PUBLIC

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of **Illumina, Inc.,** **a corporation,** **and** **GRAIL, Inc.,** **a corporation.**	**DOCKET NO. 9401**

COMPLAINT COUNSEL'S OPPOSITION TO RESPONDENTS' MOTION *IN LIMINE* TO EXCLUDE EVIDENCE OF A FACT WITNESS'S DIVORCE PROCEEDINGS

Respondents Illumina, Inc. ("Illumina") and GRAIL, Inc. ("Grail") (collectively, "Respondents") seek to prevent Complaint Counsel from introducing any evidence of, or even referring to, a prior court order violation and breach of fiduciary duty committed by Illumina's Chief Executive Officer, Francis deSouza ("deSouza"). (Respondents' Motion *In Limine* to Exclude Evidence of a Fact Witness's Divorce Proceedings, at 1) ("Motion"). This evidence includes exhibit PX9225, which is a publicly available 2020 appellate court decision affirming a lower court's finding that Mr. deSouza violated a court order as well as his fiduciary duty to his spouse when, *inter alia*, he concealed his 2013 purchases of bitcoins and his use of intermediaries to make those purchases. (Exhibit A at 7).[1]

Respondents characterize this as "evidence regarding Mr. deSouza's divorce," which they argue "has no bearing on any fact at issue in this case and would serve no legitimate purpose in these proceedings." (Motion at 1). Complaint Counsel does not dispute that Mr. deSouza's

[1] Exhibit A is a published decision of California's First Appellate District that is publicly available online. (*See, e.g.*, Justia internet page titled "Marriage of DeSouza" at https://law.justia.com/cases/california/court-of-appeal/2020/a156311.html). .

divorce is not generally relevant. But Mr. deSouza is on both Respondents' and Complaint Counsel's final witness lists and a key topic of his trial testimony will likely be Respondents' proposed remedy of a long-term supply agreement. To the extent Mr. deSouza, as CEO of Illumina, testifies regarding Illumina's intent to abide by the proposed long-term supply agreement, then his prior violation of a court order and breach of fiduciary duty would be relevant evidence related to Mr. deSouza's character, credibility, and/or intent to abide by any proposed remedy. Conspicuously absent from Respondents' Motion is any commitment to forgo putting those matters in issue; indeed, Respondents deliberately elicited evidence on those matters during discovery. As such, Respondents fail to demonstrate that rebuttal evidence would clearly be inadmissible for all purposes, and the motion *in limine* should be denied.

I. Background

Complaint Counsel moves under Section 5(b) of the FTC Act, 15 U.S.C. § 45(b) and Section 11(b) of the Clayton Act, 15 U.S.C. § 21 (b) to block Illumina's proposed acquisition of Grail. (Complaint at p. 1). Illumina is a dominant provider of next-generation DNA sequencing ("NGS") platforms seeking to acquire one of its customers, Grail – a company developing multi-cancer early detection ("MCED") tests. (Complaint at ⁋ 1). Today, Grail's rivals are competing with Grail to innovate, develop, and commercialize MCED tests. (Complaint at ⁋ 4). These rivals, however, are also customers of Illumina and dependent on Illumina for the development and commercialization of their MCED tests. (Complaint at ⁋ 5). Post-merger, Illumina will have the incentive and ability to hobble Grail's rivals in the innovation race to the advantage of Grail and the disadvantage of Grail's rivals. (Complaint at ⁋ 11). By cutting the race short, or by making it significantly more difficult for Grail's rivals to compete, Illumina will win at the expense of

American consumers, who will have less choice, less innovation, and potentially higher prices for MCED tests. (Complaint ¶ 14).

Illumina responds by arguing that this merger will not be anticompetitive but even if it were, that it has provided an "open offer" – or long-term supply agreement – to its customers that will negate any competitive concerns. (*See* Answer at pp. 4-5). {[redacted]}[2] As the former Director of the FTC's Bureau of Competition, Bruce Hoffman, said in a speech, "conduct remedies that only address the ability to engage in anticompetitive behavior post-merger may not be sufficient to prevent competitive harm because people are smart – they will still have the incentive to engage in that behavior and they may find other ways to act on that incentive."[3]

As required by the Scheduling Order, both Respondents and Complaint Counsel have submitted their Final Witness Lists. (*See* Exhibits D, E). Both Final Witness Lists identify Mr. deSouza as a witness. Complaint Counsel has also submitted its exhibit list. (*See* Exhibit F). One of the exhibits listed was PX9225. (Exhibit A). PX9225 is a public California Appellate Court order upholding a lower court's finding that Mr. deSouza "violated the automatic restraining order and his fiduciary duties" by purchasing bitcoins and concealing key information regarding the nature of the bitcoin transaction. (Exhibit A at 7).

On August 4, 2021, counsel for Illumina asked Complaint Counsel to exclude this exhibit because "[e]vidence regarding [Mr. deSouza's] divorce has no bearing on any fact at issue in the

[2] *See, e.g.*,{[redacted]}
[3] Exhibit C (D. Bruce Hoffman, Vertical Merger Enforcement at the FTC, Credit Suisse 2018 Washington Perspectives Conference, Jan. 10, 2018).

case and would serve no legitimate purpose in these proceedings." (Exhibit G). Complaint Counsel explained that it was not Mr. deSouza's divorce that was relevant but rather his violation of his fiduciary duty and a court's order. (Exhibit G). Complaint Counsel offered to remove this document from the exhibit list to avoid mentioning Mr. deSouza's divorce if Respondents agreed to stipulate that "the First Appellate District of the State of California found that Mr. DeSouza violated his fiduciary duty to his wife by removing property from the marital estate." (Exhibit G). Respondents did not respond but filed this Motion to exclude both this exhibit as well as any mention of Mr. deSouza's divorce.

II. LEGAL STANDARD

Commission Rule of Practice 3.43(b) governs the admissibility of evidence in this proceeding and explains in part that "[r]elevant, material, and reliable evidence shall be admitted. Irrelevant, immaterial, and unreliable evidence shall be excluded. Evidence, even if relevant, may be excluded if its probative value is substantially outweighed by the danger of unfair prejudice, confusion of the issues, or if the evidence would be misleading, or based on considerations of undue delay, waste of time, or needless presentation of cumulative evidence." 16 C.F.R. § 3.43.

The Scheduling Order in this case further explains:

> Motions *in limine* are strongly discouraged. Motion *in limine* refers "to any motion, whether made before or during trial, to exclude anticipated prejudicial evidence before the evidence is actually offered." *In re Daniel Chapter One,* 2009 FTC LEXIS 85, *18-20 (Apr. 20, 2009) (citing *Luce v. United States*, 469 U.S. 38, 40 n.2 (1984)). ***Evidence should be excluded in advance of trial on a motion in limine only when the evidence is clearly inadmissible on all potential grounds***. *Id*. (citing *Hawthorne Partners v. AT&T Technologies, Inc.*, 831 F. Supp. 1398, 1400 (N.D. Ill. 1993); *Sec. Exch. Comm'n v. U.S. Environmental, Inc.*, 2002 U.S. Dist. LEXIS 19701, at *5-6 (S.D.N.Y. Oct. 16, 2002)).

(Scheduling Order, ¶ 13) (emphasis added). Respondents have failed to meet their burden to show that there are no ways in which this evidence could be admissible. Moreover, the risk of prejudice

from giving undue weight to such evidence is minimal in a bench trial such as this where the judge is capable of assigning appropriate weight to the evidence. (*Id.*). As such, Respondents' motion to exclude this evidence should be denied.[4]

III. ARGUMENT

According to the Court's Scheduling Order, "evidence should only be excluded in advance of trial if it is clearly inadmissible on all potential grounds." (Scheduling Order, ¶ 13). Here, testimony and documentary evidence (including PX9225) of Mr. deSouza's violation of a court order and his breach of fiduciary duty would be relevant and admissible to the extent that Respondents open the door in at least one of three ways. First, such evidence may be admissible to rebut Respondents' claims about Mr. deSouza's character and his intent to abide by the terms of Respondents' proposed open offer. Second, the evidence may be admissible to rebut any of Respondents' claims about Mr. deSouza's credibility as a witness. Third, the evidence may be admissible to rebut Respondents' claims that Illumina will actually abide by the terms of its open offer.

i. Respondents Have Put Mr. deSouza's Character at Issue in this Case

Respondents have, during the course of discovery, elicited testimony from fact witnesses regarding Mr. deSouza's character for truthfulness. For example, during the deposition of former Illumina executive {[redacted]}.[5] It is reasonable to assume that they may likewise attempt to introduce evidence of Mr. deSouza's character at the upcoming administrative hearing. Respondents ask this court to not only prevent Complaint Counsel from introducing

[5] {[redacted]}.

PX9225 into evidence but also to preclude Complaint Counsel from cross examining Mr. deSouza about the underlying breach of fiduciary duty.

While prior bad acts are generally inadmissible as character evidence, should Respondents introduce character evidence of their own, they will have "open[ed] the door" and rebuttal evidence of prior bad acts will be admissible, rebuttal character evidence. *Helfrich v. Lakeside Park Police Dept.*, 497 F. App'x. 500, 508 (6th Cir. 2021); Fed. R. Evid. 608(b). Moreover, extrinsic evidence – such as PX9225 – may be admissible for purposes such as impeachment. Committee Notes on 2003 Amendment to Fed. R. Evid. 608(b) ("By limiting the application of the Rule to proof of a witness' character for truthfulness, the amendment leaves the admissibility of extrinsic evidence offered for other grounds of impeachment (such as contradiction, prior inconsistent statement, bias and mental capacity)[.]"). It is premature, therefore, to exclude this evidence.

ii. As a Witness in the Administrative Hearing, Mr. deSouza's Credibility Is Relevant

"Matters affecting the credibility of the witness are always relevant in cross-examination." *United States v. Smalley*, 754 F.2d, 944, 951 (11th Cir. 1985). It is settled law that specific instances of conduct may be inquired into on cross-examination of a witness "for the purposes of attacking or supporting the witness' character for truthfulness." Fed. R. Evid. 608(b). Mr. deSouza's violation of a court order and his multiple breaches of his fiduciary duty are relevant topics of inquiry relevant to Mr. deSouza's credibility as a witness. *Nagy v. DeWese*, 2011 Wl 2565200, at *5 (E.D. Pa. June 23, 2011) (finding a witness's prior violation of his fiduciary duty probative as to that witness's credibility). Moreover, PX9225 itself may be admissible extrinsic evidence if Mr. deSouza admits that a court issued an order finding he violated his fiduciary duty.[6]

[6] It is reasonable to assume that Mr. deSouza will not deny the existence of the California Appellate Court's order. After all, it is well established case law that a court may take judicial notice of a prior Court's opinion. *Southern Cross Overseas Agencies, Inc. v. Wah Kwong Shipping Group Ltd.*, 181 F.3d 410, 426-27 (3d Cir. 1999).

See Carter v. Hewitt, 617 F.2d 961, 970 (3d Cir. 1980) (holding that extrinsic evidence of a specific act may be introduced during cross-examination if the witness does not deny the underlying act.).

iii. The Likelihood of Illumina Breaching the Terms of the Open Offer Are Highly Relevant

Although Complaint Counsel disagrees, Respondents have argued that Illumina's open offer would remedy any anticompetitive effect of this transaction. One issue in this administrative hearing is whether, and to what extent, Respondents would abide by the letter and spirit of the open offer despite their financial incentives to do otherwise. As such, Respondents have inquired during discovery {[redacted]}.[7] The First Appellate California Court of Appeal found that Mr. deSouza violated the court's order and his fiduciary duty to his wife by moving valuable community property out of the marital estate when it satisfied his financial incentives.[8] Pursuant to Federal Rule of Evidence 404(b), "Evidence of other crimes, wrongs, or acts . . . may, however, be admissible for other purposes, such as proof of motive, opportunity, intent, preparation, plan, knowledge, identity, or absence of mistake or accident." Fed. R. Evid. 404(b). Moreover, Mr. deSouza's prior acts directly impeaches Illumina claims that—by and through its executives—it will adhere to both the letter and spirit of its open offer despite financial incentives to do otherwise. Fed. R. Evid. 608(b).

