. Alps South*, 735 F.3d 1333, 1348 (Fed. Cir. 2013)).

No single piece of proof need be conclusive. It is not necessary that any one piece of evidence definitively lay out the inventor's contribution, or show her whole contribution to the inventive process. *See TransWeb,* 812 F.3d at 1302 (quoting *Fleming v. Escort Inc.*, 774 F.3d 1371, 1377 (Fed. Cir. 2014)). The court, again, reads "all pertinent evidence" together, "as a whole," to decide whether the claimant has raised a triable issue — with the ultimate demand being for "clear and convincing" proof. *See TransWeb*, 812 F.3d at 1302 (quoting *Fleming*, 774 F.3d at 1377) ("as a whole").

In the end, "there are no hard and fast rules as to what constitutes sufficient corroboration, and each case must be decided on its own facts." *TransWeb*, 812 F.3d at 1302 (citing *Sandt,* 264 F.3d at 1350).

[49] This rule-of-reason analysis is sometimes elaborated into the eight specific factors listed in *Woodland Trust v. Flowertree Nursery, Inc.*, 148 F.3d 1368, 1371 (Fed. Cir. 1998). Courts do not always expressly use the *Woodland Trust* factors. *See, e.g., Gemstar,* 383 F.3d at 1381.

ANALYSIS

1. Assignment — Standing and Jurisdiction

The court must first decide whether TriReme has standing to bring this correction suit. AngioScore suggests that it does not, and that the court consequently lacks subject-matter jurisdiction over this case. More specifically, AngioScore argues that, under § 9(b) of the 2003 consulting agreement, the work that Dr. Lotan did for AngioScore after the agreement's May 1, 2003 effective date effected an assignment to AngioScore of all Dr. Lotan's rights in the AngioSculpt. In AngioScore's view, Dr. Lotan thus had no rights to assign to TriReme in June 2014 — so that TriReme lacks standing to sue for a § 256 correction. *See* (Mot. – ECF No. 120-3 at 27–30); *see generally, e.g., Larson v. Correct Craft, Inc.*, 568 F.3d 1319, 1325–27 (Fed. Cir. 2009) (one who assigns away rights in invention lacks constitutional standing to bring § 256 suit). The Federal Circuit put the assignment issue in this case thus:

> Whether Dr. Lotan assigned his rights under § 9(b) . . . depends on whether Dr. Lotan's continued work on AngioSculpt after the effective date in fact amounted to "developing," or "reducing to practice" an "invention," "development," or "improvement" pursuant to § 9(b). Only if Dr. Lotan's continued work after May 1, 2003, constituted "developing," or "reducing to practice" would his inventive contribution have been assigned to AngioScore under § 9(b) of the Consulting Agreement.

TriReme, 812 F.3d at 1055 (record citations omitted).

Dr. Lotan's work for AngioScore after May 1, 2003 comes under two heads. First, "in May or June 2003," he gathered information on catheter-balloon manufacturers. At the time, Dr. Lotan was planning to attend a medical conference in Paris. AngioScore asked him to gather information on available catheter balloons while he was there. Dr. Lotan says that he "collected contact information for some balloon companies" and sent this to AngioScore. He does not know what AngioScore did with the information.[50]

Second, Dr. Lotan designed, implemented, and interpreted human clinical tests of the AngioSculpt. The precise dates of Dr. Lotan's work on these studies is uncertain. He has testified

[50] For this whole paragraph, see Lotan Decl. – ECF No. 127-7 at 4 (¶ 13) (sealed).

that he designed human trials for AngioScore "after April 2003," but denies that he conducted any such trial himself around this date.[51] He has testified that he used and tested the AngioSculpt in human clinical trials after May 2004.[52] He also testified that the devices that he used in these clinical tests included the semi-compliant polymer tube that is the focus of this correction suit.[53]

The court cannot say on this record that TriReme lacks standing as a matter of law. More exactly, the court cannot say as a matter of law that Dr. Lotan's work for AngioScore after May 1, 2003 constituted developing the AngioSculpt or reducing it to practice. The likeliest date by which the device was reduced to practice appears to be July 2003, when AngioScore filed its first relevant patent application. By this date, though, the only (post-May 1, 2003) work that Dr. Lotan indisputably had done was to send AngioScore "contact information for balloon" manufacturers from a conference that he was attending for his own purposes. Sometime "after April 2003," Dr. Lotan designed but did not conduct clinical tests of the AngioSculpt. After May 2004, he used the AngioSculpt in clinical tests; but, as TriReme rightly points out, if the device was being used on humans in clinical tests, then necessarily it had already been reduced to practice.

AngioScore has not met its Rule 56 burden of showing that, as a matter of law, Dr. Lotan's work after May 1, 2003 amounted to developing the AngioSculpt or reducing it to practice. The court thus cannot summarily conclude that Dr. Lotan's work effected an assignment of his rights to AngioScore under § 9(b) of the consulting agreement. The court thus denies AngioScore's jurisdictional motion.

2. Dr. Lotan's Contribution is Inadequately Corroborated

2.1 Declarations

The factual dispute over Dr. Lotan's alleged inventive contribution starts as a battle of conflicting testimony. Named inventor Dr. Tzori testified that he came up with the CTAS idea.[54]

[51] *Id.* at 4 (¶ 14); Lotan Dep. – ECF No. 118-4 at 7–8 (pp. 54–55).

[52] Lotan Dep. – ECF No. 118-4 at 34 (p. 126).

[53] *Id.* at 34–35 (pp. 126–27).

[54] Tzori Dep. – ECF No. 118-3 at 12–14, 16–17 (pp. 133–35, 137–39).