CONCLUSION

There are multiple scenarios in which the document and topics at issue in Respondents' motion may be relevant. Despite this, Respondents argue that it should be excluded now because the prejudicial effect will outweigh any probative value. (Motion at 6-7). Without knowing the

[7] {[redacted]}
[8] *See generally*, Exhibit A.

precise circumstances as to when and how these documents will be used, it is premature to attempt to weigh their probative impact against any prejudicial effect. *In the Matter of LabMD, Inc.*, No. 9357, 2015 WL 1849042, at *3 (Apr. 16, 2015) (Chappell, J.). Given that Respondents have not and cannot show that the "subject documents are 'clearly inadmissible' for all purposes," and "it cannot be determined whether or not such probative value is outweighed by unfair prejudice or confusion of the issues" their motion to exclude should be denied. *Id.*

For the reasons stated above, Complaint Counsel respectfully requests that this Court deny Respondents' Motion *In Limine* to Exclude Evidence of a Fact Witness's Divorce Proceedings.

Date: August 18, 2021

Respectfully submitted,

/s/ Susan A. Musser

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[PROPOSED] ORDER

Upon Respondents' Motion *in Limine* to Exclude Evidence of a Fact Witness's Divorce Proceedings, it is hereby:

ORDERED that Respondents' motion is DENIED.

ORDERED:

D. Michael Chappell
Chief Administrative Law Judge

Date: August _____, 2021

Exhibit A

Filed 8/10/20; Certified for Publication 8/26/20 (order attached)

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIRST APPELLATE DISTRICT

DIVISION THREE

In re the Marriage of ERICA and FRANCIS DESOUZA.	
ERICA DESOUZA, Respondent, v. FRANCIS DESOUZA, Appellant.	A156311 (City & County of San Francisco Super. Ct. No. FDI12778498)

Francis DeSouza appeals from a post-judgment order finding he breached his fiduciary duty to his former wife Erica and ordering him to transfer bitcoins and other cryptocurrency to her pursuant to the parties' judgment of dissolution and to pay her attorneys' fees and costs.[1] Francis argues he did not breach his fiduciary duty because information he withheld about his cryptocurrency investments was not material and, alternatively,

[1] For clarity, we adopt the parties' practice of identifying themselves and other key actors by their first names. We intend no disrespect by this practice.

there was no substantial evidence his breach impaired Erica's interest in their community estate. Neither point has merit. We affirm.

BACKGROUND

I. Francis Invests in Bitcoins

In January 2013 Erica served Francis with a petition for dissolution of marriage, along with an automatic temporary restraining order that, among other things, prohibited him from "[t]ransferring, encumbering, hypothecating, concealing, or in any way disposing of any property, real or personal, whether community, quasi-community, or separate, without the written consent of the other party or an order of the court, except in the usual course of business or for the necessities of life."

In April 2013, Francis initiated three bitcoin-related transactions. On April 9 or 10, he wired $45,000 to Mt. Gox Company Ltd. (Mt. Gox), a Japanese bitcoin exchange, to purchase bitcoins. Francis never received any bitcoins for this money, nor recovered the transferred funds.

On April 10, 2013, Francis arranged for his friend and colleague Wences Casares to purchase 558.32 bitcoins from Mt. Gox for $99,451 on his behalf. Wences completed the purchase and transferred the bitcoins, along with an additional gift of five bitcoins (jointly, the Wences bitcoins), to Francis's digital wallet.[2]

On April 12, Francis had his associate Khaled Hassounah purchase an additional 498.89 bitcoins from Mt. Gox for $44,940

[2] A digital wallet is a secure storage method that can only be accessed by the holder of a private key.

(the Khaled bitcoins) on his behalf. Khaled was to transfer these bitcoins from his own Mt. Gox account to Francis's digital wallet. Although he bought the bitcoins as agreed, Khaled never completed the transfer and the 498.89 bitcoins remained with Mt. Gox.

In December 2013 and again in August 2014, Francis moved the Wences bitcoins from one digital wallet to another. In 2017 he learned that the Wences bitcoins had "forked," an automatic process that generates dividends from bitcoin holdings in the form of new currency, "bitcoin cash" and "bitcoin gold."

II. The Khaled Bitcoins Are Enmeshed in the Mt. Gox Bankruptcy

By April 2013, Mt. Gox was having regulatory difficulties with the U.S. government. On April 11 it briefly suspended trading. In June 2013 federal agents froze two bank accounts associated with the exchange and seized millions of dollars for its alleged failures to comply with federal regulations. Mt. Gox suspended withdrawals to be processed in U.S. dollars.

By late 2013 or early 2014, Mt. Gox lost hundreds of thousands of bitcoins to hacking, embezzlement, or both. Bitcoin expert Dr. Charles Evans testified for Erica that as early as March 2013, "anyone who was active on the Bitcoin discussion boards, anyone who was making an effort to get to know the Bitcoin community, knew that Mt. Gox was having trouble left, right, and sideways. [¶] And my personal opinion at the time was only an idiot would leave his Bitcoins on Mt. Gox." Dr. Evans reviewed emails between Francis, Khaled and Wences in the

spring of 2013. One such email from Wences to Francis advised him to "[b]uy your Bitcoins on Mt. Gox, then get the Bitcoins off and put them intoBlockchain.info," and led Dr. Evans to conclude Francis was aware of the problems with Mt. Gox when he arranged his proxy purchases in April 2013.[3]

Francis discovered by December 2013 that he could not get the Khaled bitcoins out of Mt. Gox. In February 2014, Mt. Gox halted all withdrawals and filed for bankruptcy. By May 2014, Francis knew of the bankruptcy. He hoped the situation would get resolved but made no effort to recover the Khaled bitcoins or

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[3] In his written report, Dr. Evans elaborated that "Hack #I took place beginning as far back as 2011 through the time that MtGOX ceased operation. According to MtGOX CEO, Mark Karpeles, hackers siphoned off approximately 750,000 bitcoins held in reserve for customer accounts along with 100,000 of MtGOX's own bitcoins. This amounted to between 6% and 7% of the total number of all the bitcoins in circulation at that time, worth approximately $7.25 billion at current prices as of the date of this report.

Whether Hack # I indeed was a hack, in the sense of an external breach, or it was an 'inside job', remains the subject of speculation among persons who are interested in the MtGOX saga. Relevant here is not whether the theft was committed by external or internal actors, but that it was widely recognized that MtGOX was an accidental success, and its founder and chief executive was in over his head, as evidenced by email from Wences Casares to Francis DeSouza dated 22 March 2013, in which Casares instructed DeSouza, 'To buy bitcoin open an account at mtgox.com . . . To store and use bitcoins open an account at blockchain.info." . . . [¶] • Hack #2 took place in March 2014, concurrent with MtGOX's bankruptcy filing. In this instance, the hackers released a file called MtGox2014Leak.zip that they claimed was a database of MtGOX transaction records, with users' personal data intentionally removed.' "

the initial $45,000 he wired to Mt. Gox, which were tied up in the bankruptcy. He testified, "[t]here wasn't much money when they went bankrupt, so at the point it wasn't worth chasing them for little money, and now there's nobody to chase." Eventually Khaled filed a proof of claim in bankruptcy for the 498.8 bitcoins, which were still in his name, on Francis's behalf.

Francis filed his preliminary schedule of assets and debts in the divorce action in February 2014 and his final disclosure in July 2016. Both schedules disclosed his ownership of 1,062.21 bitcoins.

The parties' property issues were tried in February 2017. In September 2017 the court issued a final statement of decision, found the Wences and Khaled bitcoins to be community property and ordered them divided evenly in kind between the parties, along with any derivative cryptocurrency.

After entry of the dissolution judgment on December 8, 2017, Erica sought her half of the community bitcoins. Only then did Francis disclose that the Khaled bitcoins were tied up in the Mt. Gox bankruptcy. On December 18, 2017, the day after bitcoin's value hit a high of $19,783.06, Francis divulged that he possessed only 613.53 of the 1062.21 community bitcoins. In a December 22, 2017 email to his attorney copied to Erica's counsel, Francis wrote that "[t]he exchange I was using to buy bitcoins, Mt Gox, was hacked and then went bankrupt. I was able to take

out 613.53 bitcoins."[4] Francis had also failed to inform Erica prior to the judgment that he used Wences and Khaled as proxies for his bitcoin purchases, that bitcoin cash and gold had been generated from the bitcoin investments, and that he transferred of cryptocurrency between digital wallets.

On December 31, 2017, the price of bitcoin was $13,500. The Khaled bitcoins had appreciated from their initial purchase price of approximately $45,000 to around $8 million.

III. Erica Seeks Post-Judgment Relief

In January 2018 Erica moved for an emergency order compelling Francis to immediately transfer her full interest in community bitcoins to her and for remedies afforded by the Family Code for his failure to timely and adequately disclose information about the bitcoin investments. Following a January 12, 2018 hearing the court ordered Francis to immediately transfer to Erica half of the 613.53 bitcoins and associated bitcoin cash and gold he had in his possession, to show cause why he should not be ordered to transfer an additional 224.34 bitcoins and proportional cryptocurrency, and to pay Erica's attorney's fees and costs pursuant to Family Code sections 721 and 1100. It is undisputed that Francis transferred 306.765 bitcoins to Erica in order to comply with the first part of the court's order.

Erica's request for order was tried over four days between June and August 2018. On October 19 the court issued its final

[4] Apparently a "forking" event in August 2017 added 50.205 bitcoins to the bitcoins Wences purchased for Francis, resulting in the 613.53 figure he reported in December 2017.

statement of decision finding that Francis committed a series of transgressions surrounding his purchase and handling of the bitcoins. The court found Francis violated the automatic restraining order and his fiduciary duties when, without Erica's knowledge or agreement, he sent $45,000 to Mt. Gox to purchase bitcoins, committed additional community funds so that Wences and Khaled could purchase bitcoins on his behalf, and moved the Wences bitcoins between bitcoin wallets. The court further found that while Francis possessed documentation of the proxy purchases since April 2013, he "not only refused to disclose, but affirmatively hid from [Erica] their involvement until February 9, 2018."

In addition to concealing his bitcoin purchases and use of proxies, Francis's failure to inform Erica about the Mt. Gox bankruptcy further breached his fiduciary duty. "This was a material fact he should have disclosed to [Erica]. Had he disclosed these important facts [Erica] would have had the ability to object to a division in kind of the bitcoins and/or protect her interest in the bitcoins by requesting the Court to use its equitable powers to protect her from [Francis's] decision to purchase the bitcoins as he did which tied up a substantial portion in bankruptcy." Francis again breached his fiduciary duty when he failed to list the $45,000 sent to Mt. Gox in either of his declarations of disclosure, failed to file a bankruptcy claim for those funds, withheld information about his bitcoin investments during discovery, failed to produce and falsely

denied having documentation related to the bitcoins, and failed to disclose the cryptocurrency generated by forks.

The court ordered Francis to transfer $22,500 in cash and 249.445 additional bitcoins to Erica, along with the corresponding bitcoin gold and bitcoin cash. Francis was also ordered to pay Erica's attorneys' fees and costs incurred in bringing her motion.

Francis filed a timely appeal after the court denied his new trial motion.

DISCUSSION

I. Legal Principles

Family Code section 721[5] "recognizes the confidential relationship held by spouses. That relationship is a fiduciary

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[5] With exceptions not relevant here, subdivision (b) of Family Code, section 721 provides that "in transactions between themselves, spouses are subject to the general rules governing fiduciary relationships that control the actions of persons occupying confidential relations with each other. This confidential relationship imposes a duty of the highest good faith and fair dealing on each spouse, and neither shall take any unfair advantage of the other. This confidential relationship is a fiduciary relationship subject to the same rights and duties of nonmarital business partners, as provided in Sections 16403, 16404, and 16503 of the Corporations Code, including, but not limited to, the following:

(1) Providing each spouse access at all times to any books kept regarding a transaction for the purposes of inspection and copying.¶ (2) Rendering upon request, true and full information of all things affecting any transaction that concerns the community property. Nothing in this section is intended to impose a duty for either spouse to keep detailed books and records of community property transactions. ¶(3) Accounting to the spouse, and holding as a trustee, any benefit or profit derived

relationship 'impos[ing] a duty of the highest good faith and fair dealing on each spouse[.]' [Citation.] Also within that division, section 1100 addresses management and control of community property. Subdivision (e) of section 1100 provides: 'Each spouse shall act with respect to the other spouse in the management and control of the community assets and liabilities in accordance with the general rules governing fiduciary relationships which control the actions of persons having relationships of personal confidence as specified in Section 721, until such time as the assets and liabilities have been divided by the parties or by a court. This duty includes the obligation to make full disclosure to the other spouse of all material facts and information regarding the existence, characterization, and valuation of all assets in which the community has or may have an interest and debts for which the community is or may be liable, and to provide equal access to all information, records, and books that pertain to the value and character of those assets and debts, upon request.'" (*In re Schleich* (2017) 8 Cal.App.5th 267, 276-277 (*Schleich).*)

This fiduciary duty continues after separation, including "the accurate and complete disclosure of all assets and liabilities in which the party has or may have an interest or obligation and all current earnings, accumulations, and expenses, including an immediate, full, and accurate update or augmentation to the extent there have been material changes." (§ 2012, subd. (a)(1).)

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from any transaction by one spouse without the consent of the other spouse that concerns the community property.

Further statutory citations are to the Family Code.

"Taken together, these Family Code provisions impose on a managing spouse affirmative, wide-ranging duties to disclose and account for the existence, valuation, and disposition of all community assets from the date of separation through final division. These statutes obligate a managing spouse to disclose soon after separation all the property that belongs or might belong to the community, and its value, and then to account for the management of that property, revealing any material changes in the community estate, such as the transfer or loss of assets. This strict transparency both discourages unfair dealing and empowers the nonmanaging spouse to remedy any breach of fiduciary duty by giving that spouse the 'information concerning the [community's] business' needed for the exercise of his or her rights [citation], including the right to pursue a claim for 'impairment to' his or her interest in the community estate [citation]." (*In re Marriage of Prentis-Margulis & Margulis* (2011) 198 Cal.App.4th 1252, 1270-1271 (*Margulis*).)

Section 1101 thus affords each spouse a claim against the other for any breach of fiduciary duty that results in an impairment to his or her interest in the community estate, "including, but not limited to, a single transaction or a pattern or series of transactions, which transaction or transactions have caused or will cause a detrimental impact" to the claimant spouse's interest in the community estate. (§1101, subd. (a).) Remedies for a breach of this duty that impairs another spouse's interest in the community estate include "an award to the other spouse of 50 percent, or an amount equal to 50 percent, of any

asset undisclosed or transferred in breach of the fiduciary duty plus attorney's fees and court costs." (§1101, subs. (a), (g).)

Our courts have varied in stating the standard of review that applies when the trier of fact has found a breach of this duty. (See *In re Marriage of Kamgar* (2017) 18 Cal.App.5th 136, 144 (*Kamgar*) [substantial evidence]; *Schleich, supra,* 8 Cal.App.5th at pp. 283-284 [abuse of discretion].) The difference in approach does not matter here. "The abuse of discretion standard is not a unified standard; the deference it calls for varies according to the aspect of a trial court's ruling under review. The trial court's findings of fact are reviewed for substantial evidence, its conclusions of law are reviewed de novo, and its application of the law to the facts is reversible only if arbitrary and capricious." (*Haraguchi v. Superior Court* (2008) 43 Cal.4th 706, 711-712.) " 'When a trial court's factual determination is attacked on the ground that there is no substantial evidence to sustain it, the power of an appellate court begins and ends with the determination as to whether, on the entire record, there is substantial evidence, contradicted or uncontradicted, which will support the determination, and when two or more inferences can reasonably be, or deduced from the facts, a reviewing court is without power to substitute its deductions for those of the trial court. If such substantial evidence be found, it is of no consequence that the trial court believing other evidence, or drawing other reasonable inferences, might have reached a contrary conclusion.' " (*In re Marriage of Goodwin-Mitchell & Mitchell* (2019) 40 Cal.App.5th 232, 238-239.)

II. Materiality

As noted in *Schleich, supra,* 8 Cal.App.5th at pp. 276-277, subdivision (e) of section 1100 requires each spouse to fully disclose all material facts regarding community assets. Francis argues his failure to fully inform Erica about the bitcoin investments was not "material" within the meaning of this provision because "no evidence suggested Erica's knowledge of this information would have affected her decision-making in the least." The court's contrary finding is supported by substantial evidence and within its discretion.

The court found the suspension and bankruptcy of Mt. Gox less than a year after Francis used community funds and proxies to purchase bitcoins from the exchange "substantially impaired [Erica's] undivided one-half interest in the community Bitcoin estate. She was unable to sell or transfer a substantial portion of her bitcoins. The purchase made by Wences was previously transferred to [Francis's] blockchain wallet but Khaled's purchase and the $45,000 deposit by [Francis] are subject to the bankruptcy and are inaccessible and if [Erica] were ever to receive some or all of her bitcoins or the cash it most likely will be at a significant loss, or even turn out to be worthless." The court further found that Francis's 2014 and 2015 declarations of disclosure listed the total amount of his bitcoin purchases, but failed to disclose that 498 of those 1062.21 bitcoins were (1) purchased by and still in Khaled's nominal possession; and (2) tied up in the Mt. Gox bankruptcy. These facts, the court found, were material. "Had he disclosed these important facts [Erica]

would have had the ability to object to a division in kind of the [total] bitcoins and/or protect her interest in the bitcoins by requesting the Court use its equitable powers to protect her from [Francis's] unilateral decision to purchase the bitcoins."

Francis asserts the evidence that Erica generally took no interest in the couple's finances during or after their marriage proved that she would not have done anything to protect her interest in the bitcoin investments had he informed her about them. The trial court reasonably disagreed. Erica's lack of involvement or interest in the couple's finances before they separated is undisputed, but it sheds little if any light on what she would do to protect her financial interests after retaining divorce counsel, filing for divorce, and serving Francis with restraining orders that barred him from making unilateral decisions involving the community estate. Even Francis acknowledges in his reply brief the "general validity" of Erica's point that " [a] spouse who may be reliant on and trusting of the other during marriage, may well exercise independent judgment and rely on new advisors after separation. Indeed.

Nor did Francis's evidence compel the court to accept his view that Erica "continued her indifference to issues surrounding the community's investments" after the parties separated. His support for this characterization consists of his own conclusory testimony to that effect and one post-separation incident in which Erica agreed to his request to invest $50,000 of community funds in a friend's company. None of this, plainly, compels a finding that Erica would have done nothing throughout years of

divorce litigation to preserve her interest in an investment that was worth millions of dollars by the time the property judgment issued.

Francis more specifically asserts that his failure to disclose his initial purchase of bitcoins is immaterial because "the court did not base its Family Code section 1101, subdivision (g) award on a finding that Francis had breached his fiduciary duty by failing to disclose his investment to Erica beforehand, or for that matter by keeping the Khaled bitcoins at Mt. Gox or by employing proxies to purchase bitcoins." Rather, he maintains, the findings of breach "[a]t most" "related to [his] failure to tell Erica at various times *well after* he purchased the bitcoins about his use of proxies and the Mt. Gox bankruptcy." Not so. The court expressly (and nonexclusively) found that Francis "breached his fiduciary duties to [Erica] *when he purchased the bitcoins in 2013*. . . ." (Italics added.) And it found the Mt. Gox suspension and bankruptcy "substantially impaired" Erica's interest in the Khaled bitcoins by rendering them inaccessible and potentially worthless. "[T]hese facts were clearly 'material' information that should have been made known" to her. Francis's distortion of the court's express findings does not help him.

Neither does his suggestion he cannot be faulted for failing to disclose the Mt. Gox bankruptcy because, although he received a notice of bankruptcy in May 2014, he testified that he was unaware the Khaled bitcoins were caught up in it before Khaled told him in December 2017. The trial court expressly disbelieved

this testimony. "Given the fact that Khaled testified that he worked with [Francis's] brother for a period of at least ten years and had not only socialized with Francis, but had traveled with him too, it is more likely than not that [Francis] knew of the loss of bitcoins to bankruptcy earlier than December 2017." We will not second guess the court's credibility assessment. (*Thompson v. Asimos* (2016) 6 Cal.App.5th 970, 981.)

The court's finding that Francis failed to disclose material information about his bitcoin investments is supported by substantial evidence and within its broad discretion.

III. Impairment

Francis argues that, even if he failed to disclose material information, his disclosure caused no impairment to Erica's community interest because, even with the Khaled bitcoins tied up in the Mt. Gox bankruptcy, the Wences bitcoins "earned millions of dollars for the community, thereby greatly enriching, not impairing, the community estate." Again, the trial court reasonably disagreed. True, the bitcoins Wences purchased for Francis and moved out of Mt. Gox before the bankruptcy grew from an initial value of roughly $100,000 to around $3.45 million by August 2018.[6] But the financial success of one undisclosed investment does not erase the harm to the community estate, and Erica, occasioned by a separate undisclosed transaction.

In re Marriage of Feldman (2007) 153 Cal.App.4th 1470, 1483 (*Feldman*) is instructive. There, a husband contended his

[6] Francis does not dispute his liability to the community for the initial $45,000 wired to Mt. Gox.

failure to include a $1 million bond in his financial disclosures in violation of section 2102, subdivision (a)(1) was excused by his failure to include the corresponding debt he incurred to finance the bond's purchase. The contention was unavailing. As the appellate court observed, "[t]he statutory policy in favor of disclosure contains no exception for debts and assets that offset each other, and [Husband] has cited no authority to support such a position." (*Ibid*.) So too here. Francis attempts to distinguish *Feldman* on the ground it addresses sanctions for failures to comply with financial disclosure obligations under section 2102 rather than spousal liability for fiduciary breaches more generally, but the distinction is immaterial. As observed in *Margulis, supra,* 198 Cal.App.4th at p. 1270, section 2102, together with sections 721, 1100 and 1101, is part of the integrated statutory scheme that implements the policy of fiduciary care by imposing "wide-ranging duties to disclose and account for the existence, valuation, and disposition of all community assets from the date of separation through final division." (*Ibid*.) The statutory policy at issue in *Feldman,* therefore, is equally compelling here. Alternatively, Francis insists the Khaled and Wences' bitcoins were merely two facets of one unitary investment and, therefore, he cannot be penalized for one and not credited for the other. But the trial reasonably court drew a different inference from the evidence, so we will not disturb it.

Lastly, Francis's contention that his nondisclosures did not *cause* the bankruptcy and resulting devaluation of the Khaled

bitcoins largely rests on and reiterates his argument that the nondisclosures were immaterial. Accordingly, it fails for the same reasons. In any event, nothing in the trial court's order suggests its findings are premised on such an unlikely surmise.

DISPOSITION

The order is affirmed.

_____
Siggins, P.J.

WE CONCUR:

_____
Fujisaki, J.

_____
Petrou, J.

Filed 8/26/20

CERTIFIED FOR PUBLICATION

IN THE COURT OF APPEAL OF THE STATE OF CALIFORNIA

FIRST APPELLATE DISTRICT

DIVISION THREE

In re the Marriage of ERICA and FRANCIS DESOUZA.	
ERICA DESOUZA, Respondent, v. FRANCIS DESOUZA, Appellant.	A156311 (City & County of San Francisco Super. Ct. No. FDI12778498)

BY THE COURT:

The opinion in the above-entitled matter filed on August 10, 2020, was not certified for publication in the Official Reports. For good cause, the request for publication filed August 26, 2020 is granted.

Pursuant to California Rules of Court, rules 8.1120 and 8.1105(c)(2), the opinion in the above-entitled matter is ordered certified for publication in the Official Reports.