He has described how he worked over several design iterations to arrive at using a full polymer tube to flexibly bind the proximal end of the spiral.[55]

By contrast, Dr. Lotan claims that he conceived of the CTAS. He has testified that he came up with the idea for fixing the proximal end of the scoring spiral in a way that would "allow for motion," "allow for shortening . . . when you inflate [the] balloon . . . but [would] then . . . take the wires back to [their] original position" upon deflation.[56] He said that he and Dr. Meerkin "came up with a solution that we need a semicompliant tube that will, on the one hand, be fixed, on the one hand [*sic*], be compliant."[57]

Named inventors Dr. Konstantino and Mr. Feld now claim that Dr. Lotan contributed the CTAS to the AngioSculpt and was wrongly omitted from the patents in suit.[58] It is undisputed that, in the relevant patent applications, all the named inventors averred under penalty of perjury that they were the only inventors of the AngioSculpt. In declarations submitted in this lawsuit, however, Dr. Konstantino and Mr. Feld claim that the CTAS was Dr. Lotan's idea and that he therefore should have been named as an inventor on the relevant patents.[59]

It is rudimentary in this area of the law that the testimony of interested parties and witnesses cannot alone yield clear and convincing proof that an allegedly omitted co-inventor contributed to a patent. Interested testimony must be independently corroborated. *E.g., Lacks Industries*, 322 F.3d at 1350 ("A review of the relevant case law reveals a clear requirement that such oral testimony by interested parties must be corroborated by documentary testimony."). An immediate corollary to this rule prohibits the cross-corroboration of interested testimony: The testimony of some interested witnesses cannot alone corroborate that of other interested witnesses. *Id.*

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[55] *Id.* at 16–17 (pp. 137–39).

[56] Lotan Dep. – ECF No. 31–34 (pp. 94–98).

[57] *Id.* There is no claim made regarding Dr. Meerkin's alleged contribution.

[58] Konstantino Decl. – ECF No. 127-5 at 3 (¶¶ 5, 7) ("[T]he polymer sleeve [that] Dr. Lotan later suggested to Mr. Feld and me for attaching the proximal end of the scoring spiral to the catheter . . . ."; "Dr. Lotan should have been named as an inventor in the patents that claimed his compliance tube attachment idea."); Feld Decl. – ECF No. 127-9 at 3–4 (¶¶ 7, 9–10) (essentially the same).

[59] *Id.*

("Addressing first the cross-corroboration of oral testimony, we conclude that the Special Master rightly refused to accept it as adequate."); *Weaver v. Houchin*, 467 F. App'x 878, 880 (Fed. Cir. 2012) ("[W]ithout corroboration, the oral testimony" of other putative co-inventors "is simply *insufficient as a matter of law* to meet the clear and convincing standard of proof required to establish co-inventorship.") (emphasis added).[60]

The decisive issue will thus come down to the effect of the proof that is said to corroborate, not only TriReme's basic claim that Dr. Lotan contributed to the conception of the CTAS, but, more exactly, the testimony of the interested actors who have averred that he did so contribute. On this crucial head, TriReme suggests that the operative facts "center[] on the design discussion Dr. Konstantino and Mr. Feld indisputably held with Dr. Lotan late into the evening of April 14, [2003,] after the porcine study."[61] According to TriReme, "documentation originating from that day, and shortly thereafter, shows when a solution was finally reached and that it was Dr. Lotan's idea."[62] TriReme points to six particular pieces of evidence to corroborate its claim that Dr. Lotan contributed to the invention of the AngioSculpt — and, particularly, to the CTAS. To corroborate, more exactly, the testimony of the interested witnesses. Before considering these items, the court addresses several preliminary issues.

2.2 Preliminary Considerations

2.2.1 Time

It is first relevant to note the time span that separates the plaintiff's new declarations from the events that they describe. This is an express part of the rule-of-reason analysis. *E.g.*, *Woodland Trust*, 148 F.3d at 1371 (rule-of-reason corroboration test includes "time period between the event and trial"). The relevant events occurred in the first half of 2003; this lawsuit was filed in 2014;

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[60] The Federal Circuit appears to take a broad view of who is "interested" for these purposes. The parties themselves, of course, but also their employees, shareholders, customers, business associates, and friends all constitute "interested" witnesses in patent-law corroboration analysis. *See Juicy Whip*, 292 F.3d at 743; *Woodland Trust*, 148 F.3d at 1371.

[61] ECF No. 127-3 at 9.

[62] *Id.*

Dr. Konstantino first filed a declaration asserting Dr. Lotan's inventive contribution of the CTAS in 2015; Dr. Lotan testified to his contribution in 2015[63]; and Mr. Feld's declaration came in January 2017.[64] The years that have passed since the genesis of the AngioSculpt and CTAS alone sap the probative impact of the witnesses' testimony. *See Woodland Trust*, 148 F.3d at 1371 ("[T]here is a very heavy burden to be met by one challenging validity when the only evidence is the oral testimony of interested persons and their friends, particularly as to long-past events."); *Juicy Whip*, 292 F.3d at 743 ("[T]he evidence . . . was insufficient as a matter of law to surmount the clear and convincing . . . hurdle. The testimony . . . came more than eight and twelve years, respectively, after the witnesses saw" the relevant products.)

2.2.2 "Element-wise" analysis

In an overarching point, TriReme complains that AngioScore has mounted an impermissible, "element-wise attack" on the corroborating evidence. (Opp. – ECF No. 127-3 at 16, 18–19.) By which TriReme seems to mean that the rule-of-reason analysis cannot discretely assess individual items of corroborating proof, especially to notice their shortcomings, as this would run afoul of the Federal Circuit's directive that such proof be "taken as a whole." (*Id.*) In this respect TriReme cites the Federal Circuit's decision in *TransWeb*, where the appeals court said that a party was

> correct that none of the corroborating evidence constitutes definitive proof . . . or discloses each claim limitation as written. But the corroboration requirement has never been so demanding. It is a flexible, rule-of-reason demand for independent evidence that, as a whole, makes credible the testimony of the purported prior inventor with regard to conception and reduction to practice of the invention as claimed.