Dated: _____ _____P.J.

Trial Court:	San Francisco County
Trial Judge:	Hon. Richard C. Berra
Attorneys:	Philip S. Silvestry, Gregory R. Ellis for Appellant.
	Samantha Bley DeJean, Juliana Yanez, Robert A. Olson, Eleanor S. Ruth for Respondent.

Exhibit B

(CONFIDENTIAL – REDACTED IN ENTIRETY)

Exhibit C

Federal Trade Commission

Credit Suisse 2018 Washington Perspectives Conference
Washington, D.C.

Vertical Merger Enforcement at the FTC
(as prepared for delivery)

Remarks of D. Bruce Hoffman[1]
Acting Director, Bureau of Competition
January 10, 2018

Contrary to a popular view in the business press (especially prior to the Department Of Justice's recent challenge to the AT&T/TimeWarner acquisition), vertical merger review has been and continues to be a meaningful and important part of FTC (and DOJ) merger enforcement. Although vertical merger challenges are less common than horizontal merger challenges, they are not black swans: since 2000, the FTC and DOJ have challenged 22 vertical mergers – about one per year. We have several investigations involving vertical transactions going on right now, so this topic is timely and very relevant to current enforcement priorities.

That said, vertical merger enforcement is still a small part of our merger workload. Each year, the federal antitrust agencies together bring between 30 and 40 merger challenges (the average since 2000 has been 39, according to annual HSR reports).[2] The vast majority of these actions involve horizontal mergers, and most of those are resolved by a settlement. So one could wonder: what accounts for the lower levels of vertical merger enforcement relative to horizontal merger enforcement? To answer that question, I will address three points: first, what are the key differences—from an enforcement perspective—between horizontal and vertical mergers; second, what facts might cause us to pursue enforcement in a vertical merger; and third, what types of remedies do we look for in vertical mergers?

Before I turn to those three topics, however, let me make a few preliminary remarks. To begin with, while I am going to describe the ways in which vertical merger enforcement is different from horizontal merger enforcement, it is important to recall that in many ways, they are the same. Specifically, the agencies rely on the same broad analytical tools to evaluate

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[1] The views stated here are my own and do not necessarily reflect the views of the Commission or of any Commissioner.

[2] HSR Annual Reports are available at https://www.ftc.gov/policy/reports/policy-reports/annual-competition-reports. See also Steven Salop, Invigorating Vertical Merger Enforcement (Sept. 26, 2017) (30-50 horizontal merger challenges annually), available at https://ssrn.com/abstract=3052332.

horizontal and vertical mergers—we define markets, test theories of harm, and evaluate efficiencies. Each deal is evaluated on the merits, and our review is highly fact-specific, within the framework of the law and our best (and ever-evolving) economic understanding.

Along those lines, it's also worth noting that while it's important for antitrust enforcement to be predictable, predictability is not in and of itself the only measure of effective enforcement. For example, some commentators have recently urged the adoption of more stringent bright-line rules for mergers, including outright prohibitions on many mergers without considering whether those mergers would produce anticompetitive effects. Such a policy would certainly increase predictability, but it would not be good competition policy—rather, it would be harmful to the economy and to consumers. In 1914 when it passed the Clayton Act and the Federal Trade Commission Act, Congress rejected demands to create a laundry list of prohibited conduct, in favor of flexible standards that could adapt to changing markets. In fact, a great strength of U.S. antitrust law is the broad scope of statutes and the resulting ability of enforcement policy to evolve along with developments in legal and economic understanding. As intended, antitrust law has evolved, and while not perfect, our understanding of the risks of harm to competition becomes more sophisticated as economic learning grows in predictive power. We continue to deepen our understanding of how antitrust enforcement enhances consumer welfare by preventing mergers that are likely to result in competitive harm.

Ultimately, antitrust enforcement is law enforcement. As I mentioned a minute ago, it is governed by statutes, and those statutes dictate the focus of our inquiry into mergers. Section 7 of the Clayton Act, the primary statute implicated in merger enforcement, prohibits mergers "where the effect of such acquisition may be substantially to lessen competition, or to tend to create a monopoly." Section One of the Sherman Act, which can also be implicated, prohibits certain agreements "in restraint of trade," and Section Two of the Sherman Act applies to "monopolization." These statutes have in common a core command that the harmful effect we must police is harm to competition—which we analyze in the context of reductions to consumer welfare. In the merger context, anticompetitive effects are those that threaten to directly reduce, or that flow from a reduction in, competition.

Thus, as antitrust enforcers, we are not price police. Nor are we tasked with maintaining any particular market structure. Rather, on a case-by-case basis and through enforcement and common law development, we apply antitrust policy to fit changing markets. Antitrust enforcement is not industrial policy.

With that background, let me turn back to vertical mergers.

What's Different About Vertical Mergers

Horizontal mergers combine competitors. By definition, a merger of competitors directly and necessarily reduces competition by eliminating a substitute. There is a strong theoretical basis for horizontal enforcement because economic models predict at least nominal potential for anticompetitive effects due to elimination of horizontal competition between substitutes.

In contrast, vertical mergers do not combine substitutes, and in fact often involve complements, such as a product plus distribution or a critical input to a complex device. Where horizontal mergers reduce competition on their face—though that reduction could be minimal or more than offset by benefits—vertical mergers do not. Instead, to determine whether a vertical merger threatens competitive harm requires predictions about the post-merger conduct of the merged firm where theoretical predictions are ambiguous.[3] As Professor Steve Salop has catalogued, and as I discuss in more detail in a few minutes, there are plenty of theories of anticompetitive harm from vertical mergers.[4] But the problem is that those theories don't generally predict harm from vertical mergers; they simply show that harm is possible under certain conditions.

Moreover, while efficiencies are often important in horizontal mergers, they are much more intrinsic to a vertical transaction due to the cost-reducing effects of most vertical mergers, at least in the abstract. Due to the elimination of double-marginalization and the resulting downward pressure on prices, vertical mergers come with a more built-in likelihood of improving competition than horizontal mergers.

As a result, the biggest challenge in assessing the likely competitive effect from a vertical merger is forecasting the net price effect. From an economist's point of view, vertical integration reduces or eliminates transaction costs and allows for profit maximizing over a larger set of complementary products. As compared to arms-length contracting, a vertically integrated firm can more readily realize efficiencies in the form of lower costs or improved quality, conditions that greatly benefit customers of the firm. In addition, vertical mergers can eliminate the problem of "double markup," which occurs when two firms, each with market power over a complementary product, set prices independently. Due to the problem of double markup, separate price setting leads to a higher prices and lower levels of output. A vertical merger of these two firms allows for joint price setting over the two products, which leads to higher profits but also increased output. These built-in effects, while not necessarily large or dispositive in all cases, render the starting point for our analysis of vertical mergers more challenging than horizontal mergers.

Unfortunately, compared to horizontal mergers, there are also fewer quantitative theoretical models that we can use to attempt to predict outcomes in vertical scenarios, and the models that exist have a far shorter track record than those used in assessing horizontal mergers.[5] As a result, we mainly rely on standard sources of evidence, that is, documents and witness testimony. However, those sources of evidence, in addition to being highly idiosyncratic for each transaction, also tend to be non-public, and thus difficult for outside observers to assess when attempting to predict or critique our enforcement decisions.

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[3] See D. Reiffen & M. Vita, "Is There New Thinking on Vertical Mergers?" 63 Antitrust L.J. 917 (1995).
[4] See S. Salop and D. Culley, "Potential Competitive Effects of Vertical Mergers: A How-To Guide for Practitioners," (Dec. 8, 2014), available at http://scholarship.law.georgetown.edu/facpub/1392/.
[5] Examples include so-called "vertical arithmetic," which was used in the FCC's review of Comcast/NBC-Universal, and "vGUPPIs," which attempt to score the upward pricing pressure from input foreclosure. See J. Baker, "Comcast/NBCU: The FCC Provides a Roadmap for Vertical Merger Analysis," *Antitrust,* Vol. 25, No. 2 (Spring 2011); S. Moresi & S. Salop, "vGUPPI: Scoring Unilateral Pricing Incentives in Vertical Mergers, 79 Antitrust L.J. 185 (2013).

These theoretical issues are important. But empirical data is also very important. Here, empirical work has tended to show that vertical mergers (and vertical restraints) are typically procompetitive. For example, in a review of multiple studies of vertical mergers and restraints, economists found only one example where vertical integration harmed consumers, and multiple examples where vertical integration unambiguously benefited consumers.[6] I don't want to read too much into a limited number of studies, but the empirical work certainly does not suggest that there is a basis for inherent skepticism toward vertical mergers.

To summarize, overall there is a broad consensus in competition policy and economic theory that the majority of vertical mergers are beneficial because they reduce costs and increase the intensity of interbrand competition. That consensus has support in the empirical research. Does that mean all vertical mergers are benign? No, it doesn't.

What Are Theories of Harm From Vertical Mergers?

So, let me turn now to what facts might lead us to consider enforcement action in vertical mergers. In a broad sense, the antitrust focus in vertical merger review asks if the vertically integrated firm is likely to exclude or collude. Without providing a catalog of all possible theories (because this has been done by others—see former Deputy Assistant Attorney General Jon Sallet's 2016 "The Interesting Case of the Vertical Merger,"[7] and Steve Salop and Daniel Culley's "Potential Competitive Effects of Vertical Mergers: A How-To Guide for Practitioners"[8]), I will focus on three theories of vertical harm the FTC has used to challenge a vertical merger. For antitrust practitioners, much of this will be familiar—a bit of "everything old is new again"—though in a slightly different way.

1. A vertical merger may reduce the likelihood of beneficial entry

In the past, for instance as expressed in the 1984 Non-Horizontal Guidelines,[9] the main concern about vertical mergers was that, post-merger market conditions could deter or prevent entry because it would require firms to enter at both levels—so-called two-stage entry. Today, we are still concerned about how entry could occur post-merger, but now we are interested in cases in which the firms are most likely to enter each other's market—something akin to a special case of potential competition. We look at whether there is something about the markets at issue—something like assets, know-how, or reputation— that indicates that having a presence in another vertically-related market or in another part of the distribution chain makes it inherently more likely or easier for the merging firms to enter each other's markets, as compared to de novo entry by another firm. We also look at entry facilitation; that is, whether prior to the

[6] J. Cooper, et al, "Vertical antitrust policy as a problem of inference," 23-7 Int. J. of Industrial Org. (2005). See also F. Lafontaine and M. Slade, "Exclusive Contracts and Vertical Restraints: Empirical Evidence and Public Policy," Handbook of Antitrust Economics (2008).
[7] Available at https://www.justice.gov/opa/speech/deputy-assistant-attorney-general-jon-sallet-antitrust-division-delivers-remarks-american.
[8] Available at http://scholarship.law.georgetown.edu/cgi/viewcontent.cgi?article=2404&context=facpub
[9] The Non-horizontal Guidelines were included in DOJ's 1984 Merger Guidelines, and are available at https://www.justice.gov/atr/non-horizontal-merger-guidelines. While the DOJ and FTC have updated the Guidelines as they relate to horizontal mergers several times since then, most recently in 2010, the Non-horizontal Guidelines have not been updated since 1984, and do not provide useful guidance for vertical mergers today.

merger, one firm had an incentive to sponsor entry, and absent the merger, that the firm would have partnered with another company to enter into the markets of the acquiring firm.[10]

As an example of an FTC case involving both types of entry concerns, in 2002 the FTC moved to block the merger of Digene Corporation and Cytyc Corporation, two companies working to develop screening tests for cervical cancer.[11] At the time, Digene was the only company selling a DNA-based test for the human papillomavirus (HPV), the leading cause of cervical cancer. Cytyc sold 93% of U.S. liquid-based Pap tests, which was the principal screening test for cervical cancer. These were complementary products; at the time, the firms did not compete directly. The deal would eliminate Digene's incentive to cooperate with Cytyc's rivals, who needed access to Digene's product and also Digene cooperation to obtain FDA approval. That was the entry facilitation concern. We were also concerned that Digene might enter Cytyc's market on its own, that is, develop a DNA-based test for cervical cancer that would compete with Pap tests. After the Commission voted unanimously to block the merger, purely over vertical concerns, the parties abandoned the transaction.

2. A vertical merger may result in anticompetitive foreclosure

Outside of the merger context, U.S. antitrust law has long been concerned about foreclosure.[12] Since 1950, when Congress amended Section 7 of the Clayton Act to clearly apply to non-horizontal mergers,[13] merger enforcement also targeted acquisitions that created opportunities for the integrated firm to foreclose supplies that were previously available to unintegrated firms. But over time, our understanding of foreclosure has changed due to economic learning in area of vertical restraints.[14] We are no longer concerned about small levels of foreclosure that simply require finding another supplier. Today, we are focused on whether the merger will raise rivals' costs or make it more difficult for entry to occur in such a way that consumers will ultimately be harmed.

There are two basic types of foreclosure we are concerned about in vertical transactions: input foreclosure or customer foreclosure. Input foreclosure involves an upstream firm that supplies an input that downstream firms need to compete. The concern is that post-merger, the upstream firm will either refuse to supply downstream rivals or will provide supply only on disadvantageous terms that favor its own integrated downstream business unit. Of course, this scenario is difficult to assess in the abstract because it is also most likely to involve inherent cost-reducing effects. Those cost-reducing effects take two forms. First, the upstream firm internalizes the cost of transferring the product so it has an incentive to reduce the price downstream. In addition, even if downstream rival firms are paying more for the input, there is an overall downward pressure on price from the integrated firm's incentive to charge a lower

[10] See, e.g., DOJ's settlement in Monsanto/Delta & Pine Land (transaction would eliminate DPL as a partner independent of Monsanto for competing trait developers, thereby substantially delaying or preventing the development and introduction of cottonseed containing non-Monsanto traits), https://www.justice.gov/atr/case/us-v-monsanto-co-and-delta-and-pine-land-co.
[11] FTC Press Release, "FTC Seeks to Block Cytyc Corp.'s Acquisition of Digene Corp." (June 24, 2002).
[12] See United States v. Terminal Railroad Ass'n, 224 U.S. 383 (1912) (association of all railroads crossing river discriminated against non-affiliated railroads that needed access to its lines).
[13] Brown Shoe Co. v. United States, 370 U.S. 294 n. 30 (1962)
[14] See McWane v. FTC, 783 F.3d 814 (11th Cir. 2015).

price for its downstream product that benefits customers of the final product. In the abstract, it is very difficult to quantify these effects and measure them against the price-increasing effects of foreclosure; as our economists say, it is difficult even to sign the effect, let alone measure its magnitude.

Nonetheless, there have been cases in which the FTC determined that the price-reducing effects of vertical mergers were not sufficient to mitigate the potential for harm from foreclosure. For example, in a case involving concerns about input foreclosure, the FTC imposed conditions on the United Launch Alliance, a joint venture between Boeing and Lockheed Martin to consolidate manufacturing and development of space vehicles (i.e., satellites, interplanetary spacecraft, and other payloads) and attendant launch services. The Department of Defense was the only customer, and was supportive of the deal on national security grounds. However, DOD was concerned about vertical foreclosure—namely, that ULA would either favor Boeing or Lockheed vehicles or raise barriers to entry in the launch services market by refusing to buy launch services from a rival, such as SpaceX. To alleviate DOD's concerns, the FTC order requires ULA to cooperate on equivalent terms with all government space vehicle providers seeking to win U.S. government procurement contracts, and to provide equal consideration, information, and resources to any launch services competitors of ULA when bidding on a delivery in orbit contract.[15]

Customer foreclosure is the inverse of input foreclosure: the downstream firm refuses to buy from competitors of the upstream supplier. This was one aspect of DOJ's challenge to the merger of AMC and Carmike Cinemas. Both companies operated movie theater chains, which created horizontal overlaps in 15 local markets that required divestitures. But AMC also owned a significant stake in National Cinemedia and Carmike owned a significant stake in Screenvision, the two largest competitors for preshow cinema advertising. (DOJ blocked a merger of National Cinemedia and Screenvision in 2015). On the vertical aspects of the deal, DOJ alleged anticompetitive effects in the sale of preshow services and cinema advertising in the U.S. because the elimination of an independent Carmike would weaken Screenvision's ability to be a competitive check on NCM, its only other competitor. Screenvision depended on distribution in the Carmike network to obtain deals with advertisers. Post-merger, Screenvision could not rely on Carmike growth, and the number of independent theaters without an exclusive NCM contract would decline.[16]

3. A vertical merger may lead to anticompetitive behavior due to information sharing about a rival

Another common concern with vertical mergers is that the integrated firm gains access that it didn't previously have to competitively sensitive business information of an upstream or downstream rival. For example, in a vertical merger of an upstream manufacturer and a downstream distributor, the upstream business may not know much about its competitors' sales and margins, but the distributor would likely have significant information on those issues. This creates two concerns. First, the integrated firm might use the information about its competitor to

[15] In re The Boeing Company, Dkt. C-4188 (complaint filed Oct. 6, 2006).
[16] U.S. v. AMC Entertainment Holdings, Inc. and Carmike Cinemas, Inc., https://www.justice.gov/atr/case/us-v-amc-entertainment-holdings-inc-and-carmike-cinemas-inc.

make it harder for that firm to compete, which could reduce competition in the upstream market. Alternatively, the firms could use that information to facilitate coordination.

For instance, in 2010 when The Coca-Cola Company and PepsiCo, Inc. bought their largest bottlers—a pair of cases I'll call "Fear of Dr Pepper"—the Commission was concerned that each transaction would give Coke and Pepsi information either would not otherwise have about the business and marketing plans of their rival soft drink maker, Dr Pepper Snapple Group. The FTC orders created a firewall within each company to prevent bottling employees from sharing competitively sensitive information with employees involved in the manufacture of soft drink concentrate.[17]

More recently, the Commission imposed a firewall in the vertical merger of Broadcom and Brocade. Broadcom is a global developer and supplier of semiconductors and Brocade is the leading manufacturer of fibre channel switches, which are used to transfer data between servers and storage arrays in data centers. Brocade and Cisco are the only two competitors in the worldwide market for fibre channel switches, and Broadcom supplies both companies with ASICs to make fibre channel switches. The FTC alleged that the vertical acquisition could harm worldwide competition in the fibre channel switch market because as Cisco's supplier, Broadcom has extensive access to Cisco's competitively sensitive confidential information. The FTC order requires Broadcom's business group responsible for providing Cisco with fibre channel ASICs have separate facilities and a separate information technology system with security protocols that allow access only to authorized individuals.[18]

I would note that there are some concerns that are sometimes raised to us that are not viable theories of anticompetitive harm. For example, we do not generally consider arguments that a vertical merger will make a firm a more effective competitor to be an anticompetitive effect. Reduced costs are not anticompetitive even if they make it more difficult for rivals to compete (leaving aside foreclosure issues). I am skeptical of arguments that vertical mergers cause harm due to an increased bargaining skill; this is likely not an anticompetitive effect because it does not flow from a reduction in competition. I would contrast that to the elimination of competition in a horizontal merger that leads to an increase in bargaining leverage that could raise price or reduce output.

What Remedies Are Available for Vertical Mergers?

Now let me turn to my last point—what do we look for to fix problems in vertical mergers? First and foremost, it's important to remember that the FTC prefers structural remedies to structural problems, even with vertical mergers. For example, Par Petroleum Corporation agreed to terminate its storage and throughput rights at a key gasoline terminal in Hawaii to settle FTC charges that its acquisition of Mid Pac Petroleum would likely be anticompetitive. Due to the merger, Par would gain Mid Pac's rights to Aloha's Barbers Point terminal, which it did not need for imports because it produced its own blendstock on the island, but which it could use to impair Aloha's use of its terminal. If Par were to hamper Aloha's import capability, it would

[17] In re PepsiCo, Inc., Dkt. C-4301 (complaint filed Feb. 26, 2010); In re The Coca-Cola Company, Dkt. C-4305 (complaint filed Sept. 27, 2010).
[18] In re Broadcom Limited, Dkt. C-4622 (complaint filed Jul. 3, 2017).

weaken Aloha's ability to negotiate lower bulk supply prices from Par and Chevron, and thus reduce Aloha's ability to compete effectively in the bulk supply market.[19]

But in some cases we believe that a behavioral or conduct remedy can prevent competitive harm while allowing the benefits of integration. For example, in our experience, and as the cases I discussed above suggest, firewalls can prevent information sharing, and non-discrimination clauses can eliminate incentives to disfavor rivals. The Commission's recent Remedy Study included four orders related to vertical mergers, and each one succeeded in maintaining competition at premerger levels.[20] This is a small sample, but it does suggest that we can, and we do, and we have fashioned conduct remedies in vertical mergers that curtail opportunities and incentives for anticompetitive behavior.

As Diana Moss from the American Antitrust Institute noted on a panel earlier today, though, there is a difference between modifying incentives and trying to constrain abilities. We are aware that conduct remedies that only address the ability to engage in anticompetitive behavior post-merger may not be sufficient to prevent competitive harm because people are smart—they will still have the incentive to engage in that behavior and they may find other ways to act on that incentive. As a result, conduct remedies can require constant monitoring (and the FTC often appoints a monitor to ensure compliance, as we did in the Pepsi and Coke orders) to ensure that employees in the firm do not act on those incentives. That is why we prefer structural remedies—they eliminate both the incentive and the ability to engage in harmful conduct, which eliminates the need for ongoing intervention.

This, of course, is nothing new, and some of the surprise over the DOJ's suit seeking to block the AT&T/Time Warner transaction seems to me to have missed the point that both agencies have long raised concerns about the viability of behavioral, or conduct, remedies in vertical merger cases. To illustrate the continuity here, let me quote again from the speech Jon Sallet gave in 2016:

> In vertical transactions, observers sometimes assume that conduct remedies will always be available and sufficient. But that is not the current practice of the Division—if it ever was. . . . Some vertical transactions may present sufficiently serious risks of foreclosing rivals' access to critical inputs or customers, or otherwise threaten competitive harm, that they require some form of structural relief or even require that the transaction be blocked.

I would agree. So no one should be surprised if the FTC looks closely at a vertical merger that raises the concerns I have addressed, and no one should be surprised if the FTC requires structural relief. If we have a valid theory of harm, we start by looking at structural remedies for most vertical mergers. If that can't be achieved without sacrificing the efficiencies that motivate the merger, then we can look at conduct remedies. If those won't work—or will be too difficult and problematic for us to be confident that they will work without an excessive

[19] In re Par Petroleum Corp., Dkt. C-4522 (complaint filed Mar. 15, 2015).
[20] FTC Staff Report, *The FTC's Merger Remedies 2006-2012: A Report of the Bureaus of Competition and Economics* (2017), https://www.ftc.gov/system/files/documents/reports/ftcs-merger-remedies-2006-2012-report-bureaus-competition-economics/p143100_ftc_merger_remedies_2006-2012.pdf.

commitment of FTC resources where we are effectively turned into a regulator—then there should be no surprise if we seek to block the merger.

Thank you.