TransWeb, 812 F.3d at 1302 ("[W]e have repeatedly rejected an element-wise attack on corroboration of oral testimony.") (citing *Fleming*, 774 F.3d at 1377).

The court recognizes that no single piece of evidence need be conclusive. And that every corroborating "detail" need not be "independently evidenced." *TransWeb*, 812 F.3d at 1302 (citing

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[63] *See* Lotan Dep. – ECF No. 37-2 at 69–70, 83–84 (pp. 95–96, 141–42).

[64] ECF No. 37-15 at 3 (¶ 10).

Fleming, 774 F.3d at 1377). But that does not mean that the rule-of-reason test proceeds without considering the discrete items of proof that are said to support a purported co-inventor's claim. Indeed, it is hard to imagine how such an analysis could usefully proceed without assessing the strengths and shortcomings of those individual items of proof. Nothing in the governing law (that the court has seen) demands or even justifies a sort of amorphous *Gestalt* approach to corroborating proof, where the analysis takes only an overall sense of the evidence without explicitly weighing the individual items.

Precedent seems to run to the contrary. The Federal Circuit thus rejected an identical challenge to item-by-item corroboration analysis in *Lacks Industries*. In that patent-infringement case, the Federal Circuit affirmed the trial court's corroboration analysis under the rule-of-reason test. *Lacks Industries*, 322 F.3d at 1348–51. The appeals court there wrote:

> [The alleged infringers] attempt to portray the Special Master's determination as requiring each document to independently provide a detailed description as to the extent and pattern of [the relevant product feature], but the reasonable reading, our reading, of his findings is simply that he found the documentary evidence, as well as the witness testimony, insufficient to carry a clear and convincing burden.
>
> The Special Master's factual determinations as to the insufficiency of the documentary evidence are thorough. ***He evaluated each document, discussed it thoroughly, and considered whether it corroborated*** the testimony of the [defendants'] three employees. . . . ***After a . . . discussion of each . . . document in evidence, the Special Master evaluated the totality of the evidence*** before him and found that evidence insufficient:
>
> In light of the Special Master's complete and specific findings and his correct understanding of our case law on corroboration of oral testimony, we conclude that the Special Master committed no reversible error.

Lacks Industries, 322 F.3d at 1350–51 (emphasis added).

The Federal Circuit itself regularly analyzes such questions in the way that AngioScore does here: by weighing discretely the merits of individual pieces of corroborating proof and then asking whether, "as a whole," the material before it raises a genuine issue on inventorship — judged against the ultimate demand for clear and convincing proof. *See, e.g., Weaver*, 467 F. App'x at 880–81 (assessing individual items of proffered corroboration) ("Even drawing all factual inferences in his favor, Mr. Weaver still fails to identify sufficient corroborating evidence to establish his inventorship by clear and convincing evidence. As a result, the district court correctly

held that summary judgment was appropriate . . . ."). When the corroborating proof comprises only one or two items — such as in *Gemstar* or *Symantec* (both of which are discussed below) — then the whole rule-of-reason analysis looks like an "element-wise" assessment of discrete items. When, as here, the alleged co-inventor points to numerous pieces of corroborating evidence, then the analysis involves both individually weighing the respective pieces of evidence, and, consistent with the governing test, taking the proof "as a whole" to ask whether it all raises a triable claim.

The court moreover has not understood AngioScore's argument as demanding either that every "detail" of the corroborating proof be "independently evidenced," or that any one piece of corroboration "constitute[] definitive proof" of Dr. Lotan's contribution. If that was AngioScore's intent, it would be error; in any event, the court itself has not subjected the evidence to those erroneous demands.

2.2.3 The inconsistent averments do not raise a triable issue

It is undisputed that, in their patent applications in 2004, Dr. Konstantino, Mr. Feld, and Dr. Tzori affirmed under penalty of perjury that they were the only named inventors of the AngioSculpt.[65] In the declarations that they have submitted in this lawsuit, however, Dr. Konstantino and Mr. Feld say something different; they now claim that Dr. Lotan was an additional inventor. TriReme finds a triable issue in this inconsistency. It writes: "[A]ny conflict between those [2004 patent-application] declarations and current testimony creates a genuine issue of material fact." (ECF No. 127-3 at 21) (citing *Checkpoint Sys., Inc. v. All-Tag Security S.A.*, 412 F.3d 1331, 1338 (Fed. Cir. 2005) and *Illinois Tool Works, Inc. v. MOC Prods. Co.*, 856 F. Supp. 2d 1156, 1186 (S.D. Cal. 2012)).

The court disagrees. The inconsistency between the new declarations and the assertions in the 2004 patent applications does not itself raise an issue for trial. It is a familiar rule that a party cannot create a genuine issue for trial, and thus survive summary judgment, simply by contradicting its prior sworn statements:

[65] ECF Nos. 119-12 at 56–57, 119-27 at 2.

> As the Supreme Court explained in *Cleveland v. Policy Mgmt. Sys. Corp.,* 526 U.S. 795, 807 (1999), "The lower courts . . . have held with virtual unanimity that a party cannot create a genuine issue of fact sufficient to survive summary judgment simply by contradicting his or her own previous sworn statement . . . . without explaining the contradiction or attempting to resolve the disparity."

In re Cygnus Telecomms. Tech., LLC Patent Litig., 536 F.3d 1343, 1354 (Fed. Cir. 2008) (parallel citations omitted).

TriReme offers two explanations for the inconsistency. Neither convinces. The plaintiff first points to the experience of its former CEO, Ephraim Heller, who, from 2003 to April 2005, was TriReme's "administrative lead for patent prosecution."[66] The plaintiff recounts the following. When TriReme "planned to file its first utility patent application" in January 2003, for what "ultimately issued as the '824 patent," it determined that the inventors were Dr. Konstantino, Mr. Feld, and Dr. Tzori.[67] The '824 application was not filed until July 30, 2003 — which, as TriReme says, was "months after Dr. Lotan's inventive contribution."[68] Between "plann[ing]" for and actually filing the '824 application, however, there is no evidence of "further inventorship discussions."[69] Furthermore, it was Mr. Heller's "established practice to determine inventorship contributions based on allowed claims."[70] Because Mr. Heller left TriReme before the patent office had allowed any claims, "he never performed an inventorship assessment."[71]

Problems with this explanation are immediately apparent. The '824 patent is part of the background story in this case but it is not material to the joined issues; it is not material, in particular, to the question of Dr. Lotan's allegedly contributing the CTAS to the patented scoring-balloon catheter. As both parties agree, the '824 patent did not claim the CTAS.[72] So there would

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[66] Opp. – ECF No. 127-3 at 21–22.

[67] *Id.*

[68] *Id.*

[69] *See id.*

[70] *Id.*

[71] *Id.*

[72] *See, e.g., id.* ("[T]he '824 patent briefly mentions using 'elastic polymeric tubes' in the specification *but does not claim them* . . . .") (record citation omitted) (emphasis added). The parties explained at the hearing, too, that the experts on both sides agreed that the '824 patent did not claim the CTAS. *See, e.g.,* Parnell Dep. – ECF No. 126-33 at 4 (p. 27).

be no question of Dr. Lotan's being included as an inventor on that, anyway, if his contribution was the CTAS. TriReme itself thus writes: "[T]he first declaration" — "corresponding to the '824 patent" — "was correct not to identify Dr. Lotan as an inventor based on his compliance[-]tube contribution." Furthermore, it is not clear how Mr. Heller's "established [administrative] practice" — and his inability in this case to "perform[] an inventorship assessment" after the PTO allowed claims — explains away the hypothetically mistaken averments by Dr. Konstantino, Mr. Feld, and Dr. Tzori that only they had invented the AngioSculpt. The one item does not obviously speak to the other. Invoking Mr. Heller does not sufficiently explain the testimonial inconsistency; and, more to the point, it does not justify using that very inconsistency to raise a triable issue on Dr. Lotan's alleged inventorship.

The second, maybe more basic, explanation that TriReme offers is that in their 2004 applications Dr. Konstantino and Mr. Feld did "did not realize that they needed to identify Dr. Lotan" as an inventor.[73] This explanation is legally inadequate.

The district court in *Cygnus* rejected a similar explanation for testimonial inconsistency, and held that the inventor had not raised a triable issue on when he had reduced an invention to practice. *In re Cygnus Telecomms. Tech., LLC Patent Litig.*, 481 F. Supp. 2d 1029, 1050–51 (N.D. Cal. 2007). In *Cygnus*, during patent prosecution, the inventor had initially sworn to a certain reduction-to-practice date. *Id.* at 1050. Approximately nine years later, opposing a summary-judgment motion in a validity suit, he sought "to distance himself from his [earlier] declaration." *Id.* To explain the disparity, he claimed that, when he signed his original declaration, he "did not know what the legal term 'reduced to practice' meant," and that the term had been "drafted by counsel." *Id.* The district court refused to accept this explanation. *Id.* at 1050–51. And it refused to find a triable issue in the testimonial inconsistency. *Id.* at 1050. Beyond invoking the rule quoted above, the district court reasoned that the inventor "had a duty to ensure that the [original prosecution] filings were accurate." *Id.* The Federal Circuit later affirmed the grant of summary judgment. *Cygnus*, 536 F.3d at 1353–54. The appellate court "agree[d] with the district court" that

[73] ECF No. 127-3 at 22–23.

the patentee was "bound by the statements [that the inventor] made in his [original] declaration." *Id.* at 1354.

Inadequate explanation is also what separates this case from *Checkpoint*. TriReme accurately cites *Checkpoint* as an omitted-inventor case in which the Federal Circuit found a triable issue precisely in the discrepancy between the inventor's sworn averments during patent prosecution, and his later, contrary declarations in litigation. *See* (ECF No. 127-3 at 21); *Checkpoint*, at 1334–35, 1337–39. The situation in *Checkpoint* is, to some extent, much like that in this case. There, too, an inventor originally swore in a small-entity patent application that he was the only inventor. *Id.* at 1334. Two of his associates submitted a joint small-entity declaration stating that their "rights under contract or law" had been conveyed to the named inventor, thereby confirming his sole role in creating the relevant product. *Id.* at 1335. Years later, in the *Checkpoint* lawsuit (and for reasons that we need not go into here), that same inventor and those same associates submitted declarations alleging that the associates were co-inventors. *Id.* at 1335. The Federal Circuit eventually reversed a summary judgment on the inventorship issue, holding that the contradicting declarations themselves raised an issue for trial. *Id.* at 1338.