Exhibit D

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of **Illumina, Inc.,** **a corporation** **and** **GRAIL, Inc.,** **a corporation,** **Respondents**	**DOCKET NO. 9401**

RESPONDENTS' FINAL PROPOSED WITNESS LIST

Pursuant to the April 26, 2021 Scheduling Order, this list designates the witnesses whom Illumina, Inc. ("Illumina") and GRAIL, Inc. ("GRAIL") (collectively, the "Respondents") currently contemplate calling as witnesses to testify in the above-captioned matter, along with the topics of each witness's proposed testimony, based on the information available on the undersigned date. Subject to the limitations in the Scheduling Order entered in this matter, Respondents reserve the right:

A. To amend this list, including to add or remove witnesses as necessary, including, but not limited to, in connection with any motions (including motions in limine) and the submission of witness testimony, exhibits or other evidence that Complaint Counsel may proffer;

B. To call any witnesses necessary to present summaries of voluminous evidence, or to demonstrate the authenticity or admissibility of any such summaries;

C. To supplement this list in light of any discovery that has not yet been completed;

D. To supplement this list in light of the Complaint Counsel's expert reports and/or expert depositions;

E. To present testimony by investigational hearing or deposition transcript of any person identified by a Party or non-Party as an FTC Rule 3.33(c) or Federal Rule of Civil Procedure 30(b)(6) representative of that Party or non-Party pursuant to a 3.33(c) or 30(b)(6) notice served by Complaint Counsel or Respondents;

F. To present testimony by declaration;

G. To call the custodian of records of any Party or non-Party from whom documents or records have been obtained—including but not limited to those Parties and non-Parties listed below—to the extent necessary for the admission of documents or deposition testimony into evidence in the event a stipulation cannot be reached concerning the authenticity or admissibility of such documents or testimony;

H. To call witnesses who may be necessary to lay the foundation for the admissibility of evidence should the parties prove unable to stipulate to admissibility;

E. To call any witnesses for the purposes of rebuttal or impeachment;

F. To question the persons listed below about any topics that are the subjects of testimony by witnesses called by Complaint Counsel;

G. To call any of these individuals or other witnesses who are not named, including any individual identified in Complaint Counsel's or Respondents' Preliminary Witness Lists, Supplemental Witness Lists, Final Witness Lists, any witness lists disclosed as part of the district court litigation, or who was otherwise deposed in this proceeding or in the district court litigation for rebuttal testimony, including any person who has or may be identified by Complaint Counsel as a potential witness in this matter.

Subject to these reservations of rights, Respondents provide the following final proposed witness list. Respondents currently intend to present the testimony of the below witnesses through live testimony (by virtual web platform) at the hearing. Respondents reserve the right to offer the prior testimony of additional witnesses who have been deposed, provided declarations or otherwise given testimony in connection with the district court litigation, this proceeding or the FTC's investigation of the Proposed Transaction. By including any of the witnesses on this list, Respondents assume no obligation to call or make available any witness during the proceeding, or to call them live rather than by deposition, investigational hearing transcript or declaration.

PARTY WITNESS LIST

1. **Francis deSouza** – President and Chief Executive Officer, Illumina, Inc. We expect Mr. deSouza will testify about Illumina's business strategy; Illumina's Next-Generation Sequencing Technology ("NGS") products; Illumina's customer relationships, including Illumina's open offer and the standard contract for oncology customers; Illumina's proposed re-acquisition of GRAIL (the "Proposed Transaction"); and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts,[1] and any topics identified by Complaint Counsel as potential topics for his testimony.

2. **Alex Aravanis** – Senior VP and Chief Technology Officer, Illumina, Inc. We expect Dr. Aravanis will testify about Illumina's NGS products; switching between diagnostic platforms for clinical applications, including oncology; alternative diagnostic platforms; the history of GRAIL; the Proposed Transaction, including Illumina's deal model; efficiencies and procompetitive effects of the Proposed Transaction; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts, and any topics identified by Complaint Counsel as potential topics for his testimony.

3. **Phil Febbo** – Chief Medical Officer, Illumina, Inc. We expect Dr. Febbo will testify about Illumina's NGS products; efficiencies and procompetitive effects of the Proposed Transaction, including efficiencies and procompetitive effects relating to regulatory approval of GRAIL's tests, including the Galleri test; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript and any topics identified by Complaint Counsel as potential topics for his testimony.

4. **Joydeep Goswami** – Senior VP, Corporate Development and Strategic Planning, Illumina Inc. We expect Dr. Goswami will testify about the Proposed Transaction, Illumina's strategic planning, Illumina's deal model, Illumina's agreements with customers including the open offer and agreements relating to regulated, kitted tests on Illumina's instruments; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts, and any topics identified by Complaint Counsel as potential topics for his testimony.

5. **Nicole Berry** – Senior VP and General Manager, Americas Region, Illumina, Inc. We expect Ms. Berry will testify about Illumina's NGS products, Illumina's negotiations with customers, Illumina's customer relationships,

[1] Respondents reserve all rights to object to the admissibility of all transcripts of investigational hearings conducted by the FTC during its investigation of the Proposed Transaction, and reference herein to the facts and opinions expressed in the investigational hearing transcripts does not alter those objections.

including Illumina's open offer and the standard contract for oncology customers; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in her investigational hearing and deposition transcript and any topics identified by Complaint Counsel as potential topics for her testimony.

6. **Ammar Qadan** – VP and Global Head of Market Access, Illumina, Inc. We expect Mr. Qadan will testify about efficiencies and procompetitive effects of the Proposed Transaction, including efficiencies and procompetitive effects relating to regulatory approval of, third party payor reimbursement for, GRAIL's tests, including the Galleri test; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript and any topics identified by Complaint Counsel as potential topics for his testimony.

7. **Stacie Young** – Senior Director of Business Development, Illumina, Inc. We expect Ms. Young will testify about Illumina's agreements with customers including the open offer and agreements relating to regulated, kitted tests on Illumina's instruments ("Illumina's IVD Agreements"); and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in her deposition transcript and any topics identified by Complaint Counsel as potential topics for her testimony.

8. **Jay Flatley** – former Chief Executive Officer; Outgoing Chairman of Illumina's Board of Directors, Illumina, Inc. We expect Mr. Flatley will testify about Illumina's NGS products; the history of GRAIL; Illumina's Non-Invasive Prenatal Testing ("NIPT") business; the Proposed Transaction; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts, and any topics identified by Complaint Counsel as potential topics for his testimony.

9. **Nicholas Naclerio** – former Senior VP, Corporate & Venture Development, Illumina Inc.; Founding Partner, Illumina Ventures. We expect Dr. Naclerio will testify about Illumina's NIPT business; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts, and any topics identified by Complaint Counsel as potential topics for his testimony.

10. **John Leite** – former VP Clinical Business Development, Illumina, Inc.; Chief Business Officer, InterVenn Biosciences. We expect Dr. Leite will testify about Illumina's agreements with customers including agreements relating to regulated, kitted tests on Illumina's instruments, InterVenn's proteomics platform, InterVenn's cancer screening tests in development and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts

and any topics identified by Complaint Counsel as potential topics for his testimony.

11. **Hans Bishop** – Chief Executive Officer, GRAIL, Inc. We expect Mr. Bishop will testify about the history of GRAIL; GRAIL's business; GRAIL's tests; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts, and any topics identified by Complaint Counsel as potential topics for his testimony.

12. **Josh Ofman** – Chief Medical Officer, GRAIL, Inc. We expect Mr. Ofman will testify about efficiencies and procompetitive effects of the Proposed Transaction relating to regulatory approval and reimbursement of GRAIL's tests, including the Galleri test; oncology tests, including GRAIL's tests; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript and any topics identified by Complaint Counsel as potential topics for his testimony.

13. **Aaron Freidin** – Senior VP, Finance, GRAIL, Inc. We expect Mr. Freidin will testify about efficiencies and procompetitive effects of the Proposed Transaction; GRAIL's deal model; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts and any topics identified by Complaint Counsel as potential topics for his testimony.

14. **Arash Jamshidi** – VP of Bioinformatics and Data Science, GRAIL, Inc. We expect Mr. Jamshidi will testify about oncology tests, including GRAIL's tests; switching between diagnostic platforms for clinical applications, including oncology; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript, and any topics identified by Complaint Counsel as potential topics for his testimony.

15. **Chris Della Porta –** Director of Growth Marketing, GRAIL, Inc. We expect Mr. Della Porta will testify about GRAIL's business; oncology tests including GRAIL's tests; efficiencies and procompetitive effects of the Proposed Transaction; and other topics relevant to the Complaint, Answer or any affirmative defenses, including facts and opinions expressed in his deposition transcript and any topics identified by Complaint Counsel as potential topics for his testimony.

THIRD PARTY WITNESS LIST

16. **Konstantin Fiedler** – Chief Operating Officer, Foundation Medicine, Inc. ("FMI"). We expect Dr. Fiedler will testify about the Proposed Transaction; Illumina's relationship with FMI and Roche, including agreements between FMI and Roche; Dr. Fiedler's declaration; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions

expressed in his deposition transcript, and any topics identified by Complaint Counsel as potential topics for his testimony.

17. **Lauren Silvis** – Senior VP, External Affairs, Tempus Labs, Inc. ("Tempus Labs"). We expect Ms. Silvis will testify about Tempus Labs' business; its oncology products; the Proposed Transaction; supply agreement negotiations with Illumina, including the open offer and the standard contract for oncology customers; and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in her investigational hearing and deposition transcripts, and any topics identified by Complaint Counsel as potential topics for her testimony.

18. **Jorge Velarde** – Senior Vice President, Corporate Development and Strategy, Singular Genomics. We expect Mr. Velarde will testify about the Proposed Transaction; Singular's S-1 filing and subsequent Initial Public Offering ("IPO"); Singular's NGS platform and products in development; the ability to use Singular's platforms and products in development for cancer screening applications; switching between Illumina's platforms and Singular's platforms for clinical applications and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript, and any topics identified by Complaint Counsel as potential topics for his testimony.

19. **Matthew Strom** – Managing Director, Morgan Stanley. We expect Mr. Strom will testify about any contemplated fundraising, IPO, or merger by GRAIL; Illumina and GRAIL's royalty and supply agreement; efficiencies and procompetitive effects of the proposed transaction; and other topics relevant to the Complaint, Answer or any affirmative defenses, including facts and opinions expressed in his deposition transcript and any topics identified by Complaint Counsel as potential topics for his testimony.

20. **William Cance** – Chief Medical and Scientific Officer at the American Cancer Society. We expect Dr. Cance will testify about the American Cancer Society's operations, current cancer screening methods, the importance of early cancer detection, innovation in cancer detection and treatments, the importance of customer choice, market definition, regulatory processes and approvals, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his declaration and deposition transcript and any topics identified by Complaint Counsel as potential topics for his testimony.

EXPERT WITNESS LIST

1. **Dennis Carlton** – Dennis Carlton is an industrial organization and antitrust economics expert. He will testify about economic issues, including the proposed transaction, finances, projections, strategic plans, pricing strategy and structure, cost structure, customer relationships and contract negotiations, the competitive effects of the proposed transaction, efficiencies arising from the

transaction and the procompetitive nature of the transaction, other topics relevant to the Complaint and Answer, any topics contained in his expert report(s) or deposition and any topics raised by Complaint Counsel's experts in their expert reports or depositions and will respond to any economic analysis or other arguments put forward by Complaint Counsel.

2. **Richard Cote** – Richard Cote is an expert on the field of cancer care, the area of test development for cancer screening and in the area of next-generation sequencing ("NGS"), and is a medical doctor. He will testify about cancer and cancer treatment, methods for cancer screening, the differences between different types of oncology tests in the cancer continuum, oncology tests on the market and in development, comparisons between such tests on the market and in development, the development timelines for such oncology tests, various platforms—both NGS and non-NGS—that can be used for such oncology tests, switching between different platforms for such oncology tests and the potential use of *in vitro* diagnostic ("IVD") kitted tests for oncology testing. He will also testify regarding technical issues relating to the relevant market(s) alleged by Complaint Counsel, other topics relevant to the Complaint and Answer, any topics contained in his expert report(s) or deposition and any topics raised by Complaint Counsel's experts in their expert reports or depositions and will respond to any technical issues or other arguments put forward by Complaint Counsel, primarily focusing on issues relating to cancer screening and NGS technologies.

3. **Patricia Deverka** – Patricia Deverka is an expert on the field of health economics and outcomes research, focusing on the clinical adoption of genomics. She will testify about the process for obtaining private payor and Medicare/Medicaid coverage, including potential pathways for multi-cancer screening tests and Illumina's ability to accelerate that process for GRAIL's Galleri test, payor relationships, other topics relevant to the Complaint and Answer, any topics contained in her expert report(s) or deposition and any topics raised by Complaint Counsel's experts in their expert reports or depositions and will respond to any other arguments put forward by Complaint Counsel, primarily focusing on third party payor reimbursement and Medicare/Medicaid coverage for cancer screening tests.