The testimonial discrepancy in *Checkpoint*, however, was better explained than that proffered by Dr. Konstantino and Mr. Feld in this case. In *Checkpoint*, the declarants explained that they had "intentionally" omitted the associates from the original application for various tactical reasons. As for the named inventor, he had originally declared himself the sole inventor so that he would qualify for "small-entity status" and its reduced patent fees. *See id.* at 1334. The associates explained that they had "intentionally omitted" themselves from the original application so that a competitor (the *Checkpoint* plaintiff) could not invoke existing contracts to "try and claim ownership of the invention." *Id.* at 1335.[74]

These explanations distinguish *Checkpoint* from this case. They provide reasons that are somehow extrinsic to the question of who contributed to the patented invention. They provide

[74] It is not clear from the *Checkpoint* opinion why those contracts might support such a claim. *See Checkpoint*, 412 F.3d at 1334–35.

context to the small-entity declarations but do not flatly contradict them. By contrast, the new declarations here do contradict the 2004 application declarations. The explanation given by Dr. Konstantino and Mr. Feld in this case, that they "simply did not realize that they needed to identify Dr. Lotan" as an inventor, does nothing more than roll back their earlier averments on the core questions of inventorship: Should Dr. Lotan have been included? Did he make a contribution that warranted his inclusion on the application? The inconsistency in this case, in other words, is a pure reversal of an earlier sworn position in a way that is more like the reversal in *Cygnus*, and differs from the more nuanced facts of *Checkpoint*.

Furthermore, to accept Dr. Konstantino's and Mr. Feld's testimony as alone raising an issue for trial, even if by virtue of their shifting positions, would seem exactly a mode of relying on the testimony of interested parties without demanding independent corroboration. And hence to run against a rule that is deeply entrenched in this area of the law. It may be worth suggesting that in this respect there is a tension between *Checkpoint* and *Cygnus*. That tension may be resolved (as this court has resolved it) by observing that the respective testimonial inconsistencies in these cases were met with rather different explanations. And by further recognizing that the more recent *Cygnus* cases better hew to established tenets (no trial issue from unexplained testimonial inconsistencies; no issue from uncorroborated interested testimony). Or it may be something that the Federal Circuit itself may address in some other way.

The ultimate point for this case, again, is that the court does not agree that the inconsistent averments of Dr. Konstantino and Mr. Feld alone raise a genuine issue on the question of Dr. Lotan's inventive contribution.

2.3 Dr. Konstantino's April 14, 2003 Email

The court now turns to the corroborating proof.

Dr. Konstantino's email of April 14, 2003 — which digests the results of that same day's pig study and the apparently lengthy discussion among Dr. Lotan, Dr. Konstantino, and Mr. Feld that followed — does not corroborate the claim that Dr. Lotan conceived of the CTAS. At least it does

not corroborate that claim as strongly as TriReme argues. This is true even when the evidence is viewed most favorably to TriReme.

The email on its face does not say or suggest that Dr. Lotan conceived of the CTAS. The email does not specifically name anyone as having had the CTAS idea. It mentions using a "polymer sleeve" in further iterations of the device to "protect[]" the "proximal end" of the scoring spiral. But it does not attribute this idea to anyone. Indeed, it does not ascribe any particular design idea (neither the CTAS nor anything else) to any particular study participant.

TriReme emphasizes Dr. Konstantino's statement in the email that, "We received a huge amount of design inputs that we didn't have until now." In TriReme's view, because Dr. Lotan was not among the "we" of AngioScore, this statement must mean that "we," *AngioScore*, "received . . . design inputs" and that these "design inputs" came from Dr. Lotan. Finally, TriReme reads this as implying that Dr. Lotan contributed the specific "design input" of the CTAS. This, at all lengths, is how TriReme says that the favorable inferences must fall.

The court does not think that the inferences can go that far. To see what this email does and does not suggest, it is first worth noting its content before applying inferences. Notice first that the term "design inputs" is ambiguous. Does "design inputs" mean data from the experiment that would then feed into the design process? (Like the fact that the free end of the scoring spiral repeatedly snagged on being retracted.) Or does it mean that the study participants generated further design suggestions for the product? (Like ways to address the retraction problem.) Some of both? The email does not say.

Furthermore, even if we resolve this ambiguity to support TriReme's argument, and understand this statement to mean that the study participants generated "design inputs" for the device — *i.e.,* came up with ways to alter the prototype's design — this still leaves two critical points wholly to the work of inference. First, this would not mean that *Dr. Lotan* (as opposed to other study participants) generated "design inputs." Second, it would not mean that Dr. Lotan generated the specific "design input" of using a CTAS. All of which is to say that reading this email in the way that TriReme does, as corroborating the claim that Dr. Lotan conceived of the CTAS, requires multiple inferences from what the text of the email actually says.

The court thinks that this is too inferential. That it goes beyond reasonable and favorable inference into generative speculation. Stacked inferences and speculation do not generally raise issues for trial. *E.g., Largan Precision Co. v. Genius Elec. Optical Co.*, No. 13-CV-02502-JD, 2015 WL 2063988, at *3 (N.D. Cal. May 4, 2015), *aff'd,* 646 F. App'x 946 (Fed. Cir. 2016); *Jensen v. Sweet Home One Care Facility*, No. C 00-3261 VRW, 2005 WL 873310, at *11 (N.D. Cal. Jan. 31, 2005), *aff'd*, 180 F. App'x 703 (9th Cir. 2006).[75] In the specific context of patent-issue corroboration, too, the April 14, 2003 email recalls the following cases, in which the Federal Circuit has held that purportedly corroborating evidence, inexact on its face, did not raise clear and convincing proof of inventorship.

2.3.1 *Gemstar*

The Federal Circuit decided that an alleged co-inventor had not been wrongly omitted from a patent in *Gemstar*. 383 F.3d at 1381–83. The International Trade Commission had held in *Gemstar* that a patent was invalid for failing to join a co-inventor. *See id.* at 1381–83. The Federal Circuit reversed this decision, holding that the purported co-inventor's contribution had not been clearly and convincingly proved. *Id.* at 1382–83. The evidence supporting that contribution consisted mainly of the alleged co-inventor's own testimony and, as corroboration, "two product disclosure documents." *See id.* The latter "listed [the claimed co-inventor] by name" but "*did not explicitly state what subject matter [he] contributed*." *Id.* (emphasis added). In reasoning that applies to the April 14, 2003 email in this case, under the "rule of reason analysis," the Federal Circuit wrote:

> The product disclosures fail to explicitly identify Neil's contributions, and thus fail to show that Neil's contributions . . . were part of the invention . . . . Thus, even taken collectively, Neil's own testimony, technical background, and the ambiguous

[75] "[W]hile the non-movant is entitled on summary judgment to all reasonable inferences from the evidence it has presented, it is not entitled all possible inferences. The Court doubts that a reasonable jury could pile inference upon inference, as [plaintiff] urges." *Largan Precision*, 2015 WL 2063988 at *3 (citing, *inter alia*, *Nelson v. Pima Cmty. Coll.*, 83 F.3d 1075, 1081–82 (9th Cir.1996) ("[S]peculation do[es] not create a factual dispute for purposes of summary judgment.")); *see also Jensen*, 2005 WL 873310 at *11 ("Jensen appears to misinterpret a single isolated incident and then build inference upon inference in order to prove an evil conspiracy between defendants. This is not the type of probative evidence that suffices to raise a genuine issue of fact.").

> product disclosure documents fail to establish Neil's co-inventorship . . . by clear and convincing evidence.

Id. at 1383. The Federal Circuit thus reversed the Commission's decision that the inventor had been wrongly omitted.

The April 14, 2003 email is like the product disclosures deemed insufficient in *Gemstar*. Here, too, the email identified Dr. Lotan "by name," but "did not explicitly state what subject matter [he] contributed" to the invention; the email is at best "ambiguous" concerning anyone's contribution, moreover, and to read this document as suggesting that Dr. Lotan conceived of the CTAS needs several inferences that, again, float off into the airier realm of speculation.

2.3.2 *Symantec*

The Federal Circuit's decision in *Symantec* is similar. The appellate court there affirmed summary judgment against an allegedly omitted inventor's claim — holding, again, that the proffered corroboration did not amount to clear and convincing proof of inventorship. *Symantec*, 522 F.3d at 1285, 1295–96. To support his claim that he had contributed to the patent in question, the alleged co-inventor, Levin,

> submitted a declaration stating that he gave . . . Gray . . . , one of the named inventors of the patent, the idea for the . . . [patented] method in a . . . telephone call. To corroborate his declaration, Levin submitted Gray's day planner, which reflected Gray's notes confirming that the disputed telephone call took place.

Id. at 1295. "The district court found that the day planner entry was insufficient as corroborating evidence." *Id.* at 1296. "That entry . . . at most show[ed] only that [Levin and Gray] discussed the then-current state of the art." *Id.* (record quotation omitted). Like the product disclosures in *Gemstar*, however, and like the April 14, 2003 email in this case, the diary entry "*fail[ed] to explicitly identify* [Levin's] contribution." *Id.* (record quotation omitted) (emphasis added). The Federal Circuit "agree[d] with the district court that, at most, the day planner entry establishes that Gray and Levin spoke about the then-current state of anti-virus programs; *it does not establish that Levin contributed to the idea*." *Id.* at 1296 (emphasis added). The appeals court thus "affirm[ed]

the district court's conclusion that [the plaintiff] ha[d] failed to establish a genuine issue of material fact that he was a co-inventor of the [disputed] patent." *Id.*

The reasoning in *Symantec* is plainly relevant to determining the corroborative effect of the April 14, 2003 email. "[A]t most," the email shows that the study participants "discussed" "design inputs"; it does not "explicitly identify [Dr. Lotan's] contribution" of the CTAS or any other component of the device, and so "does not establish that [Dr. Lotan] contributed" to the subject invention.

2.3.3 *Lacks Industries*

Finally in this vein, helpful guidance lies in the Federal Circuit's infringement decision in *Lacks Industries.* The patents in *Lacks Industries* involved a method for making "automotive wheels that have a decorative cover attached to their outer face." *Lacks Industries*, 322 F.3d at 1338–39 (footnote omitted). The specific wheel in question was called an "F–150 wheel." *See id.* at 1344. For present purposes, the key part of the patented method in *Lacks Industries* had to do with how the wheel's decorative overlay was adhesively bonded to the rest of the wheel. *See id.* at 1339–40, 1348–49. The defendants, who had allegedly infringed the patent, claimed that their version of the wheel had been on sale more than one year before the patent filing, so that the allegedly infringed patent was barred under 35 U.S.C. 102(b). *Id.* at 1349. The trial court disagreed. It held that, although the defendants had indeed sold some type of wheel before the critical date, it was "insufficiently corroborated . . . that the defendants' device used the entire *claimed* method" of the relevant patent. *Id.* (emphasis in original). "Specifically," the trial court "found that [the defendants] . . . had not clearly and convincingly proven that their device . . . used partial, rather than full, adhesive coverage in securing" the decorative piece of the wheel. *Id.* The trial court thus held that the patented product was not barred by the defendants' prior sale. *Id.* at 1348–49.

The Federal Circuit affirmed. *Id.* at 1349–51. To determine whether the defendants had sufficiently corroborated their allegation of an on-sale bar, the appeals court applied the same rule-of-reason test that governs this case. *See id.* at 1349–50 (citing, *inter alia*, *Woodland Trust*, 148

F.3d at 1371). To support their claim that they had sold the same invention a year before the relevant patent filing, the *Lacks Industries* defendants mainly offered the minutes of a meeting and two corporate memoranda. *See id.* at 1350. The trial court found these "too general and incomplete" to corroborate the defendants' claim. *Id.* The minutes, for example, "contain[ed] no identification of the affiliation of [the author], no connection between the project being discussed and the unmentioned Hayes F 150 prototype wheels, *and no description of the adhesive application pattern or quantity*." *Id.* (emphasis added). Addressing the corroborating proof in its "totality," the trial court had held:

> [The defendants'] documentation is ***incomplete, ambiguous***, or contradictory . . . . [Their] proofs concerning the extent of adhesive coverage on its pre-critical date composite wheels are too ***incomplete, speculative***, uncorroborated and contradictory to fulfill their burden of establishing correlation with the ***claimed invention*** by clear and convincing evidence.