4. **Margaret Guerin-Calvert** – Margaret Guerin-Calvert is an industrial organization, antitrust and healthcare economics expert. She will testify about issues relating to Illumina's open offer and standard contract for oncology, including Illumina's standard IVD terms, as a means to reduce or eliminate certain alleged potential anticompetitive effects raised by Complaint Counsel and Dr. Fiona Scott Morton, relating to Illumina's proposed acquisition of GRAIL; other topics relevant to the Complaint and Answer; any topics contained in her expert report(s) or deposition; and any topics raised by Complaint Counsel's experts in their expert reports or depositions and will respond to any economic analysis or other arguments put forward by

Complaint Counsel, primarily focusing on the open offer and other contractual terms from Illumina.

5. **Robert Willig** – Robert Willig is an industrial organization and antitrust economics expert. He will testify about the soundness and reliability of the relevant product market defined by Dr. Fiona Scott Morton, and her analysis in support of that definition, market participants' conduct and whether their conduct is consistent with Complaint Counsel's claim that there will be no viable substitutes for Illumina's NGS platforms (from the standpoint of purported multi-cancer early detection ("MCED") test developers), during the relevant time period, the bargaining model presented by Dr. Scott Morton, its applicability to the proposed merger, and its robustness, other topics relevant to the Complaint and Answer, any topics contained in his expert report(s) or deposition and any topics raised by Complaint Counsel's experts in their expert reports or depositions and will respond to any economic analysis or other arguments put forward by Complaint Counsel, primarily focusing on the relevant product market from an economics standpoint, bargaining and theories of anticompetitive effects.

6. **Robert Rock**[2] – Robert Rock is an expert in financial accounting, contract compliance, and audit engagements. He will testify about the proposed transaction, customer relationships and contract negotiations; Illumina's open offer, standard contract for oncology customers, and any other agreements, including the ability of an independent auditor or consultant to be effective in examining an entity's compliance with various terms of contracts, performing agreed-upon procedures related to an entity's compliance with specified terms and performing agreed-upon procedures related to an entity's internal controls over compliance with specified terms; other topics relevant to the Complaint and Answer; any topics contained in his expert report(s) or deposition; and any topics raised by Complaint Counsel's experts in their expert reports or depositions, and will respond to any accounting, compliance or audit analysis or other arguments put forward by the Complaint Counsel, primarily focusing on the open offer and other contractual terms from Illumina.

7. **Richard Abrams**[3] – Richard Abrams is an expert in the field of primary and preventative care, and is a medical doctor. He will testify about current and anticipated cancer screening options, including purported MCED tests, the factors primary care physicians would consider prior to using a MCED test and whether the blood-based tests with other characteristics could substitute for GRAIL's Galleri test and vice versa, other topics relevant to the Complaint and Answer; any topics contained in his expert report(s) or deposition; and any

[2] Pursuant to 16 CFR § 3.31A, Respondents intend to move for leave to call Robert Rock as an additional expert beyond the five expert witnesses permitted under the default rules.

[3] Pursuant to 16 CFR § 3.31A, Respondents intend to move for leave to call Richard Abrams as an additional expert beyond the five expert witnesses permitted under the default rules.

topics raised by Complaint Counsel's experts in their expert reports or depositions, and will respond to any analysis or arguments put forward by Complaint Counsel, primarily focusing on the factors primary care physicians would consider prior to using a MCED test.

Dated: July 23, 2021

Respectfully submitted,

/s/ Richard J. Stark

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CERTIFICATE OF SERVICE

I hereby certify that, on July 23, 2021, I caused to be delivered via email a copy of Complaint Counsel's Final Proposed Witness List to:

The Honorable D. Michael Chappell
Administrative Law Judge
Federal Trade Commission
600 Pennsylvania Ave., N.W., Rm. H-110
Washington, D.C. 20580

I hereby certify that I caused the foregoing document to be served via email to:

Complaint Counsel
U.S. Federal Trade Commission

Susan Musser
Dylan P. Naegele
David Gonen
Jonathan Ripa
Matthew E. Joseph
Jordan S. Andrew
Betty Jean McNeil
Lauren Gaskin
Nicolas Stebinger
Samuel Fulliton
Stephen A. Mohr
Sarah Wohl
William Cooke
Catherine Sanchez
Joseph Neely
Nicholas A. Widnell
Daniel Zach
Eric D. Edmonson

July 23, 2021

/s/ Richard J. Stark
Richard J. Stark

Exhibit E

UNITED STATES OF AMERICA
BEFORE THE FEDERAL TRADE COMMISSION
OFFICE OF ADMINISTRATIVE LAW JUDGES

In the Matter of **Illumina, Inc.,** **a corporation**, **and** **GRAIL, Inc.,** **a corporation**, **Respondents.**	**DOCKET NO. 9401**

COMPLAINT COUNSEL'S FINAL PROPOSED WITNESS LIST

Pursuant to the April 26, 2021 Scheduling Order, Complaint Counsel designates the persons listed herein as the witnesses whom Complaint Counsel currently contemplates calling to testify live at the hearing in this matter by either video-telephone conference or in-person testimony. Complaint Counsel reserves the following additional rights:

A. To call the custodian of records of any party or non-party from whom documents or records have been obtained – specifically including, but not limited to, those parties and non-parties listed below – to the extent necessary to demonstrate the authenticity or admissibility of documents in the event a stipulation cannot be reached concerning the authentication or admissibility of such documents or we cannot obtain the necessary affidavits;

B. To call any witnesses necessary to present summaries of voluminous evidence, or to demonstrate the authenticity or admissibility of any such summaries;

C. To supplement this list in light of any discovery that has not yet been completed;

D. To supplement this list in light of Respondents' Final Proposed Witness and Exhibit Lists;

E. To supplement this list in light of the Respondents' expert reports;

F. To amend this list to be consistent with the Court's rulings on any motions *in limine* filed in this matter;

G. To question the persons listed below about any topics that are the subject of testimony by

witnesses called by Respondents;

H. To question the persons listed below about any other topics about which the person testified at his or her deposition or investigational hearing, any matter that is discussed in any document to which the person has access and which is designated as an exhibit by either party, or produced since the person's deposition was taken, or any other matters as to which it is determined that the person has knowledge that is relevant to the allegations of the Complaint, Respondents' affirmative defenses, or the remedy to be entered in this case;

I. Not to call at the hearing any of the persons listed; and

J. To call any of these or other individuals who are not named, including any individual identified in either Complaint Counsel's or Respondents' Preliminary Witness Lists, Supplemental Witness Lists, Final Witness Lists, or was otherwise deposed in this proceeding for rebuttal.

Subject to these reservations of rights, Complaint Counsel provides the following final proposed witness list:

PARTY WITNESSES

1. **Alex Aravanis**: Mr. Aravanis is Senior Vice President and Chief Technology Officer at Illumina and co-founder and former Chief Science Officer and Head of Research and Development at Grail. We expect Mr. Aravanis will testify about the proposed transaction, the competitive effects of the proposed transaction, market definition, the formation of Grail, Grail's development plans, Grail's competitors, technical requirements for Grail's tests, next-generation sequencing platforms, other testing technologies, Illumina's commercialization plans for oncology clinical tests, including but not limited to Grail, Illumina's strategic plans, data related to NGS or oncology testing, any alleged efficiencies, synergies, or dis-synergies relating to the transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

2. **Nicole Berry**: Ms. Berry is Senior Vice President and General Manager, Americas at Illumina. We expect Ms. Berry will testify about Illumina's operations, Grail, the relationship between Illumina and Grail, the proposed transaction, the competitive effects of the proposed transaction, market definition, Illumina pricing including discounting, costs, customer relationships and contract negotiations including negotiations related to amended supply agreements or open offer, customer service and technical assistance offered by Illumina to its customers, customer purchases, data related to NGS or oncology testing, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in her investigational hearing and deposition transcripts.

3. **Hans Bishop**: Mr. Bishop is CEO of Grail. We expect Mr. Bishop will testify about Grail's operations, Grail's products, Illumina, the proposed transaction, any contemplated IPO, the competitive effects of the proposed transaction, market definition, market size and projections, competition and Grail's competitors including Grail's competitive intelligence efforts, time and requirements for commercialization of Grail products, product development, any alleged efficiencies, synergies, or dis-synergies relating to the transaction, finances, next-generation sequencing platforms, other testing technologies, any long-range and strategic plans and forecasts, customer relationships and contract negotiations, payer relationships and contract negotiations, supplier relationships and contract negotiations, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

4. **Chris Della Porta**: Mr. Della Porta is Director of Growth Marketing at Grail. We expect Mr. Della Porta will testify about Grail's operations, Grail's products, the proposed transaction, the competitive effects of the proposed transaction, market definition, competition and Grail's competitors including Grail's competitive intelligence efforts, Grail's Galleri launch plans and commercial strategy, product development, strategic plans and forecasts, customer relationships and contract negotiations, payer relationships and contract negotiations, supplier relationships and contract negotiations, any alleged efficiencies, synergies, or dis-synergies relating to the transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript.

5. **Francis deSouza**: Mr. deSouza is CEO of Illumina. We expect Mr. deSouza will testify about Illumina's operations, Grail including Illumina's formation and sale of Grail, the proposed transaction and due diligence related to the proposed transaction, the competitive effects of the proposed transaction, market definition, market size, efficiencies, finances, strategic plans and forecasts, pricing, costs, customer relationships, any alleged efficiencies, synergies, or dis-synergies relating to the transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

6. **Aaron Freidin**: Mr. Freidin is Senior Vice President of Finance at Grail. We expect Mr. Freidin will testify about Grail's operations, the proposed transaction, the competitive effects of the proposed transaction, market definition, product development, efficiencies, finances, strategic plans and forecasts, competition and Grail's competitors including Grail's competitive intelligence efforts, pricing, costs, any contemplated IPO or merger by Grail, data related to NGS or oncology testing, any alleged efficiencies, synergies, or dis-synergies relating to the transaction, any long-range and strategic plans and forecasts, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

7. **John Leite**: Mr. Leite is former Vice President of Business Development at Illumina. We expect Mr. Leite will testify about Illumina's operations, Illumina's customer

relations, Grail, the proposed transaction, the competitive effects of the proposed transaction, strategic plans and forecasts, pricing, costs, customer relationships and contract or license negotiations including IVD or other partnership agreements and negotiations, data related to NGS or oncology testing, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts. Mr. Leite will also testify about his role and responsibilities at InterVenn Biosciences, including but not limited to his interactions with Illumina.

THIRD-PARTY WITNESSES

1. **William Cance**: Dr. Cance is Chief Medical and Scientific Officer at the American Cancer Society. We expect Dr. Cance will testify about the American Cancer Society's operations, current cancer screening methods, the importance of early cancer detection, innovation in cancer detection and treatments, the importance of customer choice, market definition, regulatory processes and approvals, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his declaration and deposition transcript.

2. **Ken Chahine**: Mr. Chahine is CEO of Helio and former Executive Vice President and General Manager at Ancestry.com. We expect Mr. Chahine will testify about Helio's operations, Helio and Ancestry.com's relationship with Illumina, market definition, product development, strategic plans and forecasts, competition and Helio's competitors, contract negotiations, Illumina's open offer, regulatory processes and approvals, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript.

3. **Darya Chudova**: Ms. Chudova is Senior Vice President of Technology at Guardant. We expect Ms. Chudova will testify about Guardant's operations, product development, strategic plans and forecasts, next-generation sequencing platforms, other testing and sequencing technologies, technical requirements for cancer screening tests, regulatory processes and approvals, data related to NGS or oncology testing, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in her investigational hearing and deposition transcripts.

4. **Kevin Conroy**: Mr. Conroy is CEO of Exact Sciences. We expect Mr. Conroy will testify about Exact Sciences' operations, Thrive's operations, Exact Sciences' relationship with Illumina, market definition, product development, strategic plans and forecasts, competition and Exact Sciences' competitors, contract negotiations including negotiations related to amended supply agreements or open offers, regulatory processes and approvals, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, the competitive effects of the

proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

5. **Dave Daly**: Mr. Daly is President and Chief Operating Officer at Singular Genomics and former CEO of Thrive. We expect Mr. Daly will testify about Singular's operations, Thrive's operations, Illumina's operations, Singular and Thrive's relationship with Illumina, market definition, product development, strategic plans and forecasts, competitors, Thrive's contract negotiations including negotiations related to amended supply agreements or open offers, regulatory processes and approvals Illumina's customer relationships and contract negotiations including IVD or other partnership agreements and negotiations, the competitive effects of the proposed transaction, Illumina's relationship with Grail, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript.

6. **Andy Felton**: Mr. Felton is Vice President of Product Management, Ion Torrent, at Thermo Fisher. We expect Mr. Felton will testify about Thermo Fisher's operations, Thermo Fisher's current and pipeline products and their specifications, product development, strategic plans and forecasts, competitors, customer relationships and contract negotiations, regulatory processes and approvals, next-generation sequencing platforms, other testing and sequencing technologies, technical requirements for cancer screening tests, data related to NGS or oncology testing, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

7. **John Fesko**: Mr. Fesko is Chief Business Officer at Natera. We expect Mr. Fesko will testify about Natera's operations, Natera's relationship with Illumina, market definition, non-invasive prenatal testing, product development, market definition, strategic plans and forecasts, competition and Natera's competitors, contract negotiations including negotiations related to amended supply agreements or open offers, regulatory processes and approvals, negotiations relating to IVD agreements, patent litigation and settlements with Illumina, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

8. **Gary Gao**: Mr. Gao is Co-Founder and Scientific Advisor, and former CEO and Chairman, of Singlera. We expect Mr. Gao will testify about Singlera's operations, Singlera's relationship with Illumina, market definition, product development, importance of innovation in cancer testing, strategic plans and forecasts, competition and Singlera's competitors, regulatory processes and approvals, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, the competitive effects of the proposed transaction, contract negotiations including negotiations related to amended supply agreements or open offers, and other

topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

9. **William Getty**: Mr. Getty is Vice President of Commercial, Cancer Screening Core, at Guardant. We expect Mr. Getty to testify about Guardant's operations, Guardant's relationship with Illumina, Guardant's products, Guardant's approach to early cancer screening, test performance attributes, market size and projections, time and requirements for entry, market definition, product development, strategic plans and forecasts, competition and Guardant's competitors, contract negotiations including negotiations related to amended supply agreements or open offers, regulatory processes and approvals, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

10. **Christopher Lengauer**: Mr. Lengauer is former Chief Innovation Officer and Co-Founder of Thrive. We expect Mr. Lengauer will testify about Thrive's operations, Thrive's products, Thrive's development plans, Thrive's relationship with Illumina, market definition, product development, test performance attributes, strategic plans and forecasts, competition and Thrive's competitors, contract negotiations including negotiations related to amended supply agreements or open offers, regulatory processes and approvals, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

11. **Michael Nolan**: Mr. Nolan is Chief Executive Officer at Freenome. We expect Mr. Nolan will testify about Freenome's operations, Freenome's relationship with Illumina, market definition, product development, strategic plans and forecasts, competition and Freenome's competitors, time and requirements for entry, contract negotiations including negotiations related to amended supply agreements or open offers, regulatory process and approvals importance of application specific intellectual property, next-generation sequencing platforms, other testing and sequencing technologies, data related to NGS or oncology testing, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

12. **Matthew Rabinowitz**: Mr. Rabinowitz is Executive Chairman and Co-Founder of Natera. We expect Mr. Rabinowitz will testify about Natera's operations, Natera's products, Natera's relationship with Illumina including Illumina's past behavior and actions towards Natera, market definition, non-invasive prenatal testing, product development, regulatory processes and approvals, strategic plans and forecasts, competition and Natera's competitors, contract negotiations including negotiations related to amended supply agreements or open offers, patent litigation and settlements with Illumina, next-generation sequencing platforms, other testing and sequencing

technologies, data related to NGS or oncology testing, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his investigational hearing and deposition transcripts.

13. **Matthew Strom**: Mr. Strom is a Managing Director at Morgan Stanley. We expect Mr. Strom will testify about any contemplated IPO or merger by Grail, Illumina, market definition, competition and Grail's competitors, next-generation sequencing platforms, other testing technologies, the proposed transaction, the competitive effects of the proposed transaction, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in his deposition transcript.

EXPERT WITNESSES

1. **Fiona Scott Morton**: Dr. Morton is the Theodore Nierenberg Professor of Economics at the Yale University School of Management. At Yale, Dr. Morton teaches courses on competitive strategy and conduct research in the area of empirical industrial organization. Dr. Morton holds a Bachelor's degree in Economics from Yale and a Ph.D. in Economics from the Massachusetts Institute of Technology. From 2011 to 2012, Dr. Morton held the position of Deputy Assistant Attorney General for Economic Analysis in the Antitrust Division of the U.S. Department of Justice. Dr. Morton's research is in the field of empirical industrial organization, which is the application of empirical methods to the field of industrial organization. The field of industrial organization examines the structure of firms and markets, including competitive markets and monopolies. Dr. Morton's work focuses on empirical studies of competition among companies and firms and the role of market structure. We expect Dr. Morton will testify to matters relevant to market definition, the competitive effects of the proposed transaction, changed incentives post-merger, innovation, alleged efficiencies, and other topics relevant to the Complaint, Answer, or any affirmative defenses, including facts and opinions expressed in her deposition transcript, expert report, or Respondents' expert reports.

2. **Rebuttal Expert Witness Amol Navanthe**: Complaint Counsel reserves the right to present testimony from Dr. Amol Navanthe rebutting certain analyses, assumptions, and conclusions presented by Respondent's expert witnesses. The precise focus of the relevant rebuttal testimony will be disclosed on July 26, 2021 per the April 26, 2021 Scheduling Order.

3. **Rebuttal Expert Witness Dov Rothman:** Complaint Counsel reserves the right to present testimony from Dr. Dov Rothman rebutting certain analyses, assumptions, and conclusions presented by Respondent's expert witnesses. The precise focus of the relevant rebuttal testimony will be disclosed on July 26, 2021 per the April 26, 2021 Scheduling Order.

Date: July 16, 2021

Respectfully submitted,

s/ Susan Musser

Susan Musser
Bureau of Competition
Federal Trade Commission
400 7th Street, S.W.
Washington, D.C. 20024

Counsel Supporting the Complaint

CERTIFICATE OF SERVICE

I hereby certify that, on July 16, 2021, I caused to be delivered via email a copy of Complaint Counsel's Final Proposed Witness List to:

The Honorable D. Michael Chappell
Administrative Law Judge
Federal Trade Commission
600 Pennsylvania Ave., N.W., Rm. H-110
Washington, D.C. 20580

I hereby certify that on July 16, 2021, I caused the foregoing document to be served via email on:

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GRAIL, Inc.

s/ Susan Musser
Susan Musser

Bureau of Competition
Federal Trade Commission
400 7th Street, S.W.
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Counsel Supporting the Complaint

Exhibit F

(CONFIDENTIAL – REDACTED IN ENTIRETY)

Exhibit G

From: Musser, Susan
To: Allison Kempf; Joseph, Matthew; Andrew, Jordan S.; Gaskin, Lauren; Simons, Bridget; Stebinger, Nicolas; Widnell, Nicholas; Naegele, Dylan; Mohr, Stephen A.
Cc: Illumina Trial Team; LWVALORANTITRUST.LWTEAM@lw.com; Viswanatha, Veena
Subject: RE: Illumina-GRAIL -- Proposed FTC Exhibit
Date: Wednesday, August 4, 2021 3:03:00 PM

Allison:

Thank you for your email. To be clear, PX9225's relevance is unrelated to whether or how Mr. DeSouza obtained a divorce. PX9225 is an order affirming a lower court's ruling that Mr. DeSouza "breached his fiduciary duty to his former wife Erica . . ." Illumina has made the representation multiple times that, by and through its executives, it will adhere to the terms of its open offer and will not disadvantage its customers post-transaction. This order is relevant as to whether and if Illumina's top executives will indeed abide by its agreements. Moreover, this goes directly to the credibility of one of Illumina's witnesses, Mr. DeSouza.

However, in the spirit of compromise Complaint Counsel would be willing to remove this document from the exhibit list if Respondents would be willing to stipulate that the First Appellate District of the State of California found that Mr. DeSouza violated his fiduciary duty to his wife by removing property from the marital estate in violation of a court order.

Best,

Susan

From: Allison Kempf <akempf@cravath.com>
Sent: Wednesday, August 4, 2021 10:21 AM
To: Musser, Susan <smusser@ftc.gov>; Joseph, Matthew <mjoseph1@ftc.gov>; Andrew, Jordan S. <jandrew@ftc.gov>; Gaskin, Lauren <lgaskin@ftc.gov>; Simons, Bridget <bsimons@ftc.gov>; Stebinger, Nicolas <nstebinger@ftc.gov>; Widnell, Nicholas <nwidnell@ftc.gov>; Naegele, Dylan <dnaegele@ftc.gov>; Mohr, Stephen A. <smohr@ftc.gov>
Cc: Illumina Trial Team <IlluminaTrialTeam@cravath.com>; LWVALORANTITRUST.LWTEAM@lw.com; Viswanatha, Veena <vviswanatha@buckleyfirm.com>
Subject: Illumina-GRAIL -- Proposed FTC Exhibit

Counsel,

We are writing in connection with the FTC's Final Proposed Exhibit List served on July 16, 2021.

One of the FTC's exhibits, bearing bates number PX9225, is a decision from the Court of Appeal of the State of California related to divorce proceedings between Francis deSouza and his former spouse. Complaint Counsel has called Mr. deSouza to testify in his capacity as Illumina's CEO as a fact witness on topics related to Illumina's proposed acquisition of GRAIL. Evidence regarding his

divorce has no bearing on any fact at issue in the case and would serve no legitimate purpose in these proceedings.

Please let us know by 3 p.m. ET today your reasons for including this exhibit as part of the FTC's case, and whether you will agree to withdraw it. If you do not agree, Respondents intend to file a motion *in limine* to exclude this evidence and any related testimony on the grounds that it is irrelevant and unduly prejudicial. We are available to meet and confer if you would like to discuss.

Regards,
Allison

Allison Kempf
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825 Eighth Avenue | New York, NY 10019
(212) 474-1255
akempf@cravath.com

Exhibit H

(CONFIDENTIAL – REDACTED IN ENTIRETY)

CERTIFICATE OF SERVICE

I hereby certify that on August 18, 2021, I filed the foregoing document electronically using the FTC's E-Filing System, which will send notification of such filing to:

April Tabor
Secretary
Federal Trade Commission
600 Pennsylvania Ave., NW, Rm. H-113
Washington, DC 20580
ElectronicFilings@ftc.gov

The Honorable D. Michael Chappell
Administrative Law Judge
Federal Trade Commission
600 Pennsylvania Ave., NW, Rm. H-110
Washington, DC 20580

I also certify that I caused the foregoing document to be served via email to:

David Marriott Christine A. Varney Sharonmoyee Goswami Cravath, Swaine & Moore LLP 825 Eighth Avenue New York, NY 10019 (212) 474-1140 dmarriott@cravath.com cvarney@cravath.com sgoswami@cravath.com *Counsel for Illumina, Inc.*	Al Pfieffer Michael G. Egge Marguerite M. Sullivan Latham & Watkins LLP 555 Eleventh Street, NW Washington, DC 20004 (202) 637-2285 al.pfeiffer@lw.com michael.egge@lw.com marguerite.sullivan@lw.com *Counsel for GRAIL, Inc.*

/s/ Susan A. Musser
Susan A. Musser

Counsel Supporting the Complaint