Id. at 1350–51 (first two emphases added). The Federal Circuit upheld this decision as containing "no reversible error." *Id.* at 1351.

Like the documents in *Lacks Industries*, the April 14, 2003 email in this case does not name Dr. Lotan as conceiving of the CTAS and does not describe his contribution to the CTAS — or, indeed, to any particular part of the prototype catheter.[76] The email is thus too "incomplete, ambiguous," and "speculative," with respect to Dr. Lotan's alleged contribution of or to the "claimed invention," to establish that contribution by clear and convincing proof.

* * *

The most that can be inferred from the April 14, 2003 email — even reading it most favorably to TriReme — is that Dr. Lotan made unspecified "design inputs" to the prototype catheter. The email does not imply that Dr. Lotan contributed specifically to the conception of the CTAS. Much less, in the light of governing precedent, does the email itself clearly and convincingly prove that Dr. Lotan came up with the CTAS idea.

The court is aware that no single piece of evidence need be definitive. The court is only pointing out the limits of what April 14, 2003 email supports, even when viewed in TriReme's

[76] *See* ECF No. 120-13.

favor. The court will consider it along with "all [other] pertinent evidence" under the rule-of-reason analysis.

2.4 AngioScore Spiral Balloon Study I

Dr. Meerkin's report summarizing the April 14, 2003 pig study — the "AngioScore Spiral Balloon Study I"[77] — likewise does not suggest that Dr. Lotan conceived of the CTAS or that he contributed to any particular element of the catheter. Dr. Meerkin's report noted that, on more than one occasion, the scoring spiral "dislodged from the balloon" upon retraction.[78] He wrote: "[T]he current bonding method is clearly inadequate and balloon retention of the spiral is a central issue. . . . Bonding of the proximal and distal edges [is] essential."[79] Dr. Lotan testified that this report's suggestion that both ends of the scoring spiral be fixed to the catheter reflected his recommendation that the proximal end, specifically, be bonded to the catheter shaft using a flexible, elastic attachment structure.[80]

This report says nothing about Dr. Lotan's contribution to the design of the catheter. It does not say, in particular, that Dr. Lotan conceived of bonding the proximal end with a compliant polymer that would compensate for the scoring spiral's movement during inflation and deflation.

The absence of any clear attribution to Dr. Lotan is reflected in the vague and halting language that TriReme's expert uses to describe this post-study report. In this regard the plaintiff's expert wrote:

> The porcine study report corroborates Lotan's inventorship because it shows he was aware of the problem and had a working context in which to find a solution. . . . The . . . report shows that Lotan had experienced the problem first hand. We also know that he had been considering design issues surrounding the proximal bond for some time and that Konstantino and Feld had consulted him repeatedly for his design input.[81]

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[77] ECF No. 119-28.

[78] *Id.* at 2–6.

[79] *Id.* at 6.

[80] Lotan Dep. – ECF No. 126-30 at 28–31, 40–41 (pp. 92–95, 141–42).

[81] Sheehan Rebuttal Rep. – ECF No. 126-4 at 43–44 (¶ 38).

This is accurate as far as it goes. Even read in TriReme's favor, though, this corroborates Dr. Lotan's inventive contribution in only the most partial and loose way. It is consistent with the claim that Dr. Lotan conceived of the CTAS, one might say, but it does not show that he did. To be "aware of [a] problem," even "firsthand," is not to "find a solution" to that problem. Furthermore, as both parties' experts recognize, Dr. Lotan himself testified that the post-study report does not mention using a CTAS to solve this problem.[82]

It would be essentially speculative to infer from "Spiral Balloon Study I" that Dr. Lotan contributed any particular element of the catheter — including the CTAS. This report does not itself provide clear and convincing corroboration that Dr. Lotan conceived of the CTAS. The court will read this piece of evidence along with the rest of the proffered material in assessing whether TriReme has raised a genuine issue for trial.

2.5 Dr. Tzori's Email Report After Cadaveric Leg Study

On April 24, 2003, Dr. Tzori emailed AngioScore's attorney reporting the results of a study of catheter prototypes on a human cadaver leg.[83] Nothing in this email suggests that any particular person conceived of any particular part of the balloon catheter. Nothing in this email shows that Dr. Lotan had the idea of using a CTAS. This email did perhaps three things of note. First, it identified the retraction problem that had bedeviled the prototype catheters: "The floating proximal ends of the devices," Dr. Tzori wrote, "were caught in the sheath's valve while being taken out."[84] Second, it mentioned the two basic approaches "to compensate for the movement of the proximal end" of the scoring spiral: Mr. Feld's preferred tack of building "sinuses" directly into the scoring metal; and attaching the near end of the spiral to the catheter with a "polymeric tube."[85] Third, the email attached a rough drawing of the balloon catheter that showed a

[82] *Id.* at 43 (¶ 35) ("[Dr.] Lotan confirmed in his deposition that the porcine study report does not disclose the compliance tube."); Parnell Rep. – ECF No. 120-5 at 46–47 (¶¶ 128–29, 136); Lotan Dep. – ECF No. 118-4 at 13–15 (pp. 61–63).

[83] Parnell Decl. Ex. P – ECF No. 120-23.

[84] *Id.* at 5.

[85] *Id.* at 2.

"polymeric spring" at the device's proximal end.[86] The email does not directly say or indirectly suggest who conceived of the "polymeric spring."[87]

2.6 Meeting Agenda — April 28, 2003

The meeting agenda does not corroborate Dr. Lotan's contribution to the CTAS.[88] The agenda shows only that AngioScore's patent counsel (who prepared the agenda) wondered about Dr. Lotan's and Dr. Meerkin's "[r]oles in product conception."[89] It does not mention the CTAS specifically. The agenda item only asks whether Dr. Meerkin or Dr. Lotan contributed to the device. It does not answer that question one way or the other.[90] It does not itself constitute proof that inclines the answer in either direction. To read this agenda item as affirmatively corroborating the claim that Dr. Lotan conceived of the CTAS would not be to draw an inference from the underlying proof in the usual sense of the term "inference." It would instead be to restate the question that is being placed — *Was the CTAS Dr. Lotan's idea?* — and to answer that question by fiat. It is not clear that Rule 56's favorable-inferences rule demands or even permits that sort of analytical diktat.[91]

That AngioScore's patent counsel wondered about Dr. Lotan's contribution may provide some general support for the possibility that he did so contribute, and the court will assess it accordingly in weighing all the corroborating evidence.

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[86] *Id.* at 10.

[87] *See id., passim*.

[88] *See* Parnell Decl. Ex. Q – ECF No. 120-25.

[89] *Id.* at 2.

[90] *See id.*

[91] "The [Supreme] Court's directive to weigh inferences in favor of the non-movant does not apply automatically . . . This 'inference favoritism' toward the nonmovant should occur only after a court has considered materials supporting and opposing a motion for summary judgment and has found that a clear 'choice of inferences' actually exists. . . . Whether a choice of inferences exists is itself a distinct issue and is a question for the judge, not the jury. Accordingly, while the idea of drawing inferences in favor of the party who opposes summary judgment has a firm basis in logic and authority, it does not apply in every case; rather it applies only in situations that present a true or clear 'choice of inferences.'" E. Brunet *et al*., *Summary Judgment: Federal Law and Practice* § 6:5 (Nov. 2016 update).

2.7 The May 2003 Consulting Agreement

TriReme suggests that a triable issue may lie in the 2003 consulting agreement between AngioScore and Dr. Lotan. (Opp. – ECF No. 127-3 at 25–26.) In its motion for summary judgment, AngioScore argued that the agreement refutes the claim that Dr. Lotan contributed the CTAS because, in the agreement, he did not list any relevant invention that he had made before May 1, 2003.[92] By failing to list any such inventions, AngioScore writes, Dr. Lotan "certified that he did *not* make" any "inventive contributions to the patents-in-suit."[93] TriReme responds:

> This is wrong. For example, Exhibit C to the agreement has a checkbox for "No inventions or improvements," which Dr. Lotan left blank. And, Dr. Lotan testified that he did not understand that his [alleged] contribution [to the CTAS] was something that needed to be listed. If anything, the May 2003 Consulting Agreement raises genuine issues of material fact.[94]

The court does not think that the consulting agreement affirmatively corroborates the claim that Dr. Lotan made an inventive contribution to the CTAS. Or, if it does corroborate that claim, it does so only in the weakest way. Even giving TriReme the benefit of a most favorable inference, and allowing that this document suggests that Dr. Lotan contributed something, the agreement in no way indicates exactly what he contributed. Even read this way, then, the agreement is like the product disclosures in *Gemstar* or the planner entry in *Symantec* — both of which were deemed crucially inexact. Though, in this respect, at least, in what it might imply about Dr. Lotan's contribution to the CTAS, the consulting agreement is even less precise than the material in those cases.

Perhaps the more basic answer, though, is that the court cannot say. Whether the consulting agreement supports or disproves Dr. Lotan's alleged contribution of the CTAS — or whether it has any effect in this respect — is not something that can be decided on summary judgment. Once again, the court will weigh this item in assessing whether the evidence, taken "as a whole," raises a genuine issue on inventorship.

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[92] Mot. – ECF No. 120-3 at 24.

[93] *Id.* (emphasis in original).

[94] Opp. – ECF No. 127-3 at 25–26 (record citations omitted).

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Taking all this "as a whole," the court does not think that TriReme has raised a genuine issue for trial. It is important to recall, first, that the ultimate quantum of proof here is clear and convincing evidence. That is TriReme's ultimate burden — and it informs the Rule 56 standard. *Anderson*, 477 U.S. at 254. Judging all the evidence in light of the relevant law — understanding that the declarations of Dr. Konstantino, Dr. Lotan, and Mr. Feld do not alone raise an issue for trial; that the testimony of other interested parties cannot alone corroborate Dr. Lotan's alleged contribution; and assessing the proffered documentary evidence against Federal Circuit precedent — the court concludes that TriReme has not raised a triable claim that it can prove Dr. Lotan's inventorship by clear and convincing proof. The court thus holds that AngioScore is entitled to summary judgment on the § 256 claims to correct inventorship on the patents in suit.

CONCLUSION

The court denies AngioScore's motion for summary judgment motion insofar as it contends that, by his consulting work after May 1, 2003, Dr. Lotan effected an assignment of his rights to AngioScore under § 9(b) of the 2003 consulting agreement. The court grants AngioScore's motion for summary judgment on the question of inventorship. TriReme has not raised a genuine issue for trial showing that it can establish Dr. Lotan's inventive contribution to the AngioSculpt balloon catheter by clear and convincing evidence. All three claims under 35 U.S.C. § 256 for correction of inventorship on the patents in suit are therefore dismissed with prejudice.

IT IS SO ORDERED.

Dated: March 9, 2017

LAUREL BEELER
United States Magistrate Judge